Now, If You'll Look To Your Left...

A Handbook for Tourist & Community Guides
In Knysna and Plettenberg Bay

Martin Hatchuel

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Introduction to Tourism and Knysna

Introduction to Tourism and Knysna

Tourism is the World's biggest earner of foreign exchange: 592 million people traveled as tourists during 1995, and 100 million people found work in tourism. During that same year global tourism generated 1903.5 billion rands worth of foreign exchange: that is 10% of the combined Gross National Product of all the nations of the world.

During 1995, tourism brought 13 billion rands worth of business - and, therefore, 13 billion rands worth of foreign exchange - to South Africa. The average foreign visitor spent 19 nights in the country, of which 12.3 nights were spent in the Western Cape Province (8.8 nights in Cape Town, 1.7 nights in the Garden Route and 1.8 nights elsewhere in the Province).

It is significant that the majority of foreign visitors spent the **largest part of their holiday** ***in our Province!***

Knysna's Geographical Location

Knysna is one of the most important towns on South Africa's Garden Route. It lies on the banks of the Knysna River Estuary. The national road route N2 runs through the town.

Knysna is 490 km east of Cape Town and 260 km west of Port Elizabeth.

The Garden Route is a narrow coastal strip within the Western Cape. It lies between Albertinia in the west and Storms River in the east. Its northern border is formed by the Tsitsikamma and Outeniqua Mountains. It is the only part of Africa that receives all-year rainfall.

The name ***Garden Route*** was given to the area because of its natural beauty. The unique combination of mountains, rivers, beaches and ocean combined with a patchwork of fynbos, forest, lakes and small towns is what draws the visitor to this area. *Satour*, South Africa's national tourism authority, has published results of surveys that show that 30% of all tourists rate ***scenic beauty*** and 30% rate ***wildlife*** as their most important reasons for coming to the country . It can be concluded that the Garden Route draws the majority of its visitors for the same reasons[1].

The Satour statistics show that the five most important attractions in South Africa are in the Cape Peninsula. They are:

1 The V&A Waterfront,
2 Table Mountain,
3 Kirstenbosch,
4 The Wine lands and
5 Cape Town itself.

It is significant, therefore, that the next two most popular attractions for foreign visitors are:

6 The Garden Route and
7 Oudtshoorn

[1] It is important to examine why environmentalists and pressure groups fight so hard to preserve the scenic beauty of the Garden Route: It is often done to protect tourism, ***because the scenic beauty that we have here is so important to the tourist***, and because tourism is an industry that directly and indirectly provides many of the jobs in the area.

Getting to Knysna

Knysna is easily accessible to tourists because of:

- its position on the national road route N2
- its close proximity to George airport (60 km to the west) and Plettenberg Bay airport (30 km to the east)
- the regular, scheduled inter-city bus services that pass through
- the regular, scheduled train service provided by the Outeniqua Tjoe-Choo.

The Tourist's Perception of Knysna

From Satour's figures, we can conclude that the tourist is most probably drawn to Knysna by its natural beauty. But once here, what is his perception likely to be?

To say that Knysna's visitors chose to spend time here only because of the town's natural beauty, would be to ignore its many other attractions. The Knysna Tourism Bureau has identified these attractions as being (in no special order):

- The natural beauty
- The town's potential as a host for sports events and conferences
- Investment opportunities (property and business opportunities)
- The village-like atmosphere of the town centre
- Our endangered wildlife: The Knysna elephant
- The Brenton-Blue butterfly
- The Knysna sea-horse
- Indigenous forests & fynbos
- The safety (lack of violent crime) and tranquillity of the Garden Route
- Easy access
- Pleasant weather
- Unusual agricultural enterprises (such as oyster farming)
- The entertainment offered (night-clubs, bars, theatre, music, fine art)
- The ***mystique*** of the town: that almost undefinable sense of atmosphere created by its unusual history, its natural position and the mix of cultures found here.
- Knysna is the centre of forestry in the Western Cape, and an entire culture has been built up around both the indigenous forests and the exotic plantations. This includes
  - Hiking,
  - Mountain biking,
  - Camping,
  - Scenic drives,
  - Furniture factory tours,
  - Furniture sales, and
  - Curio manufacture and sale .
- Many nature reserves, including
  - The Knysna Lagoon
  - The Wilderness National Park,
  - Featherbed Nature Reserve,
  - Goukamma Nature Reserve, and
  - The smaller (often private) nature reserves
- Water sports (diving, surfing, water skiing, bathing, sailing, etc)

- The wide range of places offering holiday accommodation in the area (from inexpensive backpackers lodges, through moderately priced self-catering and bed-and-breakfasts, to expensive and exclusive hotels and guest houses)
- Adventure tourism (canoeing, hiking, abseiling, etc)
- The Outeniqua Choo-Choo (steam train services have become very rare around the world. In 1996, the Outeniqua Choo Tjoe carried 96 000 passengers - most of whom traveled simply for the experience of being on an old train)
- Many attractions are within walking distance of the town centre
- The shopping and wide range of related services offered (interesting and unusual shops and markets, good restaurants, banks, etc)
- The variety of cultures represented here.

These facilities are important to the visitor. This makes them vitally important to those people (including tourist guides) who wish to market the town as a tourist destination.

The above points should be borne in mind because research has shown that **these are the things that people want** ***to see and do when they come here.***

Unfortunately there are also very real problems which the tourist must face when he comes to South Africa (such as the crime rate). These, however, are sometimes beyond the control of Knysna's community. The weaknesses that we as a community ***can*** address (and many people in Knysna are trying to address) have been identified by the Tourism Bureau as being:

- The poor level of service and customer relations (friendliness is lacking! This ***is*** something every person in Knysna ***can*** work to improve)
- A lack of infrastructure (bus parking bays, motor car parking, public toilets, an adequate bypass road, adequate accommodation for tour groups, etc. These are, of course, problems which must be addressed by the municipality and by big business)
- A lack of adequate legislation to prevent inappropriate and insensitive property development, and the destruction of the scenic beauty of the area as a result. (It is ironic that the natural beauty of the area is its greatest strength, but also its greatest weakness: if we destroy the beauty that draws tourists here, they will no longer come here!)
- Destruction of the environment through vandalism and littering (this is a problem caused by both residents and visitors)
- A negative attitude amongst many local residents and some authorities towards tourism (people who do not share the vision of the benefits of tourism will not support the efforts of those who do).
- High property prices deter the middle-income group from settling here. This means that Knysna is not attracting an educated and experienced sector of the work force (the `middle managers') who would normally assist in the upliftment and training of local unskilled workers.

The tourist's perception of Knysna, therefore, can be summed up as being of a small town that is beautifully situated, and that offers a fairly wide variety of places to stay and things to do. There is, however, the very real problem of poor service and unfriendliness that is definitely noticed by visitors.

This is a problem that needs to be addressed by **every single citizen** ***who lives in Knysna! It is crucial to the sustainability of tourism in Knysna***.

The Role of the Tourism Bureau

The Knysna Tourism Bureau is an accredited bureau in terms of the Western Cape Tourism Act (Act 3 of 1997). The Bureau's aims are summarised in its ***Mission Statement***:

> *The Knysna Tourism Bureau's mission is to market Knysna as a tourist destination that is committed to service excellence and eco-tourism;*
> *to market the town to South African visitors, foreign tourists and the tourism trade;*
> *to act as a tourism information service to visitors and the townsfolk; and*
> *to create an enabling environment for the development of human resources within a sustainable and appropriate tourism infrastructure.*
> *Mindful of the needs of visitors, our members, the townsfolk of Knysna and the natural environment, the Knysna Tourism Bureau strives to be the first ambassador for*
>
> **Knysna: The Place of People, Beauty and Mystery**

The Western Cape Tourism Act requires the Bureau to fulfill certain roles in the community. These are:

- To formulate tourism policy and strategy:
- To market Knysna as a tourist destination
- To provide an information and assistance service for tourists
- To develop and promote tourism skills and awareness within the local community
- To promote the development of an appropriate tourism infrastructure
- To elect the town's representative at the Regional Tourism Authority
- To protect and advance people from previously disadvantaged communities within the tourism industry
- To identify and promote the cultural assets of Knysna
- To produce and distribute appropriate tourism literature
- To establish and maintain a database of information required for the formulation and implementation of tourism policies and strategies.

The Tourism Bureau is made up of:

1 an ***executive committee*** and ***chairperson*** who are elected from the membership at the annual general meeting. The committee is assisted by ***task groups*** (which are effectively sub-committees) that attend to specific areas of responsibility. These include:
   - Financial
   - Administration (known as the coal-face task group)
   - Marketing
   - Development (i.e. community development)

2 a ***director of tourism*** who manages the day-to-day workings of the

3 ***secretariat*** which in turn is made up of:
   - The information (or front) office, which deals directly with inquiries for information
   - The marketing section,
   - A financial control and administration office.
   - The ***accommodation and adventure tourism booking service***, which is attached to the Bureau, has recently been privatised.

The Marketing of Knysna

You have already come across the Knysna Tourism Bureau's slogan:

Knysna. The Place of People, Beauty and Mystery

This slogan was adopted by the Bureau because it was felt that it best described Knysna as:

The Place of People: many cultures thrive in this small community, and Knysna can boast that it has perhaps the largest artist's community in the country.

The Place of Beauty: no other town on the South African coast is as well placed to take advantage of its natural beauty as Knysna. Importantly, this natural beauty is easily accessible to visitors through a good network of roads, hiking paths and accommodation establishments.

The Place of Mystery: Knysna has a certain something that is impossible to define. It is this sense of *mystery* about the town that is the biggest strength in Knysna's marketing campaign. It is also the link between Knysna's *people* and its *beauty*.

These ideas are put across to the visitor and potential visitor by the bureau, through a series of marketing initiatives, including:

- An advertising campaign
- The production and distribution of pamphlets and fliers
- Distribution of information to wholesale and retail tour operators, travel agents and other big businesses who might have an interest in bringing people to Knysna
- Creating awareness of special events (such as the Knysna Oyster Festival, Youth Day promotions, etc.)
- Targeting the media in order to get as much free publicity for the town in newspapers and magazines and on television and radio.

The Statistics

Wesgro (The Western Cape Investment and Trade Promotion Agency) have provided the following statistics about Knysna:

The 1991 census showed a population of 50 416 people living in 13 132 households (9 987 in urban areas and 3 145 in non-urban areas). The 1996 estimate was 56 000 people (based on a 2.1% growth per annum), and the 1997 estimate was that there were 57 120 people living in Knysna.

The 1996 figure was made up as follows:

Coloured	26 000
White	16 200
Black	13 800

The age-groups profile was:

0 - 5 years	7 330	13.1%
6 - 15 years	11 212	20.1%
16 - 25 years	10 420	18.6%
26 - 64 years	22 918	40.9%
65 + years	4 120	7.4%

The estimated employable population was 23 500 (excluding people who have retired early or those involved in education and training). Approximately 2 500 are completely

unemployed. The balance were employed as follows:

Farming & horticulture	2 000	9.5%
Fishing, aquaculture & boat transport	700	3.5%
Quarrying	200	0.9%
Forestry and furniture industries	3 000	14.3%
Construction	2 750	13.1%
Electricity & water supply	100	0.5%
Trade - Formal retail	1 000	4.8%
- Informal trading	1 100	5.2%
Processing & repair-related services (butcheries, bakeries, metal processing, home industries, clothing, security, etc)	1 250	6.0%
Arts & crafts	400	1.9%
Tourist accommodation	1 000	4.8%
Travel, transport & deliveries	700	3.3%
Motor services (petrol, repairs, etc)	900	4.3%
Financial services	1 150	5.4%
Professional services (doctors, architects, etc)	500	2.4%
Community services (churches, clubs, etc)	500	2.4%
Social services (health, education, etc)	600	2.9%
Local authority	2 600	12.4%
	21 000	100%

The Gross Regional Product estimates are:

1991	R286.6 million
1994	R383.5 million
1996	R545.3 million
1997	R616.2 million

at an inflation rate of 6% per annum, and with a growth rate of 5.2%, the estimate for the year 2002 is R1047.7 million

The 1996 figure was made up as follows:

Agriculture, fishing & forestry	R49.1 million	9%
Mining and quarrying	R5.5 million	1%
Manufacturing	R98.1 million	4.8%
Electricity and water	R10.9 million	2%
Construction	R65.4 million	12%
Trade	R70.9 million	13%
Accommodation and catering	R76.3 million	14%
Transport and communication	R27.3 million	5%
Financial and business services	R49.1 million	9%
Social and personal services	R38.2 million	7%
Local government and community services	R54.5 million	10%
	R545.3 million	100%

Part 1: Lecture 2
Tourism and Culture: an Overview of Knysna's History

Tourism and Culture: an Overview of Knysna's History

Many people travel because they want to experience cultures other than their own. Not only are foreign visitors interested to know about ***where*** we live: they also want to know about ***how*** we live. What we do for work, how we entertain ourselves, how we worship, the art that we produce and the many other things that go into creating our unique ***culture,*** are usually influenced deeply by our ***history***. This is as true here in Knysna as it is anywhere else.

SATOUR, the government agency that markets South Africa overseas, has chosen ***culture*** as a marketing theme for the country as a whole. The Knysna Tourism Bureau has adopted the same approach, and this is reflected in the towns' marketing slogan: ***Knysna. The Place of People, Beauty and Mystery.***

The word ***people*** is significant because it represents the many diverse ***cultures*** that exist in this small town. These cultures are to a certain extent influenced by our environment (the ***beauty*** around us). And it is the combination of the town's ***history*** with its ***special beauty*** that creates the ***mystery*** (that ***certain something*** about Knysna which makes the town so special).

Pre-Colonial History

Very little is known about the people who inhabited the Knysna Area before about 1760, when the first European explorers passed through here. That part of Outeniqualand (as the Garden Route was then known) that lay to the east of the area that is now George was almost inaccessible. The deep gorges and high mountains that are today so easy to cross, were then almost impassable for European travelers. The little knowledge that we have of those early days comes mainly from the records of those travelers who were able to penetrate the area. It would seem, however, that there were very few people - and certainly there were no permanent settlements - in Knysna before 1770.

According to the CSIR's Grindley Report[2], the only archeological site in Knysna that has been recognised by the South African Museum is the cave on the Western Head (at Featherbed Nature Reserve). There is also evidence of a strandloper burial site in the area. These sites would probably have been used by wandering bands or families of Khoi (Hottentot) or San (Bushman) people.

The Name *Knysna*

James Callander who drew the first map of the Knysna Lagoon, is thought to have been the first European who made his home at the Knysna Heads. In an early letter to the Governor at the Cape Lord Charles Somerset), he mentions the ***Nysna River***[3] (the modern spelling ***Knysna*** seems to have been adopted some time in the late 1700's or early 1800's).

The origin of the name is not known. It might have come from the Khoi ***xthys xna***

[2] JR Grindley **Report No. 30: Knysna (CMS13)** (Estuaries of the Cape: Synopsis of Available Information on Individual Systems). *ECRU, National Research Institute For Oceanology: Council for Scientific and Industrial Research.* Stellenbosch 1985

[3] Early references to this area all mention ***The Knysna***. This is a shortening of ***The Knysna River***. Because it was named after the river, the town became known as ***Knysna*** (no *the*) after 1883, when the Municipal Council held its first meeting.

(meaning the `place of timber'). It is worth noting that similar place names (which are generally associated with water) exist in other parts of Africa. A good example would be the old name for Lake Malawi: it used to be known as ***Lake Nyasa***. Interestingly, ***Webster's Universal Dictionary*** defines the word ***nyanza*** as a noun *`(African): An expanse of water, as a lake or wide river'*[4].

Early Colonial Settlement

In 1770, the Colonial Government proclaimed the farm ***Melkhoutkraal*** (on the eastern shore of the lagoon - between the Eastern Head and what is today the Industrial Area). Its first occupant was one Stephanus Terblans, who was granted a loan permit for a period of one year[5]. Similar farms existed at Belvidere and Brenton (which was then called Uitzicht). At that time, the north shore of the lagoon (where the town is today) was uninhabited.

The population of the district grew very slowly in the late 1700's. In 1802, however, the area was invaded by Khoikhoi warriors during the third frontier war (1799 - 1802). Some of the settlers were evacuated to Mossel Bay, and most of the farms between Plettenberg Bay and the Keurbooms River, as well as some at The Knysna (including Melkhoutkraal), were burned to the ground.

In 1804, George Rex bought Melkhoutkral and came to live here. He saw great commercial potential in the enormous forests of the area, and he immediately began lobbying the Colonial Government to establish a harbour at the Knysna for the export of timber. In 1817, the river was declared a port (although harbour facilities would only be built much later), and the first ship to try to ***cross the bar***[6] was the ***Emu***. She floundered on a submerged rock (now ***Emu Rock***), and was wrecked at the mouth. Two months later, ***HMS Podargus*** arrived to conduct salvage operations on the *Emu*, and became the first ship to safely enter the Knysna harbour.

In the following year (1819), John Gough was appointed as the first permanent pilot at The Heads (he was responsible for the safety of craft crossing the bar, and would row out to ships at sea to guide them in to the lagoon).

George Rex has grown into something of a legend in Knysna because of the confusion surrounding his circumstances. It is thought that he might have been the eldest son of King George III and the commoner Hanna Lightfoot. If this King and commoner *were* married, the marriage was done away with in favour of the King's second alliance (to a Princess Charlotte von Mecklenburg-Strelitz)

It is also possible that George Rex was sent out to the Cape to `hide' him away from the Royal court in England[7].

Whether the stories about his background are true or not, George Rex definitely did live and farm at Melkhoutkraal until his death 1839.

By the time he died, Rex

- owned almost all of the land surrounding the lagoon,

[4] **Webster's Universal Unabridged Dictionary and Atlas of the World**: *The World Publishing Company*, Cleveland Ohio 1940

[5] Terblans eventually lived at Melkhoutkraal for twenty years. His widow ran the farm after his death, and sold it in 1798.

[6] There is a submerged sand bar across the mouth of the Knysna River at The Heads: a ship that is entering or leaving the lagoon is, therefore, said to be "***crossing the bar***".

[7] George Rex never confirmed nor denied the story of his `royal' birth. There are those who believe that he must have been of Royal birth partly because of his association with Dr James Barry. Barry was a woman who masqueraded as a man in order to be able to study and practice as a doctor (a profession denied to women in England in the 1700's). She was the niece of George III, and daughter of the Duke of York, and, if the legend about George Rex is true, would have been his cousin. She spent much of her time at the Cape in the company of George Rex.

- had been credited with being "*the proprietor and founder of Knysna*"[8],
- had donated land for the construction of a church,
- had initiated a project to lay out the first village at the Knysna (it was called Melville, and stood in the area west of the present Long Street), and
- had been a driving force behind the establishment of the timber industry which is still important to the town of Knysna.

The Port of Knysna

The Knysna River had a checkered career as a port, partly because of the dangers of The Heads, and partly because of changes in the economic climate of the Cape Colony.

We have already seen that the Knysna was first declared a port in 1817; that the first ship that attempted to enter the mouth (the *Emu*) was wrecked; and that a permanent pilot was appointed in 1818.

In 1820, the British Navy established a dockyard on the banks of the lagoon. It seemed like a good idea because of the huge timber resources that were available locally. Its buildings were burned down twice, however, and it was closed down after only five years.

In 1827 the port was de-proclaimed for economic reasons, and the pilot was sent away. John Rex, son of George, then acted as a voluntary pilot for the next thirty years. Only in 1858, three days before he died, was he finally, officially, appointed to the post.

Many large ships were wrecked trying to enter or leave The Heads (often against pilot's orders, but, unfortunately sometimes because of pilot error), and the harbour mouth gained the reputation of being one of the most treacherous in the country. Still, until the completion of the railway line in 1928, shipping was the only economically viable connection with the outside world.

In the first half of the nineteenth century, loading and unloading of ships had been extremely difficult at the Knysna. Cargo was loaded onto rafts or smaller boats and rowed to shore, or, if larger items had to be unloaded, the ship was hauled onto a sand bank at high tide, and, when the ship settled onto the mud at low tide, the cargo was put off directly onto the mud.

In 1867 `Skipper Horn', a local businessman, completed the construction of a jetty (he built it at his own expense because he was unable to get assistance from the Colonial Government). This stone jetty (upon which the Knysna Yacht Club was later built) served the needs of the shipping community until 1883, when the Government Jetty on Thesen's Island was completed.

The first ship that loaded cargo from the Government's wharf was the Thesen's brig ***Ambulant*** - she took on 3000 yellowwood railway sleepers bound for Cape Town.

In 1869, the Thesen family made their first visit to Knysna. They were *en route* for New Zealand, when their ship, the ***Albatross***, was damaged off Cape Agulhas. They returned to Cape Town for repairs, and were offered a charter to bring goods to Knysna. In 1870, after a number of trips to Knysna, they decided to abandon their plans for New Zealand, and to settle here. They eventually built up a business that included timber (forestry and saw milling) as well as a ship yard and a shipping line (their fleet flew the same red triangular flag with a white star that can be seen flying outside the sawmill offices on Thesen's Island today). The shipyard was known as The ***Knysna Boatyard***, and occupied the building that is today used as Thesen's wood store.

The Knysna Boatyard saw service during the Second World War: 640 craft were built there for the Allied Forces. The largest were ten ships of the ***Fairmile*** class - wooden

[8] The inscription on Rex's grave, which stands in Lower Old Place, near the N2, reads: "***In Memory of George Rex, Esq., Proprietor and Founder of Knysna. Died 30 April 1839***"

submarine hunting boats - and the smallest were the long boats that were used as life rafts. After the War, the yard built fishing vessels and pleasure craft, including yachts and houseboats. It was eventually sold off to independent investors, but it was bankrupted and closed during the 1980's.

The most famous of the Pilots at The Heads were the Benns: John, John II, Conning and Reuben. John Benn was a shipwright in Mossel Bay who was employed by Skipper Horn to come to Knysna to direct the salvage on the wreck of the ***Musquash***, which had gone down at Coney Glenn in 1855. By the time he arrived in Knysna, the ship had broken up, but Benn decided to stay on anyway, to build a new ship - the ***Rover*** - for Horn. He went on to become, in 1868, the first of a dynasty of Pilots that would `rule' the mouth until the closure of the harbour in 1954.

No lives were lost as a result of pilot error in all the time that the Benns worked the River mouth. It is fitting, then, that Knysna's pleasure cruiser - which is so popular with visitors and locals alike - should be named in honour of the first of these brave men: the ***mv John Benn***.

In 1954 the harbour was officially closed. The railway line and improved roads and fast vehicles had made communication by land cheaper, more efficient and much safer than by sea. Today the lagoon is used mainly by pleasure craft, and a fleet of about 11 small commercial fishing boats.

A Mysterious *Ghost Ship!*

In April, 1881, John Benn and his crew discovered and abandoned three- masted schooner at the mouth of the Noetzie River. No valuables or signs of life were found on board, and the masts and rigging were bleached white from the sun. It was obvious that she had been adrift and without crew for some time. The ship's log was missing, but her cargo log was intact (the last entry showed that the ship had carried guano in 1876). A scrap of paper dated 1880 was found, but no clues were left behind to explain what had happened to the crew.

The ship was identified as the ***Phoenix*** previously known as the ***Ville Pierre*** out of Point Pierre on the island of Réunion. It is an old sailors' superstition that renaming a ship brings bad luck. Could this have been the cause of the mysterious disappearance of the crew? We may never know!

The *Phoenix* was attached by the customs officer, and sold at auction for £15.

Millwood's Gold

In 1876 a farmer named Hooper discovered a gold nugget in the river at Karawater. He took it to the village chemist, who analysed it, confirmed the find, and passed it on to the government roads engineer, CF Osborne. Osborne in turn sent it off to the Colonial Government, who granted 100 for further exploration.

It was not until 1885 that Osborne returned to Karawater to continue prospecting for gold. He found a gold-bearing reef on a tributary of the Karatara River, and recommended that the area be opened for pegging. Although the Rand was proclaimed a goldfield in the same year, diggers came to Knysna anyway, in the hope that Millwood (as the new town became known) would become a successful mining area.

In 1886 Millwood's first newspaper, the ***Millwood Sluice Box*** was published for the first time (and was soon followed by both the ***Millwood Eaglet*** and the ***Millwood Critic***). Formal buildings began to appear where only tents had existed before: these included four hotels, six shops, a committee room and an agent's office. The goldfields had, however, still not been recognised by the Government, and the diggers and businessmen were officially considered to be trespassers.

In January 1887 the government finally acceded to the diggers demands, and Millwood was proclaimed a goldfield, with Patrick Fletcher as the Inspector of Mines. That year's (official) production of gold was 655 ounces.

1888 was the high point in Millwood's history, with over 1000 permanent residents living there. At mid-year, however, the gold began to run out and the businesses to feel the economic pinch.

By May of 1889, the total recorded yield from Millwood was 2360 ounces, but very little gold was discovered after this. At the end of 1890, CF Osborne wrote that only one company - manned by only one manager and one digger - was working the goldfields. He noted that, to service their needs, there were three shops, five officials, three constables, an inspector and a registrar. Soon, even these people were gone. It was not until 1924 that the Government finally, officially, abandoned the Millwood Goldfields.

The Knysna Municipality

The first village laid out at the Knysna was Melville, and the second was Newhaven, which was laid out by John Sutherland[9] in 1845. It lay to the east of the present day Long Street, with Melville to the west. These twin villages existed side by side until 1881, when it was decided that they should merge. In November of that year, a meeting was held at which a chairman and 4 commissioners were elected to act as councilors pending proclamation of the new municipality by the government.

The Governor at the Cape recognised the new Municipality of Knysna under Proclamation N^{o} 217 of 1882. Thomas Horn was elected chairman of the first official Council, which held its first meeting on 14 March 1883.

Municipal matters moved slowly in the early days: the decision to install a water system for the town was taken in 1898, but it was not until 1926 that the water actually flowed! And it was not until 1924 that street lighting was installed (27 electric, and 27 paraffin lanterns).

In May 1927 a public meeting was held to discuss the idea of starting a `Publicity Bureau', and in October 1929 the ***Knysna Publicity Association*** was formed. It was housed in an old school building (now demolished) in the church grounds. 736 visitors came to its office in its first year of operation (compare this with the 54 471 visitors to the Bureau in the year ended July 1997).

In 1996, the Publicity Association changed its name to the ***Knysna Tourism Bureau*** to fall in line with the requirements for accreditation under the new ***Western Cape Tourism Act*** (Act 3 of 1997).

Throughout most of the twentieth century, the make - up of the council largely reflected the political climate of the country.

Apartheid and Forced Removals in Knysna

In 1948 the National Party was swept into power in Union-wide elections. Their racially-based policies had profound effects on all the peoples of Southern Africa, both within, and beyond our borders. Knysna was not excluded from their experiments in social engineering.

In 1956, the ***Group Areas Act*** was created. It divided the country into areas where the different race groups would be forced to live apart from one another. This act was frequently used to remove entire communities from their established homes to new - often remote - areas which were considered `appropriate' for those communities. These forced removals continued well into the 1980's.

[9] Sutherland was the son of Lieutenant Colonel John Sutherland, who had bought many of George Rex's Properties form his deceased estate.

In Knysna, it was decided that coloured people should be moved to the area that is now known as Hornlee, on the east side of town. The decision was not popular with the community. Besides being faced with the horror of forced removal from their homes in places such as Salt River and Old Place, the people were reluctant to accept Hornlee as their new home. Amongst other things, the high water table in Hornlee was expected to create engineering problems that would increase building costs.

The people of Salt River were mostly poor and often badly educated (or uneducated). None of them owned their homes, and eviction orders were easily obtained. Resistance here was sporadic, isolated and mostly passive.

A group called the ***Waaksames*** (the ***Vigilant Society***) was formed to fight the decision to move to Hornlee. They petitioned the Government to make land at Eastford available to the community, but their efforts were unsuccessful.

By 1970, the first houses had been built in Hornlee, and by 1973, most of the coloured people in the Knysna area had been moved there.

In the Grand Apartheid Plan, few black people were recognised in the Western Cape, and consequently no official black residential areas were proclaimed in Knysna. It was only in 1987 that Kayalethu was established (with only 150 houses).

Nor did Knysna escape the effects of the struggle for democracy. In one of the more visible events of the 1976 student uprising, the Percy Mdala School buildings, which were housed in the Full Gospel Church complex, were burned down, although the church itself was spared (the school was at that time known as Thembelitsha Primary).

On April 27, 1994 South Africa began her first ever democratic elections in what the world's press hailed as a miraculous moment in our history. Nelson Mandela was installed as the country's first democratically elected president, and a Government of National Unity was formed.

Knysna's first democratic council elections were held on November 1, 1995, and a 68 percentage poll was recorded. The first democratically elected mayor was Councilor Thembe Mfene. The other elected councilors were Alan Kock, Henry Avontuur, N Siyona, Ralph Stander, Enrico Campher, F Dixon, Paul Thesen, M Peyi, B Pienaar, N du Plessis, T Holmes and W Best. They took office on the day of the election, and operated in terms of the Municipal Ordinance (20 of 1974), as well as the Transitional Local Government Act.

The effects - and damage - of the policies of Apartheid are still visible in Knysna and, although members of the community have embraced the new democracy with gusto, it is expected that reconstruction will take many years.

Percy Mdala: One of Knysna's Outstanding Citizens

In all of Knysna's history, few people can have served their community with the devotion that Percy Mdala did.

Percy Mdala came here in 1956 to work for Bishop Stainton, who was then Rector of St George's. He taught at St. Paul's Caradoc, which was housed in the church hall at Salt River. When Mdala arrived there, the school had about 25 pupils, and was supported financially by the Anglican Church. It received no funding from the Government's Education Department. Mdala and his colleague, a Mr Ganga, started a programme of house visits in the area to encourage children to attend the school. They were so successful that two more assistant teachers were appointed to serve the growing numbers of pupils.

On rainy days, the Salt River flowed so strongly that children could not cross it to come to school. Percy Mdala would go down to the river and carry the pupils across, one or two at a time. At the end of the school day, he would carry them back again so that they could make their way safely home.

The school received much support from Mr & Mrs. JDM Philip, and became known

as "***Philips Lower Primary School***". It was finally recognised for a subsidy from the Government. The sad irony was, however, that forced removals soon affected the population of Salt River to the extent that the school had to be closed down because all of its pupils had been taken away from the area.

A new school was started in Thembelitsha in 1971. Mdala was its first principal, but he resigned within the first year of its opening (he had, for many years, been the only properly trained black educationalist in Knysna).

After his retirement, Mdala remained active in the fight for black education.

His memory been honoured by naming the new high school, which opened in 1992, ***Percy Mdala High School***.

Part 1: Lecture 3

Tourism and Knysna's Natural Environment

Knysna's Natural Environment

Have you ever thought about why so many people are continually harping on about ***preserving the environment***, when so many other people are ***starving and can't find work***?
And have you thought: Why don't they ***do something for other people***, rather than ***for the environment***?

And: What is the environment anyway? I don't live in it - why should it ***affect me***?

And: Why is this whole thing so important that even the ***Constitution of the Country*** guarantees me the ***right to a clean environment***? What's all this got to do with Knysna, Tourism and ***Me***?

The answer to all these questions is so simple that it sometimes seems to escape even the most highly educated people who spend their lives studying the environment:
human existence depends on a healthy environment. ***So, by defending the environment against degradation, we are defending the human race.***

Importantly for us here in Knysna is that lesson we learned about in Lecture 1: ***the environmental beauty of this area is its biggest tourist attraction***.

Tourism is one of Knysna's ***most important industries*** - which means it is one of Knysna's ***most important employers***;

- And we know that ***if we want more employment***, industry must g***row***:
- That means ***tourism - which depends on a the environment -must grow;***
- Tourists come here ***to see the environment***.

Therefore, we must look after the environment because ***it is Knysna's biggest asset.***

It's simple. Think of it this way: a ***mechanic*** looks after his ***tools*** so that he can ***service his client's*** cars properly, and in that way make sure that he ***makes money*** and that his clients ***keep coming back*** to his garage regularly - so that he can ***keep on making money***. In other words: the people of Knysna (the mechanic) must look after the environment (the tools) so that we can service the tourists' (our clients') needs properly (please remember that you need more than just tools to keep your clients happy - you also need to offer good and friendly service!)

This lecture will introduce you to the natural environment in this part of the world, so that you have an understanding of this tool that draws visitors to Knysna.

The Natural Environment is a Jigsaw Puzzle!
You will recall that we said in Lecture 1 that The Garden Route 's name came from the natural beauty of the area, and its unique combination of mountains, rivers, beaches and ocean combined with a patchwork of fynbos, forests, lakes and small towns.

The amazing thing is that if you took any one of these elements away, you would spoil all the other elements - because each is dependant on the all the others in some way! Think of it as a bicycle wheel with, say, only five spokes. If you ***take one spoke away***, the ***wheel will wobble*** when you ***try to ride*** the bicycle. Take away ***two***, and you'll have a ***bigger problem***. Take away ***three***, and you ***might not even be able*** to ***ride the bike***! But if you take away ***four*** - the whole thing will ***collapse!***

Each of the elements that go to make up the environment is a spoke in the greater

wheel that makes up the Garden Route - and, ultimately, the entire world. Each is just as important as the other. Let's take a closer look at them:

The Air

The air that we breath in Knysna is relatively pollution-free. In larger cities in the world (such as Tokyo in Japan, New York in the United States, London in England, and even in our own city of Johannesburg), air pollution has become so bad that people (even those who don't smoke!) may get sick with lung diseases like asthma - just from breathing! (Adult-onset asthma has become one of the largest causes of hospital admissions in southern England today).

The reason that our air is relatively clean is partly because we have very little heavy industry in this area, partly because we do not have heavy traffic congestion, and partly because of the general cleanliness of the environment as a whole in the Garden Route.

You might find this strange, but many tourists that you meet will comment on ***how much they enjoy*** just ***breathing*** here - because ***the air*** is so ***fresh***!

The Mountains

The Garden Route's northern border is formed by the mountains that divide this area from the Langkloof and the Little Karoo. These are the:

- ***Langeberg Mountains*** north of Albertinia
- ***Outeniqua Mountains*** north of George and Knysna, and the
- ***Tsitsikamma Mountains*** north of Nature's Valley.

These high mountain ranges were the barriers that prevented early exploration, and kept this area remote from the rest of the country for long periods before roads and rail made communication cheap and efficient.

Today most of them are under the protection of those state departments concerned with water affairs, forestry and the environment.

The mountains are largely inaccessible to visitors except along designated roads and passes, and via the formally laid-out hiking trails. This protects the rich diversity of plant and wildlife that they shelter, as well as protecting the all-important ***catchment areas*** for the rivers that feed the lakes and dams of the Garden Route with clear, fresh water[10].

The ***mountain passes*** are also popular with visitors because of the spectacular scenery and wide range of plants (and especially flowers) that can be seen.

Some passes important to the visitor are the:

- ***Outeniqua Pass*** - now the main road between George and Oudtshoorn
- ***Montagu Pass*** - used mainly as a scenic drive between George and Oudtshoorn
- ***Robinson's Pass*** - between Mossel Bay and Oudtshoorn
- ***Prince Alfred's Pass*** - which links Knysna with Uniondale
- ***Homtini*** and ***Phantom Passes*** which form part of the ***Seven Passes Road*** - the old, historic road between George and Knysna that is a favourite ***scenic drive*** for visitors today.

The Forests

The forests of the Southern Cape are made up of ***indigenous forest*** and ***exotic plantations***. The exotic plantations are the forest `farms' where pine and eucalyptus trees are planted specifically for ***harvesting for the timber industry*** (an `*exotic*' tree is one that came originally form another country: the pine trees that are planted in this area were imported

[10]A ***catchment area*** is all the land upstream of a river which catches the rainfall that runs into it.

from the northern hemisphere, and the eucalyptus came from Australia)

There are about ***65 000 hectares of indigenous forests*** (43 000 of which belong to the state) in the Garden Route. This is ***South Africa's largest natural forest complex***.

The ***extraordinary beauty and tranquillity*** of the forests are perhaps ***their main attraction*** for the visitor. There is also a certain ***mystery*** attached to the forests as a result of their history, and this is no doubt also an ***important part of their allure***.

There are many ways that the visitor can ***see and enjoy*** the Knysna Forests:

- ***Hiking trails and forest walks*** range from short walks of less than 30 minutes (such as at The Garden Of Eden) to hikes that take 7 days to complete (such as the Outeniqua Hiking Trail - where the hikers have to carry all their own food and clothing with them, and sleep in huts provided by the Forestry Department). There is also an 800m long trail that has been specially laid out for wheel-chairs at The Garden Of Eden.
- ***Mountain bike trails*** are becoming very important tourist attractions. Recreational cycling has grown enormously in the past few years, and riding in the forests is a growing attraction. More and more visitors are bringing their bicycles with them on holiday, and there are now cycle hire shops in Knysna that cater for those who do not have their machines with them (some of the shops will take the riders into the forests and lead them along the trails).
- ***Forest drives*** are an easy option, and many of the bigger forests are open to vehicular access along the passes and forestry roads. The old `7 Passes Road' runs from Knysna to George along a historic route through the forests and mountains. It is an important attraction, and many visitors like to follow it to view the forests, the passes themselves and the spectacular scenery.
- ***Camping and other accommodation*** is provided at camping sites (such as the one at Diepwalle), at the youth centre in Harkerville (where dormitories provide budget accommodation for travelling youth groups), as well as at more expensive venues such as the self-catering chalet at Harkerville and at numerous privately-owned establishments situated close to or in the forests.
- ***Picnic and braai facilities*** are provided in most of the State Forests, and these are generally easily accessible from the roads. ***Remember the Golden Rule: only make fires in designated braai areas!***
- ***Historical exploration***. The story of the Millwood Gold Rush is exciting for those who are interested in history. The Millwood Goldfield Society has undertaken the restoration of parts of the Bendigo Gold Mine. Much of the old mining equipment was left in the forests when the Goldfields ran out, and the Society plans to restore the coco pans, crushers, stamp mills, washing pans and recovery tables so that the visitor can see a historically accurate reconstruction of the old workings.

As we have already discovered, many of the passes that go through the Forests (Homtini Pass, Prince Alfred's Pass, etc) are also of historical importance.

The Fynbos

Botanists have divided the world into 6 main areas - the floral kingdoms:

- ***The Boreal Kingdom*** covers about 42% of the land on earth. It includes most of the Northern Hemisphere;
- ***The Palaeotropical Kingdom*** covers 35% of the land, and includes most of Africa, India, South China, Indonesia and the South Sea Islands;
- ***The Neotropical Kingdom*** covers 14% of the land, and includes Central America and most of South America;

- ***The Australian Kingdom*** covers about 8% of the land, and includes Australia and Tasmania;
- ***The Antarctic Kingdom*** covers about 1% of the land, and includes Chile, Patagonia, New Zealand and the Antarctic itself: and
- ***The Cape Floral Kingdom***, which covers only about 0,04% of the earth's land surface, and includes only a narrow coastal strip on the southern tip of Africa - in the Western and Eastern Cape Provinces.

The Cape Floral Kingdom is sometimes referred to as the Fynbos Biome[11]. It stretches along the Cape Coast from Vanrhynsdorp on the West Coast to Port Elizabeth and Grahamstown, and is nowhere more than 200 kilometres from the sea.

Fynbos is a word we use to describe over 8 500 plants that grow in this winter rainfall area. In other parts of the world, similar plant communities (which also grow in winter rainfall areas) are referred to as macchia (in Mediterranean countries), chaparral (in California), matorral (in Chile) or heath (in Australia). The fynbos is unique, however, because it has a much larger number of different species than any of these other, similar communities. In fact, the tiny Cape Floral Kingdom is said to have more species than the entire Boreal Kingdom. That means more different types of plants grow here in this small part of the Cape (0.04% of the world's surface area), than in the entire Northern Hemisphere (42% of the worlds' surface area)! This makes the fynbos a vital tourist attraction, and plant and nature lovers often travel from all over the world to see it.

The fynbos as a group is especially adapted to fire, and relies on the periodic fires that occur for their re-generation (the seeds of many of these plants are very small and light, so that they can rise on the up-draft in front of the fire, remain in the air as it passes, and settle on the burnt land behind it to begin the germination process).

Some of the more important plants that define the fynbos are:

- ***The Protea-like group***: the Proteas (suikerbos, *Protea* spp.), pincushions (luisiesbos, *Leucospermum* spp.) and conebushes (vaalstompie or kreupelboom, *Mimetes* spp);
- ***The Ericas***: the heathers (heide, *Erica* spp.)
- ***The bush teas***: rooibos (*Aspalathus* spp.) and honey tea (*Cyclopia* spp.)
- ***The reeds*** (i.e. those that are specifically associated with the fynbos): restios (besemriete, family *Restionaceae*)
- ***The buchus*** (*Agathosma* spp.)
- ***The gonnas*** (*Passerina* spp.)
- ***The everlastings*** (*Helichrysum* spp. and *Helipterum* spp.) And blombos (*Metalasia*) and
- ***Certain bulbous, rhizomatous and corm plants and ground orchids*** such as kanolpypies (*Watsonia* spp.), red-hot-pokers (vuurpyl, *Kniphofia* spp.) and disas (disablom, *Disa* spp.)

The Fynbos is further divided into Mountain Fynbos, Coastal Fynbos, Renosterveld and Strandveld. Each has its own, characteristic vegetation type. For a full description of each, refer to *An Introduction to Fynbos* by TFJ van Rensburg.

For the visitor, some of the best and most easily recognised fynbos in this area is to be seen along the mountain passes. The Montagu, Robinson's and Outeniqua Passes all traverse good stands of fynbos.

Recreation in the fynbos is somewhat limited. Much of the pristine fynbos is under state department control because it is so rare and badly threatened. Fire - which is its greatest ally - is also the fynbos' greatest enemy (if the fynbos is burned too often, its seeds

[11] ***Biome*** is a word we use to describe a large area of the natural environment that is characterised by vegetation types that have broadly similar characteristics.

do not have a chance to form properly, which reduces its chances of regeneration). However, there are opportunities for

- ***Walking and hiking***: the Goukamma and Groenvlei Trail (in Sedgefield) and the Kranshoek Walk pass through good stands of fynbos
- ***Scenic drives***: as mentioned, the Passes are good places for viewing fynbos.

The Water

The Garden Route is unique in South Africa partly because of its abundance of water. There is no other place in the land where you can see as many fresh water and salt water lakes, mountain streams, and rivers. And it's all so close to the sea, with its beautiful and unspoilt beaches! (because of its unusual situation, the Knysna-Sedgefield-Wilderness area has been nicknamed South Africa's `***Lake District***').

The attraction of all this water - and the fact that so much of it is easily accessible to the public - is an important tool in the marketing campaign for all the towns in the district. Fresh, clear water to swim and play in, and to relax by, is becoming more and more scarce in all the big cities of the world (another reason why its availability in this area has to be carefully preserved for future generations).

The water types in the Garden Route (and the opportunities that they offer visitors) are: the ocean, the salt water lakes, fresh water lakes and rivers.

- ***The Indian Ocean and its beaches***: although the Cape Coast is notorious for its strong currents and heavy seas[12], there are many safe swimming beaches and recreational diving spots near Knysna. Our long beaches are often quite remote from the main stream (e.g. at Goukamma and Buffalo Bay-Brenton-on-Sea), and visitors love to walk along them and explore the coast in relative solitude. They are therefore a hugely important asset.

  Other ocean-based recreation facilities offered in Knysna are surfing (mainly at Buffalo Bay), rock and surf fishing, deep-sea fishing, sailing and sight-seeing by boat.

  Whale-watching has become an enormous tourist industry of its own, and visitors will often make a special effort to try and spot whales whilst they are here. It has often been said that the Southern Cape Coast has some of the best land-based whale watching in the world. The importance of this cannot be over-emphasised. Much of the world's whale-watching is done from boats (which is expensive, and sometimes uncomfortable and dangerous), but here in the Garden Route, you can often see whales by just sitting and watching the sea from a comfortable view point. And it doesn't cost you a cent!

- ***The Lagoons and Estuaries*** are the salt water lakes of the area. They are:
  - ***In Wilderness***, the Touw River Lagoon, Island Lake, Langvlei and Rondevlei - which are all joined together via The Serpentine. Here there are facilities for swimming, canoeing, sailing, power-boating (including water-skiing), fishing and bird-watching;
  - ***In Sedgefield***, the Swartvlei Lagoon has similar facilities;
  - ***In Buffalo Bay***, the Goukamma River lagoon has facilities for canoeing;
  - ***In Knysna***, the Knysna Lagoon (also known as the Knysna River or

[12] ***Heavy Seas*** refers to the size of the swell that picks up as a result of such factors as off-shore storms and the ocean currents.

Knysna Estuary[13]) has the widest range of facilities for the tourist of any body of water in the Garden Route. Beside swimming, canoeing, sailing, power-boating, water-skiing, fishing and bird-watching, visitors can go diving or snorkeling, take a pleasure boat for a short cruise (John Benn, Rivercats, Knysna Ferries), or rent a house boat and live on the lagoon during their holidays (Lightleys).

- The Knysna Lagoon requires slightly closer examination because it is one of the most important attractions in our town. An extensive description of the lagoon is given in Part 6 of *Now, If You'll Look To Your Left....* Further information can also be obtained from the National Parks Board office on Thesen's Jetty;
- ***In Plettenberg Bay***, the Keurbooms River, which has facilities for swimming, canoeing, sailing, power-boating (including water-skiing), fishing and bird-watching, as well as pleasure cruises.

- ***The fresh water lakes***. In the Garden Route, the only large, natural fresh water lake is the Groenvlei, near Sedgefield. It forms part of the Goukamma Nature Reserve, and its use is restricted to fishing, canoeing, and bird-watching. It is a very unusual body of water, as it is not fed from any river.

  The Garden Route Dam, in George, also offers fishing, canoeing and bird-watching. Both bodies of water are closed to petrol-powered boats.

- ***The Mountain Streams*** in this area are too numerous to mention. They are an important attraction because of their beauty, the tranquility that is associated with them and, as we noted before, their cleanliness. Many of the hiking trails, scenic drives and short walks cross or follow these rivers, and they are therefore easily accessible to visitors[14].

Remember that the main draw card for visitors to Knysna is the beauty of our natural environment. It is most important, therefore, that a good tourist guide knows as much as possible about our local natural history - and about how the visitor can experience nature.

[13] Some confusion exists about the name. The body of water here in Knysna should correctly be called an ***estuary***. An *estuary* is, by definition, a river mouth that is permanently open to the sea. A *lagoon* is a river mouth that closes itself off from the sea from time to time by means of a sand bar that forms and disappears within its own natural cycle. The name ***Knysna Lagoon*** has, however, become common usage.

[14] It's interesting to note that the ***black colour of the water*** in many of our rivers is said to be caused by a stain called ***humic acid***. This is a natural substance. It is a by-product of the slow filtration of water through the humus (rotting vegetation) in the forests and catchment areas.

Part 2
Chronological History of Knysna

Chronological History of Knysna

Knysna's recorded history goes back only as far as about 1760, when the first European explorer's came to the area. It is believed that at that time the only inhabitants were wandering bands of Khoi (Hottentot) and San (Bushman) people. Strandloper and stone age mittens have survived which give a fair indication of how these wandering peoples existed.

The origin of the town's name is uncertain. It might have come from the Khoi ***xthys xna*** (meaning the 'place of timber'), but there is no consensus in this regard. James Callander, who drew the first map of the Knysna Lagoon, is thought to have been the first European to make his home at the Knysna Heads. In an early letter to the Governor at the Cape (Lord Charles Somerset), he mentions the ***Nysna River***[15]. The modern spelling ***Knysna*** seems to have been adopted some time in the late 1700's or early 1800's). It is worth noting that similar place names (which are generally associated with water) exist in other parts of Africa. A good example would be the old name for Lake Malawi (*Lake Nyasa*). ***Webster's Universal Dictionary*** defines the word ***nyanza*** as a noun *`(African): An expanse of water, as a lake or wide river'*[16].

1770 The farm ***Melkhoutkraal*** was proclaimed by the colonial government. It was granted on loan permit to Stephanus Terblans, who thus became one of the earliest permanent European residents in the Knysna area.

1798 The Knysna Lagoon was charted for the first time (by James Callander, who also lent his name to an indigenous yellowwood - the kalander or ***Podocarpus falcatus***)

1804 George Rex (correctly or incorrectly believed to be the illegitimate son of the English King George III; the true story remains a mystery) bought Melkhoutkraal and settled here. The farm was in ruins. It had been burned down in 1802 during the frontier wars, and was again plundered by marauders during 1804. The enormous commercial potential that he saw in the local forests, however, was sufficient incentive for Rex to stay, and he soon began lobbying the Government to declare the Knysna river estuary a regular port.

1817 Sir Jahleel Brenton, the Naval Commissioner at Simonstown, strongly urged the government to establish families at the Knysna to 'make experiments in the cultivation of hemp....' and for the exploitation of the forests where there was 'a sufficient quantity of fine timber to build a whole navy'. Consequently, the Knysna River was declared a port. The first ship to attempt the entrance was the ***Emu***, but she floundered in the mouth on the large rock that is now known as Emu Rock. Two months later, the ***HMS Podargus*** entered safely to try and salvage what was left of the ***Emu***.

In September of this year, Capt. Robert Wauchope, who commanded ***HMS Eurydice,*** completed a survey of the Knysna River. He submitted it to Sir Jahleel together with suggestions for the positions of beacons, buoys and a pilot's house.

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[15] Early references to this area all mention ***The Knysna***. This is a shortening of ***The Knysna River***. The town itself only became known as ***Knysna*** (no ***the***) after 1883, when the Municipal Council held its first meeting.
[16] **Webster's Universal Unabridged Dictionary and Atlas of the World**: *The World Publishing Company*, Cleveland Ohio 1940

1818 John Gough was appointed the first permanent pilot at the Knysna. He was responsible (amongst other things) for the safe passage of shipping in the Heads.

1819 The ***Adolphus*** floundered because Gough was not at his post: his inexperienced assistant had hoisted the signal to enter, instead of the signal to stand off (i.e. remain at sea and wait for the conditions in The Heads to improve).

1820 A naval dockyard was established (it was built largely of wood, and would burn down twice. It was finally closed after only five years).

John Gough was fired from his post as Pilot at the Heads because he was so often absent from his post. Thomas Flinn took over for five months, and was replaced at the end of the year by Cornelius Nielson.

1821 Edward Wallace was appointed Pilot

In March, Sir Jahleel Brenton secured a government grant of 80 acres of land at the Knysna, which would be used for laying out a village on the banks of the river. George Rex was strongly opposed to the plan, and only agreed to it in after the government offered to remove the lien of 20 acres which it had on each of his farms.

1825 Plans were drawn up for the establishment of the village of Melville (title deeds would only, finally, be drawn up in 1862, when the Admiralty transferred the land to the Colonial Government). The village lay to the west of what is today Long Street. It was named in honour of Henry Dundas, the 1st Viscount Melville (1742 - 1811), who was at that time Treasurer of the Navy in Britain.

Edward Wallace retired as pilot, and was replaced by John McKenzie Johnson.

1826 George Rex began building his ship *Knysna*. She was a brig that was built entirely of stinkwood (The slipway on which she was built was also made of stinkwood. In time, this timber became hidden in undergrowth. When it was re-discovered, the slipway was dismantled and its timber was used to make chairs for the Divisional Council Chambers in Knysna). A model of the ship can be seen in the Knysna Municipal offices.

1827 The port establishment at the Knysna River was de-proclaimed, and the pilot Johnson left Knysna (for the next 30 years, John Rex acted as unofficial and voluntary pilot).

1830 On the 27th June the *Luna* was wrecked at the Heads (on the bar).

1839 George Rex died. His grave stone (which can still be seen today in lower Old Place, just south of the N2) is inscribed *`In memory of George Rex Esq., Proprietor and Founder of Knysna. Died 30 April 1839'*.

1841 The ship *Sovereign* was wrecked while trying to leave the Knysna.

1845 John Sutherland (son of Lieutenant Colonel John Sutherland, who had bought many of George Rex's properties from the deceased estate) began laying out the village of Newhaven on a portion of the original Rex farm - Melkhoutkraal. The village lay east of Long Street, and between Long Street and the Rectory (now the Main Street and Waterside Road junction).

1849 Dr William Andrews came to the Knysna to take up the post of first chaplain to this new parish (which had just recently been established by Robert Gray, first Anglican Bishop of Cape Town). Before this time, travelling preachers (most of whom were from the Dutch churches) had attended to the spiritual needs of local Christians.

1855 S^{t} George's Church was completed. It had been built on ground donated by George Rex, and was consecrated by Bishop Gray on the 3rd of October.

The ketch *Musquash* (a trading ship which belonged to Thomas `Skipper' Horn, owner of St George's Tavern - now the Royal Hotel) was wrecked at Coney Glenn. Horn employed John Benn, who was then a shipwright living at Mossel Bay, to direct the salvage operation. Although Benn arrived too late (the ship broke up in heavy seas before he got to Knysna), he decided to settle here and accept a contract to build a 60 ton schooner, the *Rover,* for Horn.

1856 The Widow Wentworth opened a `school'. Although it provided only rudimentary education, it was described as admitting `middle and upper class girls'. By the end of 1857, there were 8 pupils - three of whom were boarders.

1857 The first formal school was built and opened behind S^{t} George's Church.

1858 With an increase in shipping, and at the request of the local people, magistrate James Fichat wrote to the colonial secretary requesting the re-establishment of the post of pilot at the Heads. He recommended John Rex (son of George). This request was granted, but John died only three days after news of his appointment reached him. William Jackson was appointed in his place.

In August, the 189 ton *Zulu* became the first steam ship to enter the harbour. The brig *Helen* was wrecked at the Heads.

The Public Library was officially opened on the 4th of June (its hours were 9:00 am to 10:00 p.m. every day, including Sundays).

1859 The *Magnolia* was wrecked on the Western Head. The master of the ship blamed the pilot (Jackson) for the accident, but a board of inquiry found this to be untrue (in the end the board ruled that the skipper himself had been negligent). Jackson was exonerated, and remained in his post at Knysna until 1865, when he left become assistant harbour master at Table Bay.

The Gaol (today the Old Gaol Museum) was opened. It was the first public building in Knysna that was built by the Colonial Government.

1863 In April, the 30 ton schooner *Munster Lass* went down at the Heads.

1867 John Benn completed his second ship, the 50 ton schooner *Annie Benn*. Only the third ship to be built at the Knysna, her launch attracted a party of between 400 and 500 people (she was wrecked three years later at Mossel Bay).

George Bruce took over the pilot's post from James William Miller (who had been appointed on Jackson's departure in 1865, and who was later to settle at, and give his name to Miller's Point in False Bay). Bruce was paid a salary of 40 per annum, and although he remained in the position of pilot, the harbour master's office was abolished.

Prince Alfred, the Duke of Edinburgh (son of Queen Victoria) arrived by ship

(HM sloop *Petrel*) in September for an elephant hunt. He spent one night of his week-long visit at the St George's Tavern. Because of this, the tavern's name was changed to the *Royal Hotel*.

Loading and unloading of ships had (until now) been extremely difficult at the Knysna. Smaller cargo was loaded onto rafts or small boats and rowed to shore. When heavier cargo had to be manhandled, the ships were beached on the sand banks at high tide, and loading or off-loading was done at low tide. Unable to get assistance from the Colonial Government, Skipper Horn undertook to build a stone jetty at his own expense (with help from other local businessmen). This jetty was completed in 1867, and served Knysna until 1883 when the New Jetty (the Government Jetty) was built on Thesen's Island (the Knysna Yacht Club would eventually be built on Skipper Horn's jetty).

1868 John Benn was appointed Pilot.

1869 The Thesen family made their first visit to Knysna aboard their schooner *Albatross* (they had been en route for New Zealand, via Cape Town, when their ship was damaged in a storm off Cape Agulhas. They returned to Cape Town for repairs, and were offered a charter to bring goods to Knysna. There were, at that time, very few ships available on the South African coast. Most had been recalled to Europe because of the threat of war between Germany and France. The Thesens undertook a number of charters to Knysna, and finally decided to abandon their plans for New Zealand. They settled here in 1870).

On the 7th of February The Hon. Henry Barrington (owner of the Portland Farm, which he had bought from Thomas Duthie) decided to burn his lands after a month of unrelenting drought and heat. The fire quickly raged out of control, and the devastation that it caused was immense. By the 9th it had spread as far as George and Humansdorp (where 20 homesteads were gutted, and 27 people lost their lives). Much wildlife and live stock was destroyed, as were many hectares of forest and farmland. Portland itself was burnt to the ground, and the town of Knysna was only saved when the wind shifted to the west at the last moment. This became known as the Great Fire.

1874 The Thesens had by now established themselves as shippers and traders at Knysna. Blanca Thesen, daughter of Arnt, married Frank Reitz (who would later become President of the Free State Republic. One of their sons, Deneys, would become a lawyer and author, and Minister of Native Affairs in the Smuts Government. It was he who ordered a limited suspension of the influx control legislation in 1942 when South Africa was under threat of Japanese invasion).

1876 The farmer Hooper, of Ruigtevlei, discovered a gold nugget while out searching for pebbles (to feed to his ostriches) on a river at Karawater. He took it to the village where the chemist William Groom analysed it and confirmed the find, and he showed it to CF Osborne, the Government Road Engineer. Osborne sent the nugget to the Government, and 100 was granted for further exploration.

1877 During May, John Benn died and was replaced as pilot by his son, John II (who had been his father's assistant for nine years). He would serve in this post for the next or 35 years.

1880 In order to control the gold diggings, John Barrington (of Portland, and the son of Henry) was appointed Government Mining Commissioner.

Maxwell Jackson was appointed magistrate at Knysna. His stern, authoritarian style would cause him to be known as `that imperious magistrate', but he would eventually `rule' Knysna for 21 years.

1881 In April, John Benn and his men discovered an abandoned three-masted schooner at the mouth of the Noetzie River. No valuables or signs of life were found on board, and the masts and rigging were bleached white from the sun. It was obvious that the ship had been adrift for a long time. The only written records on board were the cargo log (the last entry showed that the ship had carried guano in 1876), and a scrap of paper dated 1880. She was identified as the *Phoenix* (previously known as the *Ville Pierre*) out of Point Pierre on the Island of Réunion. No further clues were ever found, and the mystery of the wreck remains unsolved. She was attached by the Customs Officer, and sold at auction for £15.

By now there were 1 000 permanent residents in the twin villages of Melville and Newhaven, and it was decided that the villages should be united. On the 4th of November, a meeting was held at which a chairman and 4 commissioners were elected to act as councilors pending proclamation of the new municipality by the government.

In May a group of Italian silk spinners disembarked at the Town Jetty. They had with them the Englishman, William Christie, who took charge of them and acted as interpreter. Henry Barrington, of Portland, had persuaded the Colonial Government to arrange for their immigration, and they had come here in the belief that they were going to work for the Government, and that all the amenities, and the infrastructure that they needed, were to be provided for them. In fact, when they got here, all they received was a Government ration subsidy for six months, and each family was allotted about 20 acres of unimproved land at Gouna. Only Christie championed their cause. Magistrate Jackson and the people of Knysna (including Barrington, who had initiated the plan to bring them here) were singularly unheeding of their plight. Christie, who fought unfailingly and often fanatically on their behalf, could stand it for only one year, and returned to England. In 1882 he wrote to the Colonial Secretary, The Earl of Kimberley, telling the whole story of the Italian settlement at Gouna. This final attempt on his part had no effect, and no further help was offered to the immigrants, who eventually (and with great difficulty, as they were a non-English speaking group of Catholics in an English speaking Protestant colony) integrated themselves into Knysna's community[17]

1882 The commissioners of the municipality petitioned the Governor at the Cape (Sir Hercules Robinson) to recognise the Municipality of Knysna. This he did under Proclamation Nº 217 of 1882.

On the 9th of June, John Benn II and his boat crew (Donald Benn, James Nelson and Book Platsie) saved four fishermen whose boat had capsized while trying to enter the Heads. Benn and his crew were awarded the Humane Society Medal for their bravery.

1883 The New Jetty was completed, and the steamship *Venice*, a regular visitor to the harbour, became the first ship to tie up alongside. The first ship to take on cargo from the wharf was the Thesen's brig *Ambulant* - 3 000 yellowwood railway

[17] The story is told in Dalene Matthee's novel *Moerbeibos* (translated as *Mulberry Forest*).

sleepers bound for Cape Town.

On 14 March, the Knysna Municipality held its first official meeting. Nine councilors were elected, with Thomas Horn as chairman. GWB Steytler was the first town clerk.

1885 CF Osborne returned to gold prospecting at Karatara, where he found a gold-bearing reef on a tributary of the Karatara River. This increased the optimism of the diggers, and he recommended that the area be opened for pegging. Although the Rand was proclaimed a goldfield in the same year, diggers were still coming in to Knysna (many on board the regular sailings of the *Venice*). A Digger's Committee was elected to keep law and order.

Magistrate Jackson, worried about the threat of war between Britain and Russia, called a meeting at which a volunteer corps was formed to defend the Knysna harbour against invasion. The corps, which was named the Knysna Rangers, had 92 recruits. Russia, however, never did declare war on England.

1886 In November, the first issue of Millwood's first newspaper (the *Millwood Sluice Box*) appeared. Soon, two more papers (the *Millwood Eaglet* and the *Millwood Critic*) would be published as well. The tent town was now being replaced by more formal buildings - including four hotels, six shops, a committee room, and an agent's office.

The Millwood Goldfields had, however, still not been proclaimed by the Government, and diggers were warned that they were trespassing by being there. On the 13th of December, a meeting was held at Millwood's Central Hotel under the chairmanship of Maxwell Jackson. About 350 miners and other interested people attended to discuss the situation.

1887 On the 6th of January the Government consented to the demands of the diggers: the Millwood area was finally proclaimed, and an inspector of mines appointed (Patrick Fletcher). The year's (official) production of gold at Millwood was 655 ounces.

Queen Victoria's Jubilee was celebrated on the 24th of May. The municipality declared the day Arbour Day, and Knysna's first street trees were planted by the town's school children - these were the oaks for which the Main Street was at one time famous.

1888 In January there were around 1 000 permanent residents at Millwood. By mid-year, however, gold fever began to wane, and the hotels began to feel the economic pinch.

The tyrannical Magistrate Jackson took overseas leave. He had by now so infuriated the people of the town, that, in his absence, a petition to have him removed was compiled and sent to the Colonial Secretary. Over 200 signatures were collected, including those of the mayor and of divisional and municipal councilors. The petition was refused: the Secretary considered Jackson to be a `zealous, efficient officer'. On his return, however, the people seem to have suffered a change of heart, and Maxwell Jackson was warmly met by a reception committee at the jetty. 85 people had signed an address (which was read out by the Rev. BC Mortimer) assuring him of their `greatest esteem', and hoping that he would be spared to live a long life among them as magistrate and citizen.

1889 By May of this year, the total recorded yield of gold from Millwood was 2360 ounces. After this, however, very little gold was found.

1890 The *Norseman* tied up at the wharf in November. She was equipped with the first electric lighting seen in Knysna.

The economic situation was bleak at Millwood. At the end of the year, CF Osborne wrote that only one company - manned by only one manager and one digger - was working the goldfields (to service their needs there were three shops, five officials, three constables, an inspector and a registrar).

1895 The first ship of the Thesen Line, the *Agnar,* arrived in Knysna to begin trading on the coast. Amongst other cargoes, she regularly took schoolchildren from Knysna to boarding school in Cape Town. Because of the stormy seas (and boarding school!), the children nicknamed her the *Agony* (she plied these waters until 1934, when she was sold off to French owners who put her to work in Madagascar. She was lost at sea four years later).

1897 A Rocket Path was built on the Western Head. It ran from the stone jetty (now Smith's Jetty) to the top of Needle's Point. The idea was that it could be used for carrying distress rockets up the hill so that ropes could be shot out to ships in trouble in the Heads.

In June, the *Fredheim*, a 440 ton 3-masted barque, was wrecked at the Heads. She had been carrying creosote, and, impatient because the pilot had delayed her entry to the lagoon (because of the sea conditions) for over a week, she tried unsuccessfully to cross the bar. The Rocket Crew fired rockets out to her, and John Benn and his pilot's crew rowed out to help save the sailors on board. Only one life was lost, but the creosote pollution affected the marine life for 18 months afterward.

1898 In this year, the Council adopted a motion to install a water scheme for the town (it would only be opened in 1926).

1900 The *Nautilis*, carrying the first of Knysna's recruits bound for the South African War, sailed for Cape Town. The Knysna Rangers held their last annual camp.

1901 On the 17th of January, Martial Law was declared in the Cape Colony as a consequence of the South African War. A meeting was called in Knysna at which 200 volunteers area formed a Town Guard under acting-commandant (Magistrate) Maxwell Jackson. At the next Nachtmaal, when many of the farmers from the surrounding districts came to town, a mounted corps was formed with about 70 volunteers.

On the 1st of March Major William Anstruther Thomson arrived to take over as commandant of the Town Guard (he was from the Royal Horse Guards regiment, and stayed in Knysna until the end of the year when he left to take up the post of Inspector of Refugee Camps). Under Thomson's command, the Guard built a stone fort on Verdompskop, the hill just west of the present day hospital. It was created to repel any Boer attack, and came to be known as `Thomson's Folly'.

1902 Major Thomson was replaced by Major (later Colonel) James Meredith Maurice (who met and married a Knysna girl - Katherine Newdigate - and settled here after the war). The Town Guard was stood down with the war coming to an end, and some of its members were transferred to other regiments (the District Mounted Troop, Robert's Horse, and Gorringes Scouts).

1903 Three ship's masters attempted `suicide' during 1903 (deliberately wrecking their vessels in order to claim the insurance money). The *Anna* was unsuccessful: she sailed between two rocks in the Heads, but escaped danger (possibly by a surge in the tide?). John Benn eventually brought her safely into the harbour, and she left some time later carrying only ballast. She was finally wrecked off Singapore. The *Louise* was wrecked on a rock halfway between Noetzie and Robberg. And the *Paquita* (the 460 ton, three-masted German barque that became perhaps the most famous wreck at Knysna) went aground on the rocks at the Eastern Head on the 18th of October. It was her second attempt at suicide (what remains of the wreck lie in the water in front of Paquita's Restaurant at the Heads. It is now a popular spot for recreational divers. An interpretative signboard has been put up near the White Beacon and shows what the wreck looks like today).

1905 The first motor car seen in Knysna came from George in the record time of 3 hours.

1910 The 458 ton barque *Seier* was wrecked (a possible suicide) at Buffalo Bay. She was carrying 2 528 barrels of creosote and 40 tons of coal. The resultant trail of pollution stretched from Ruigtevlei to the Heads, with considerable damage to marine and shore life.

1912 Knysna's first garage was opened.

1913 In November, the *Agnar* crashed into the old wooden wharf (now 38 years old). Although damage to the ship was minimal, the wharf had to be replaced. The concrete structure which is today known as Thesen's Jetty was built in its place..

1914 The *Pisang*, a 40 ton Norwegian whaling ship operating from the whaling station at Beacon Island in Plettenberg Bay, was swamped whilst entering the Heads. She settled on the sandy bottom, blocking the shipping channel (the government would spend 1000 on bringing a tug from Durban to blast away the wreck and clear the channel). Five of the crew were drowned. She was the last ship wrecked at the Knysna harbour.

On the 20th of October, the first of Knysna's volunteers departed for the Great (First World) War.

1924 Knysna's first street lamps were installed (27 were electric, and 27 were paraffin).

The Millwood Goldfields were officially abandoned by Government Proclamation Nº 294/124.

1928 The railway line between George and Knysna was opened.

1929 The Knysna Publicity Association was founded. It had offices in an old school building (which has since been demolished) in the church yard. In the first year, 736 people visited its offices.

1930 The first tourist train to visit Knysna arrived on the 7th of January.

1935 The first tarred road was built in Knysna. It ran from the Imperial Hotel (now the Knysna Protea Hotel) to the old Magistrate's office (the building across the street

from the present-day Post Office).

1939 On the 3rd of January, Professor of Ichthyology JLB Smith, who was on holiday at his home in Knysna, received a letter from Marjorie Courtney-Latimer informing him of the capture of a strange looking fish, and asking him to help with its identification. It proved to be a coelacanth. It was considered to be one of the great discoveries of the 20th Century because scientists had thought that this group of fishes (the *crossopterygians*) had been extinct for over 60 million years.[18]

The first of Knysna Recruits left for World War II.

During the War, Thesen's Knysna Boatyard was used to construct 640 vessels for the Allied forces. The largest of these were ten *Fairmile* class submarine hunters (which were built entirely of wood in order to escape the submariners' tracking devices), and the smallest were the long boats that were used as life rafts.

1944 Rocket drill was carried out for the last time along the Rocket Path.

1948 The Knysna Oyster Company was formed as a joint venture between Thesen & Co. And the Fisheries Development Corporation. The success of the operation was very limited, and it only became economically viable in the 'seventies, when it was decided to import a species of oyster called *Crassostrea gigas* (the Pacific Oyster). Today there are two competing companies producing oysters (the Knysna Oyster Company and the South Cape Oyster Company) in the Knysna lagoon. The oyster industry is an important employer and source of revenue for Knysna, as well as being a major tourist attraction.

In Union-wide elections, The National Party was brought to power.

1951 The National Road from Cape Town to Port Elizabeth was built through Knysna, and made the town more accessible and open for trade and tourism.

1953 The naval vessel *SAS Pietermaritzburg* visited Knysna in September. She was to be the last ship to enter the Knysna Harbour.

1954 The Government closed down the harbour establishment in Knysna. The economic situation was such that the expense could no longer be justified (one of the contributing factors was the railway line which sped up - and made it cheaper - to transport goods and passengers to and from the town). Reuben Benn, the last of the Pilots at the Knysna Heads was transferred away.

1956 The Group Areas Act was created. Proclamations and forced removals under this legislation would continue into the 1980's .

Percy Mdala, who was to become one of the town's best known educationalists, came to Knysna to work for Bishop Stainton (then Rector at St George's Church). He started teaching in the church school at Salt River. Mdala was, for many years, the only fully trained black educationalist in Knysna.

1970 The first houses began to go up in Hornlee, the coloured area proclaimed East of Knysna.

[18] The JLB Smith Institute of Ichthyology at Rhodes University in Grahamstown have installed a preserved specimen of a coelacanth in the Old Gaol Museum, together with a display which illustrates the capture of the first specimens. The story is told in Smith's autobiographical book *Old Four Legs*.

1971 A new school (for black pupils) was started in Thembelitsha (north of Knysna) under the principalship of Percy Mdala (although he resigned later that same year).

1973 Most of the residents of Salt River had by now been moved to Hornlee.

1976 Country-wide dissatisfaction with the education system culminated in the *Soweto Uprising* on the 16th of June. In Knysna, the Thembelitsha Primary School (later renamed Percy Mdala School) was burned down on the 21st of August.

1984 Featherbed Nature Reserve was opened to the public for the first time (it has since become one of Knysna's biggest tourist attractions).

1992 The Percy Mdala High School was opened.

1994 The country held its first democratic elections, which began on April 27. Nelson Mandela was installed as the country's first democratically elected president, and the Government of National Unity was formed.

1995 Knysna's first democratic council elections were held on November 1. There was a 68 percentage poll. The first democratically elected mayor was Councilor Thembe Mfene. The other elected councilors were Alan Kock, Henry Avontuur, N Siyona, Ralph Stander, Enrico Campher, F Dixon, Paul Thesen, M Peyi, B Pienaar, N du Plessis, T Holmes and W Best. They took office on the day of the election, and operated in terms of the Municipal Ordinance (20 of 1974), as well as the Transitional Local Government Act

Part 3
Chronological History of Plettenberg Bay

Chronological History of Plettenberg Bay

The recorded history of Plettenberg Bay goes back only as far as about five hundred years, when the first European explorer's came to the area. In the past, the erroneous perception was that the country was at that time almost uninhabited, and was only occasionally visited by wandering bands of Khoi (Hottentot) and San (Bushman) people. The real picture is, of course, much more complicated than that. Archaeological sites along the Southern Cape Coast prove that this area was home to many peoples for thousands of years. In the Plettenberg Bay area, important sites have been recorded at Robberg and at Hangklip on the Keurbooms River Estuary.[19]

The excavation of the Nelson's Bay Cave (1964 - 1971) by archaeologists from the University of Cape Town showed that it had first been inhabited about 70 000 years ago. Other sites (such as at Ladywood in the Piesang Valley) have revealed artefacts that are between 120 000 and 500 000 years old. It is significant that the first season of digging at the Nelson's Bay site revealed evidence that the people in this area were herding sheep and making pottery about 1 900 years ago. A child's skeleton from this site was carbon-dated and found to be 2 700 years old, and was (in 1982) considered to be " *the first accurately dated human skeleton to be recovered from South Africa*" [20].

The town itself was named after the Bay on which it lies - Plettenberg Bay, which the Governor of the Cape - Joachim Ammema van Plettenberg - may have named after himself when he briefly visited here in 1778[21] (the settlement at the Bay was known as the Village of Formosa until 1935, when the Plettenberg Bay Local Area was proclaimed).

1488 The Portuguese navigator Bartholomew Diaz and his ships crews passed what is now Plettenberg Bay, on their voyage to discover the passage to India. Diaz' ship's log was lost at sea, and it is therefore not known whether he and his men actually landed here. It is clear, however, that he named the Bay *Bahia das Alagoas* - the Bay of Lagoons, and the Outeniqua Mountains *Sierra del Estrella* - the Mountains of the Star.

1576 Manuel de Mesquita de Perestrello, another Portuguese navigator, put in at the Bay, renaming it *Bahia Formosa* - the Beautiful Bay. The south-easterly wind that he encountered put him off, and he quickly made sail for the Cape.

1630 On her journey from India to Portugal the *Sao Gonzales* anchored in the Bay for repairs to her leaking hull. She arrived in June and for at least seven weeks the crew argued about it, but made no attempt at repairs, nor to leave the ship and go ashore. In August, about 100 men finally did go ashore, but a further 133 remained on board. A storm came up that wrecked the ship, and all 133 were lost. The survivors built shelters and

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19 Heydoorn, AEF & Grindley JR (eds.): **Estuaries of the Cape: Part II: Report N° 31: Keurbooms/Bitou System**. *Estuarine and Coastal Research Unit - National Research Institute for Oceanology, CSIR*. Stellenbosch 1984

20 Storrar, P: **Portrait of Plettenberg Bay**: *Centaur Publishers*, Cape Town 1982

21 van Plettenberg was accompanied on this visit by one Captain Robert Jacob Gordon, who claimed to have named the Bay after the Governor in the year before van Plettenberg's visit.

salvaged what they could of the wreck and, using the natural timber of the area, built two new vessels. They also built a church - there were five priest in the group, including Friar Francisco dos Santos, who kept a careful and detailed record of the shipwreck (his original manuscript is preserved in the British Museum). They bartered with the indigenous people of the area - who were almost certainly San tribesmen - for cattle and sheep which were paid for with pieces of iron salvaged from the ship. After about eight months, the two new vessels were completed, and the men were divided into two groups. One sailed back towards India, and the other made for Portugal. The first arrived safely in Mozambique, where they waited for help. The second were taken aboard the *St Ignatius Loyola*, which was bound for Portugal. The *Loyola*, however, was wrecked at the mouth of the Tagus River, and was lost with all hands within site of Lisbon.

In the mid 1800's, a stone block was discovered near Robberg. It had been inscribed with a cross and, in Portuguese, the words "*Here was lost the Ship Sao Gonzales in the year 1630. They built two vessels*." And in 1979, the actual place of the settlement was discovered at the point where the Robberg joins the mainland. Many pieces of porcelain, many beads, a religious medal and incense were found at the site[22].

1772 Carl Peter Thunberg[23] arrived at the Cape to begin his journey into the interior. He was the first European to record having crossed the Outeniqua Mountains from south to north, following much the same route along which the Prince Alfred's Pass would be built almost 100 years later. He was the first scientist to make a thorough study of Plettenberg Bay.

The authorities at the Cape had become interested in the timber resources of the area, and they established the first woodcutter's post (on the Swart River near George).

The first navigational beacon was erected at Beacon Island. It was a block of stinkwood and was inscribed with the latitude and longitude of the Island as well as the magnetic variation so that visiting navigators could set their chronometers by it. The original beacon was replaced with two more stinkwood beacons in 1864 and in 1881, before the present stone block was erected.

1777 An unknown cartographer drew a map of the Bay showing a farm belonging to one Cornelis Botha. It is not known precisely when Botha arrived here, but the evidence of this map proves that he was the first permanent white settler here. The building which would later become known as the Old Rectory was shown on the map as a 'residence for the people.'

1778 Governor of the Cape, Joachim van Plettenberg, arrived at the bay by land as part of his journey of inspection of the Colony. van Plettenberg had decided to see for himself whether the demands of the people living on the frontier had any foundation. According to Storrar, he was "*an enlightened Hollander ... critical of the behaviour of frontiersmen towards the Blacks, and deplored their tendency to treat all 'heathens' as rogues and semi-human beings. He wished to size up the situation for himself."{* Whilst he was here he met with Cornelis Botha, who told him that this was the bay named Bahia das Alagoas by Bartholomew Diaz.

On November 6, van Plettenberg erected a '*posessional stone'* - a slate column bearing his coat of arms and the 'VOC' monogram of the Dutch East India Company

22 These finds are preserved in the display cases in the entrance hall of the Municipal offices.

23 Thunberg is known as the Father of Modern Botany. He was Swedish and was a Doctor of Physic at the University of Uppsala.

which indicated that the Company had now laid claim to the district - that they 'owned' it. After this brief visit, the Bay was known as *Plettenberg's Bay* (the *'s* was later dropped)[24].

1782 Francois le Vaillant, the French explorer, spent about six months in the district, and is said to have been the first white person to hunt an elephant here - at Die Poort, between Plettenberg Bay and Knysna. le Vaillant published a five-volume work on his travels, in which he recorded that there were Dutch people in the area of the Bay who were exploiting the timber in the forest and planting crops. He also made suggestions for the establishment of the forestry industry in the area.

1786 By now the Lords Seventeen (the 'directors' of the Dutch East India Company who were based in the Netherlands) had become aware of the value of the timber in the indigenous forests, and they ordered the Cape Government to appoint a commission to investigate exporting it from the Bay. The Colony was desperately short of wood: by the middle of the eighteenth century, the forests around Cape Town had been completely denuded. A commission, led by Francois Duminy, was sent to inspect the Bay and its forests.

1787 As a result of the findings of the commission, the Company entered into a contract with two men who were working the timber here: Cornelis Botha and Johan Jacob Kritzinger. A Company's Post was established, and Jacob Jerling was contracted to build a timber store. The contract stipulated that all the structural timber should be of yellowwood, which does not stand up well to the weather. As a result, by 1803 the store was reported to be in ruins. Although at least one traveller (the German scientist Henry Lichtenstein, in 1803) recorded in his writings that the Governor had ordered a new store to be built, there is no evidence to suggest that this happened, and the ruins, which have been partly restored and are now a national monument, are those of the original structure.

Johan Frederick Meeding was promoted from superintendent of the woodcutter's post in George, and took over the position of Postholder at the Bay where he was responsible for the woodcutters, the timber store, and for all the Company's local financial interests. He was also responsible for maintaining law and order in the district. Meeding remained in this post through the successive occupations of the Cape by the Dutch, the British and the Batavian Republic. In 1806 he was promoted to Superintendent when the British became the final occupiers of the Cape Colony.

1788 The first load of timber was taken from the new store and loaded aboard *de Meermin*, under command of Francois Duminy, for delivery to Cape Town. There were no harbour facilities, and the landing place was on the present-day Beacon Island beach. The timber industry at Plettenberg Bay did not get off to a good start because harvesting and loading were enormously difficult. Trees that had been chosen for the length of their trunks were felled, and the crown and branches cut off and left to rot. The trunks were cut up by hand over saw-pits dug into the forest floor, and the logs and beams were loaded onto wooden sleds and hauled manually along rough tracks known as "slip paths," before being loaded onto ox wagons and brought to the store at the Bay. Beams

[24] One of the people who accompanied van Plettenberg was Capt. Robert Jacob Gordon, then commander of the Garrison at the Cape. Although it is generally thought that van Plettenberg named the Bay after himself during his visit, Gordon claims to have named it in the Governor's honour during a visit that he (Gordon) had made in the year before he came here with van Plettenberg.

that had been cut along the Bitou or Keurbooms Rivers were floated downstream to the lagoon, from where it was relatively easy to move them into the store (at that time the mouth flowed into the sea much closer to the Lookout Rocks than it does today).

Because of the problems of supply, the timber was not delivered in the quantities that the Government desired, so that by 1795 the Board of Revenue at the Cape had recommended the closing of the timber store.

1799 By now the indigenous population of the country had become frustrated at the rate of European colonisation, and alliances were being formed between black and Khoi tribesmen to try and stem the tide - the result was the many Frontier Wars (or the "*Hundred Year War*" [25]). In this year, one such group travelled through the Langkloof and over the Outeniqua Mountains, attacking European settlements and burning them down. They killed 11 men and four women, and took a number of women and children prisoner (although these they later released). They attacked many farms in the Plettenberg Bay/Knysna district.

During this time James Callander[26] wrote to the authorities saying that the inhabitants needed gunpowder (amongst other things) to defend themselves. All he received in reply from the Cape Government was a letter ordering him to stand firm and, "as an Englishman" to set an example for the other people at Plettenberg Bay. Somehow the attackers were repelled, but the uneasy peace in this area prevailed for only three years.

1802 Renewed attacks began against the colonists - in one, the farm Melkhoutkraal at Knysna was pillaged (this was the farm that would later become the home of George Rex). The farm Stofpad on the Bitou River belonged to one Cornelis van der Watt, and held a strategic position on the rough road that ran over the mountains to Avontuur. It was decided that this should become the place where local colonists could gather with their families, servants and livestock and protect themselves against the raiders. It was laid out in a kind of lager, with a thick screen of branches around the perimeter. Not everybody wanted to shelter there, however, and one party tried to trek to the safety of Mossel Bay. They were ambushed in the forests at Die Poort (near the Garden of Eden), and four people were killed - three farmers from Plettenberg Bay and a Khoi servant. One man and one woman managed to escape and get to Stofpad for help, but the other women and the children were taken hostage. On the following day a ransom note was delivered to the people at Stofpad, but the farmers suspected a trap. A commando was formed which tracked the ambushers to a hide-out near the present day Fisanthoek. Eight black and three Khoi men were killed, and 200 cattle were recovered. The hostages were not there - they had been lead away to Gansvlei, where they were released.

As a result of the attack, the government finally sent ammunition to the Bay aboard the *Lady Anne Barnard*. Meeding, however, had had enough, and requested permission to move, with his family, to Cape Town. The Lieutenant-Governor replied in a strongly worded letter that he disapproved of Meeding's request as it would set an example which would "certainly be followed by others and the country most probably deserted." A number of other families - not in the employ of the Government - did however leave the district, although the marauders were eventually subdued.

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[25] Mostert, Noël: **Frontiers - the Epic of South Africa's Creation and the Tragedy of the Xhosa People** *Jonathan Cape,* London 1992

[26] Callander had drawn the first map of the Knysna Lagoon - in 1798

1811 Royal Navy Capt. AF Jones came to the Bay to draw up the first detailed report on its forests and timber. He stated that the forest were smaller than had originally been thought, that harvesting the timber was too difficult because of the problems of accessibility, and that neither Plettenberg Bay nor the Knysna Lagoon were suitable for shipping. Because of this report, with all the problems that Meeding and the other lumbermen had experienced, and with the opening of the Knysna Harbour[27] in 1817, Plettenberg Bay eventually lost its importance as a timber supply point, although small quantities of timber were still harvested here for many years.

1813 Meeding died of an asthma attack, and was succeeded as Resident by John Squier. His duties were to be superintendent of the Government Forests, and to help any ships that might enter the Bay in distress. He had a staff of two - a signalman and a labourer - to help him. He served until 1824, when he was replaced by Capt. William Walter Harding.

1826 Capt. Robert Harker took up the post of Resident (as well as postmaster, postholder and Justice of the Peace) at Plettenberg Bay.

1827 The ship *Berwick* was wrecked at Tsitsikamma, with the loss of the captain and 14 men. 46 survivors of the shipwreck were taken by one Petrus Stroebel, a scout, to Marthinus Jerling's home on the Keurbooms River, where they were fed and housed. Stroebel also salvaged the mail from the wreck - 88 letters posted at Bengal.

1831 John Archibald Sinclair (who had visited the Bay in 1829 as captain of the *Calypso* - carrying produce from Algoa Bay to Cape Town) arrived to set up a whaling station at Plettenberg Bay. It is thought that he caught his first whale - a southern right - in 1832. He married Julia Maria Harker, eldest daughter of Resident Harker (family legend has it that the Resident only gave permission for the marriage *after* the capture of this first whale - i.e. once his future son-in-law had proved himself capable of providing for his daughter).

1834 Slavery was officially abolished in South Africa.

In an article in the *Cape of Good Hope Almanac*, resident Harker showed that the main means of livelihood for the people at the Bay was still the exploitation of the indigenous forests.

1843 The *Prince Albert* was wrecked in the Bay. She was driven ashore by a south-easterly gale.

1845 The *Active* was wrecked in the Bay. She had sprung a leak and was driven ashore in a south-easterly gale.

William Henry Newdigate and his younger brother George arrived in South Africa from England.

1846 William Newdigate bought 1512 ha of the farm Roodefontein on the Bitou River. He renamed his portion Redbourne. Many of the English families that settled at the Bay in the mid 1800's came to work for Newdigate. The men were selected for their much-

[27] George Rex of Knysna had for many years insisted that the Knysna mouth was navigable, and this was finally demonstrated by the successful entrance of the *Podargus* in 1817. After this, the Knysna River was declared a port for the first time.

needed skills, and Storrar records that "*among the men working for William in 1850 were William Derbyshire, farmer and millwright, ... William Page, carpenter and cabinet maker...James Thompson, builder..*" and in the following year that they were joined by "*... James Noble, blacksmith and builder, ... and at varying stages throughout the 1850's by Robert Cowley, farmer, Aaron Toplis, miller, John Noble, builder...*"

1847 Harker[28] was pensioned off (he was 67) and the post of Resident was abolished. He was offered the use of the Residency (the Resident's official home) for the rest of his lifetime.

The *Swiftsure*, John Fisher Sewell's 121 ton schooner, was wrecked in the Bay. With this, he decided to settle here, and would later become harbourmaster (in 1874) and also the customs officer (in 1881). He kept a regular diary, which has survived as an invaluable record of life at the Bay in the 1800's. [29]

1848 Bishop Gray, the first Bishop to be appointed at the Cape, made the first of many tours of his diocese, and visited the George, Knysna and Plettenberg Bay area during September (in April, shortly after his arrival at Cape. Town, he had been visited by William Newdigate and Thomas Duthie - of Knysna - who had discussed the building of churches at Plettenberg Bay and Knysna with him).

1850 The *Nepaul* was wrecked off the mouth of the Swart River, with the loss of three members of the crew (survivors were taken to the Meeding house at Ruigtevlei)

Bishop Gray made his second visit to Plettenberg Bay. He found that William Newdigate was building a wooden church at Redbourne (St Andrews, Redbourne). It became the first of the Anglican churches to be completed in the district of George. After its completion, Newdigate lent some of his own men to help Duthie complete the stone church of the Holy Trinity at Belvidere, outside Knysna (the churches at Belvidere and Newhaven [later Knysna], and the Churchyard at Redbourne were consecrated by Bishop Gray on his third visit here - in 1855).

1851 William Newdigate married Caroline Duthie of Belvidere at the newly built St George's Church in Knysna. They were the first couple whose marriage was solemnised at the Church.

1855 On his third visit to the Bay, Bishop Gray licensed the small, temporary, wooden St Andrew's Chapel for ecclesiastical purposes.

1860 Thomas Bain[30] arrived at Knysna to begin construction of a series of roads that would open up the Garden Route by making it more accessible from the land. Most travellers had, up to this time, found it easier to approach Knysna and Plettenberg Bay by sea, as the few tracks that did exist were treacherously steep and often muddy, and crossing many of the rivers became impossible after rain. Storrar quotes the Cape Argus as

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28 Harkerville was settled by one of Robert's sons - Charles, who gave it the family name. Robert himself died there on 22 April 1859. He was buried in the same graveyard as his wife and other members of his family (including his eldest son, who pre-deceased him).

29 Sewell, John F (edited by CD Storrar) **The Private Diary of the Village Harbourmaster 1875 - 1897** *The Ladywood Publisher* Plettenberg Bay 1983

30 Thomas Bain (1830 - 1839) was perhaps South Africa's most famous roads engineer. He was responsible for building many of the passes which are today important tourist attractions - especially here in the Garden Route. These included the Prince Alfred's, Homtini, Robinson and Swartberg Passes and the Meiring's Poort, as well as the Tsitsikamma road.

writing in 1858 that "*Plettenberg Bay is only reached by toiling over a road unparalleled in the Colonies for difficulties.*"

William Newdigate built the first pontoon across the Keurbooms River at his own expense.

1863 With the death of his father (and on receiving his inheritance) William Newdigate began building Forest Hall on 1 620 hectares of land that he had recently bought at The Crags.

1867 Thomas Bain's road linking the Garden Route with the Langkloof - Prince Alfred's Pass - was completed.

1869 The first six weeks of the year brought intensely hot berg winds and sporadic fires[31]. On 9 February, the fire (it later became known as The Great Fire) swept through The Crags. Many of the Newdigates, their family, neighbours and servants took refuge in Forest Hall, which had a tin roof. A fire-break had by chance been burnt between the house and the surrounding forest a few weeks before, and they felt that the house would be relatively safe from burning. In fact the house was saved when, in the late afternoon, the wind changed and pushed the fire back.

Bishop Gray (on behalf of the Church) bought about 7.2 ha of land on the foreshore from the deceased estate of Capt. John Sinclair. The improvements included Sinclair's house (the building is now known as the Old Rectory) which had first appeared as a 'residence for the people' on the unknown cartographer's 1777 map of the Bay.

1875 The wooden chapel which stood on the site of the present St Peter's Church was destroyed in a gale, and for the next few years services were held in the schoolroom at the Rectory. The planning of a permanent stone church was, however, already well under way. Sophia Gray (Wife of the Bishop) had drawn up the original plans in 1849, but it was not until 1872 that the Church Building Committee held its first meeting. Tenders for the construction of the church were finally called for in 1874.

In July the *Louis Alfred* arrived in the Bay on her maiden voyage. She had come from Wales and spent some two months here, intermittently loading timber and standing off in the Bay. In October, she dragged and then slipped her anchor during a gale, and was washed onto the rocks. She was twice surveyed by the harbourmaster, and finally declared wrecked. She was stripped and sold at auction (her hull fetched only £16) to a Mr Roberts, who tried, unsuccessfully to re-float her. Roberts sold her to a Capt. Jeary, who also failed to refloat her, and sold her to a salvage expert from Cape Town, a Mr Keeve, who managed to refloat her after three months work, re- rig her, and begin trading with her (mostly between Cape Town and Walvis Bay - although she did re-visit Plettenberg Bay at least once).

1880 Thomas Bain began building the first road through the Tsitsikamma, to link Plettenberg Bay with Humansdorp. When completed (in 1884) it was 160km long, and included the Passes at the Bloukrans, Groot and Storms Rivers. Today's bypass road - the scenic

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31 On the 7th of February The Hon. Henry Barrington (owner of Portland Farm, outside Knysna) had decided to burn his lands. The fire quickly raged out of control, and the devastation that it caused was immense. By the 9th, when it passed through The Crags, the fire was spread as far as George and Humansdorp (where 20 homesteads were gutted, and 27 people lost their lives). Much wildlife and live stock was destroyed, as were many hectares of forest and farmland. Portland itself was burnt to the ground, and, like Forest Hall, the town of Knysna was only saved when the wind shifted to the west at the last moment.

route that avoids the Toll road - follows much the same route that Bain laid out.

1881 Bishop West Jones (who succeeded Bishop Gray) consecrated St Peter's Church on 14 August.

1884 The exact date of the construction of the old Welcome Hotel (later The Formosa Hotel) is uncertain, but in this year, the first advertisements for accommodation were put out by one IWO Read. In 1885, the Hotel was taken over by Jack and Bessie Rex (whose grandfather had been George Rex of Knysna).

As a result of the recommendations of the Comte M de Vasselot de Régné, the township of Covie was laid out on Crown Lands (near the present-day Nature's Valley Township), and 30 stands of about 1.8 ha each were made available to the woodcutters. A commonage of about 730 ha stretched from the township to the high water mark, thus ensuring the people access to the sea.

1895 The exact date of the establishment of a whaling station on Beacon Island is unsure. John Archibald Sinclair, who was the first person to hunt whales in the Bay, had died in 1859, and the industry was continued by men such Capt. Jeffries and Cornelis Watson (Watson entered into partnership with one Percy Toplis, who owned the whaling lease on Beacon Island). In 1895 Toplis wrote to his son Cuthbert that two whales had been caught, and that they had yielded about 1000 gallons of whale oil and 1200 lbs. of whalebone (baleen). The whales were hunted from rowing boats, and Watson owned two - he usually went out in one, with Angus McCullam as the harpooner in the other. Each boat was about nine metres long, and was manned by four oarsmen and a coxswain (steerer). They would row out to the whale and the lead man would throw the harpoon by hand into a vulnerable spot on the whale's body (the harpoon's line was tied to the boat so that the prey should not be lost). If they could, they would then try to get close enough to throw a lance or use a bomb-gun to kill the whale. If not, they would wait for it to die from loss of blood. The carcass was then hauled onto the beach, where it was stripped of its useful parts (particularly the blubber and baleen plates), and the rest was left to rot.

1899 During a whale hunt, Watson was lost at sea. The whale washed up at Cape Town a week later (with the harpoon still in it), and a single plank - bearing Watson's boat's name - was found on the beach three months later.

During July, all the saw milling equipment belonging to Forest Hall was sold off at auction. William Newdigate had died in 1884, and his family had found it more and more difficult to survive off the income from the estate - especially from timber (transport was expensive and timber was not selling at a price that warranted these costs).

1908 In August the House of Assembly granted a lease on the Beacon Island to the Southern Whaling Company. Percy Toplis sold his whaling rights for £125. However, it seems the company folded before it made use of the Island.

1909 Aaron Toplis died at the age of 80, and left about 3.6 hectares of his property to the church. The land became known as Plettenberg Bay Central Township, and was for about 50 years the home of some of the local coloured families who would later (under the Apartheid laws) be moved to New Horizons. The church eventually sold the land to property developers for R139 000.00.

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1912 The Norwegian company *Hvalfangerseskabet Harald Haarfagre* began setting up a whaling station on Beacon Island. Thesen & Co. of Knysna were appointed the local agents. Seven new whaling ships (named *Bitou, Formosa, Goukama, Knysna, Piesang, Plettenberg* and *Tzitzikama*), a factory ship (the *Haugerland)*, and two supply ships (the *Lesseps* and the *Sigrun*) were ordered from Norway. The *Plettenberg* was the first to arrive in the Bay - on 26 December 1912.

1913 A number of boilers for rendering blubber had been erected on Beacon Island, and the Company's catch for this, their first season, amounted to 21 whales.
A meeting was held in March under the chairmanship of the Rev. WG Sharples, to discuss the construction of a church 'for Europeans only' on a piece of land donated by the Toplis family. The Bishop in Cape Town was in favour of the project, and pledged £600 towards it. Many of the better-known Knysna families also contributed, and Sharples himself donated £5 (this was quite a sacrifice as he himself was poorly paid). It seems that only William Jones, the Church Warden who had built St Peter's Church, objected to this new, segregated church, (St Thomas's) saying that it was not needed. The project was delayed by the First World War, and the church was only finally completed in 1934. It had originally been decided that the two back pews would be reserved for coloured people, but, according to Storrar "*Jim Cuthbert and his wife, who had both been notable benefactors of the scheme throughout the long, drawn-out process of parturition, later withdrew even this concession."* [32]

1914 In June a fire destroyed much of the whaling station on the Island, and on 1 September the whaler Piesang was wrecked on trying to enter the Knysna Lagoon. Five of here crew were lost, and, although her captain was rescued, he died shortly afterwards.
With the outbreak of the First World War, the demand for - and the price of - whale oil increased. Light-house keepers at Cape Recife, Cape St Francis and Mossel Bay assisted the whalers by reporting whale sitings, and this helped to contribute to the success of the 1915 whaling season.

1916 By now there was a glut of whale oil at Plettenberg Bay: 9000 barrels were left over from 1915, and a 16000 barrels-worth was held in storage tanks. By the first of December the factory had stopped working. Without a steady market for its products (the war had seriously interfered with the lines of transport to Europe), and with whaling only possible during the winter months, the company could not be made to pay. The equipment on Beacon Island was sold to the Union Whaling Company in Durban, and the remaining whaling ships were sold to various new owners[33].

1918 The first holiday house - a shack belonging to a geologist named von Bonde - was erected on the Barnardo farm at Groot River. This was the beginning of what would become the Nature's Valley township.

1928 The Griqua Community made their third (and last) trek - from the Touws River in the Karoo to Harkerville, where they settled. In 1860 they had, as a community, left their

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[32] Over the following 30 years, the rectors of the Parish all disapproved of the segregation of the church, and Storrar quotes the Rev. Wurts as writing in 1964 that *"St Thomas's Church is not needed, never has been needed, and will not be needed in the future."*

[33] The Union Whaling Company operated until 1976. For further information on whales and whaling, see *The Marine Environment* below

traditional home near Philippolis in the Cape, and made their first trek into the 'no-man's land' between the Cape Colony and the Natal, where they founded their capital - Kokstad (named after Adam Kok III, their leader at that time), and where they hoped they could live independently. The land that they occupied, however, had been ceded to the British by the Mpondo, and the Griqua were forced to accept Joseph Orpen as British Resident to East Griqualand. Without Kok's knowledge - or consent - Orpen lobbied for complete annexation by the British, which finally happened in 1874. The Griqua were angry at the deception. "*It was not so much that take-over the Griqua resented, but the fact that they had not been consulted and had been 'taken over' like so many cattle or sheep. They had great pride in their identity which, in the face of advancing white colonisation, they had so far preserved.*" (Oakes[34] page 190). Adam Kok was an astute politician, and was largely responsible for the continuing independence of the Griqua. After Kok's death in 1875, however, Orpen lifted the bans on the sale of Griqua land and of liquor (which Kok had strictly enforced). Many members of the community quickly sold off portions of their lands and "*with the community on the verge of breaking up, and still resentful of the high-handed treatment it had received, many individuals turned for solace to the liquor shops that now flourished in various part of their territory"* [35] Governor of the Cape, Sir Henry Barkly, sent Capt. William Blyth to help control the Griqua at Kokstad as he considered any public discussions that they (the Griqua) might hold to be a threat to law and order. Blyth was a stern disciplinarian, and his methods caused much resentment. The community soon formed an alliance with the Mpondo, and persuaded them to join in a rebellion. About 500 of the rebels, who had gathered near Mount Currie, were attacked by British Forces. 12 Griqua were killed, and the rest fled to Mount Ingeli, where they were again caught, and where 20 more were killed. The balance were captured and sent to prison in Cape Town, but were released (after a long period) because it was decided that their imprisonment was illegal. As a result of the affair, however, the Griqua's land was formally annexed to the Cape in 1879.

The second trek of the Griqua occurred in 1917 under Andries Stockenström Le Fleur, who had married a daughter of Adam Kock III, and who was to become known as 'The Reformer.' For this second trek, he persuaded the community to sell their lands, and chartered a train to take everyone to Touws River in the Karoo, where he planned to settle. The trek was made but the plans for settlement failed, and the people were soon imploring the Government as well as the Council in Kokstad to help them to return. Although the official position was strongly unsympathetic, many of the people managed to make the journey to their former home.

In the mid 1920's, The Reformer again addressed the community in Kokstad, urging them to follow him to a new country. None agreed, and he was arrested, declared an undesirable person, and given until 8 April, 1927 to leave the Transkeian Territories. But a belief arose among the people that God had appeared to le Fleur and had told him to go and build a new nation. So, in 1928, many of the Griqua made this third and last trek with The Reformer. They travelled on donkeys and in carts, and the original Kokstad party were joined by other parties from other towns along the way. They were desperately poor, and the men took work wherever they could to earn a little money for food. le Fleur's deep belief in his Revelation, and his daily prayers, were the people's inspiration to continue. The community settled on a farm at Kranshoek, which they leased at first, and finally bought in 1957. The Reformer had died in 1941 (before the

[34] Oakes, Dougie (Editor): **Illustrated History of South Africa: The Real Story** *Reader's Digest*, Cape Town 1992

[35] *ibid*.

lease was negotiated), and is buried near Robberg, on the airport road.

In 1982, Storrar reported that there were approximately 200 Griqua families (1 000 people) living on 244 ha of land at Harkerville, with a further 90 families living at The Crags. These Crags-based families, in fact, represented a fourth trek - they had been brought to the Crags in 1971 from Vredendal in the Northern Cape, where a series of droughts had decimated the land. Most of the men who came here found work at the Kurland Timber Estates, where the owner of Kurland (Nicolas Behr) was able to convince the Divisional Council to build housing for them.

1935 The settlement at the Bay was proclaimed the Plettenberg Bay Local Area, and would no longer be known as the Village of Formosa.

1939 The woodcutters' rights to fell trees in the indigenous forest was cancelled. By now, the new exotic timber plantations had reached a useable size, and the authorities were becoming alarmed at the rapid deterioration in the condition and size of the indigenous forests. Many of the woodcutters had found work in the Department of Forestry, and by 1934 there were only 341 registered woodcutters left. Parliament pensioned off those woodcutters who were still working in this year through its Act on Annuities for Woodcutters. The forests remained closed until 1967, during which time management consisted of maintenance and filling-in with new trees.

With the rapid dwindling of the forest resource, the community at Covie were seriously affected. Some members found work in the Departments of Fisheries and Forestry, some took to share-cropping with neighbours, and some found work with local land-owners.

The Beacon Island was sold by the Government to Hugh Owen Bruce Grant. The old Whaling Station Manager's House had been used as a kind of boarding house since the mid 1920's (the exact date of establishment is unclear). In terms of the agreement between Grant and the Government, the existing buildings had to be demolished within 8 months of transfer, and a hotel and access cause way were to be built within 5 years. In fact, Grant completed the first Beacon Island Hotel in 1940. It subsequently changed hands at least six times, before the Southern Suns Hotels Group bought it and erected the present hotel in 1971.

1945 Robberg was officially declared a nature reserve (although it had always been reserved as 'public ground').

1950 The lighthouse at Robberg was completed. For more than 70 years officials had debated where (between Mossel Bay and Cape St Francis) a light house should be situated.

1954 The Signal Station (which had, for most of the first part of the twentieth century, been manned and maintained by the local priest, and which stood on Signal Hill) was finally closed - radio had made the use of visual signals all but redundant.

1956 The Group Areas Act was created. It divided the country into areas where the different race groups would be forced to live apart from one another, and was frequently used to remove entire communities from their established homes to new - often remote - areas which were considered 'appropriate' for those communities. These forced removals continued well into the 1980's.

1961 The Village Management Board was upgraded to a Town Council under its first Mayor,

Councillor 'Rowlie' Roderick

The *Viking* was wrecked on Lookout Rocks.

1962 A scheduled air service was introduced from the Plettenberg Bay airport on the gravel runway (that had been laid out in the 1940's by Owen Grant). By the early 1980's these facilities were to prove inadequate, and the runway was extended and paved, and the airport buildings were completed.

1963 The Chapel of St Andrew was proclaimed a National Monument. Storrar wrote in the 1982 edition of her ***Portrait of Plettenberg Bay*** that "*the chapel has been in use for a century and a quarter. Its future - as a church - is bleak, as all the* [coloured] *families who have in the main supported it, have been moved out of the Piesang Valley in terms of the Group Areas Act.*"

1964 The first scientific exploration of the ancient middens at Robberg began (it was undertaken by the Department of Archaeology at the University of Cape Town working with the Universities of Louvain, in Belgium, and Chicago in the USA, and lasted until 1971). The site chosen was the Nelson's Bay Cave. Up to now, the investigation into archaeological sites in the area had been haphazard, and often undertaken for commercial gain. Storrar wrote in 1982 that '*the Museum in Cape Town alone has nearly 50 skeletons from the Robberg area and a mass of other archaeological material, but unfortunately the crude methods of excavation ... employed* [prior to this first excavation}*, and the lack of important details of context and chronology, seriously detract from its scientific value*.'

The Tsitsikamma National Park was proclaimed on the 4th of December, 1964. It thus became the first maritime national park to be proclaimed on the Southern African sub-continent. At that time, it included 1 960 ha of land and 34 300 ha of ocean. In 1987, the de Vasselot Section (2 560 ha) of the Park was transferred to the National Parks Board (it had been proclaimed a Nature Reserve in 1974, and was originally managed by the Department of Environment Affairs). The Soetkraal Section was leased from Rand Mines in 1991 for a period of thirty years. It covers 24 372 ha of land, including some 20 000 ha in the Langkloof Mountains.

1965 St Peter's Church was sold to the Methodist Church for 7 000 pounds. They had first tried to buy it in 1961, with an offer of 3 860 pounds. The Roman Catholic Church had also made an offer during this time, but the ban on coloured worshippers remained a contentious issue, and they eventually withdrew their offer (the Catholic Bishop Hippel had written to say that the church could be consecrated immediately - if Cuthbert's widow, Alice, would make a concession towards desegregation. It seems that this might not have happened, as the Catholics withdrew their offer two years later).

1966 Construction began on the Roman Catholic Church of St. Christopher in the middle of the year, and it was opened in time for Christmas.

1967 The *Athina* was wrecked on the beach where Robberg meets the mainland (her hull is still discernible today).

1968 150 semi-detached houses were built for coloured housing in the New Horizons Township. There were no roads, and no electricity or running water (the Municipality installed a number of tanks which were filled daily by their water carts), and only a

bucket-system for toilets. The name New Horizons was given by Plettenberg Bay's Town Clerk. It was chosen without consultation with the people, and was seen as an insult because many coloured families had been living under better circumstances *before* they were forced to give up their homes and move there. The community soon set about fighting for improvements such as the provision of sewerage through a Management Committee (its first chairman was Michael Harker). Despite the Committee's perception that the Town Clerk was opposed to the improvements, the Formosa Primary School was built in 1969, the Theodora Educare Building in 1970 , and the Fiske Hall and St Mary's Church were built in 1974.

1973 The Save The Garden Route Committee was formed in Plettenberg Bay under the chairmanship of a Dr Roberts. The group were opposed to the proposal that the highway from Port Elizabeth to Cape Town should pass close by Plettenberg Bay. They would have preferred the road to be built further back - or possibly even through the Langkloof. They reasoned that the road would have an adverse effect on the estuaries that it would cross, as well as on the last of the Knysna elephants (at that time there were still 11 or 12 of the original herd remaining). Although the committee was well supported by environmentalist, scientists, landowners and the press, the Divisional Councils of Plettenberg Bay and Knysna supported the plan, and the government went ahead with the construction of the road that is now known as the N2.

1976 Country-wide dissatisfaction with the education system culminated in the *Soweto Uprising* on the 16th of June.

1978 The community at Covie had always been non-racial until, on 29 September 1978, it was proclaimed a coloured group area. As a result of the increasingly difficult Apartheid legislation of the 1960's and 1970's, the Covie Steering Committee (founded through the efforts of a Mr Brown of the Republican Party)had applied for the proclamation in order to protect the coloured people living there. Although they protested, 17 white land owners were served with expropriation orders, compensation was paid, and the land was passed on to the Community Development Council, who rented some of the plots to coloured people.

1980 The residents of Covie received notice that they would have to give up their rights and title to their communal ground, and a request for negotiations was made with the Community Development Council. The request was denied, and each land-owner was given a cheque for R50.00[36] and ordered to hand over their deeds of transfer, which their attorney advised them not to do. In 1974, the Tsitsikamma National Park boundaries had been proclaimed, which included a portion of the Covie Commonage. It had effectively cut the community off from the sea, which resulted in a running argument between the community and Parks Board officials. Shortly thereafter (in about 1976), the Department of Forestry had begun forcibly removing its workers to Coldstream (those who did not wish to move were threatened with their jobs, and there was a strong police presence at the removals)[37]. The Department said that it wanted the Covie communal land for plantations, but it was not until 1995 that it advertised its intentions to go ahead with planting. The people who had been affected by the removals, signed a petition against the plan, which was sent to SAFCOL.

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36 People who were affected claim that these cheques were never cashed.

37 By 1995, the Covie Township was home to only about 68 people, and had only the most basic of services - there was no electricity, running-water, sewerage or telephone.

1994 The country held its first democratic elections, which began on April 27. Nelson Mandela was installed as the country's first democratically elected president, and the Government of National Unity was formed.

Part 4
The Vegetation of The Garden Route

The Vegetation of The Garden Route

Portions of the following discussion are based on facts sheets supplied by the ***South Cape Herbarium*** *044 - 874 1558; e-mail* scherb@pixie.co.za

Flowers and Tourism?

Norman Myers, Visiting Fellow of the Green College, Oxford (in England) wrote in his foreword to the book ***Fynbos - South Africa's Unique Floral Kingdom***[38] that

> *"The Cape Fynbos is a wonder of the world. It makes up four-fifths of the Cape Floral Kingdom, which covers an area of less than 90 000 square kilometres - comparable with Malawi or Portugal - and hosts 8 600 plant species, 5 800 of which are endemic*[39]*. To put this in perspective, the British Isles - three and a half times larger, have only 1 500 plants, fewer than 20 of which are endemic. The whole of tropical Africa harbours 30 000 plant species in almost 20 million square kilometres - or only 3.5 times as many species in an area 235 times as large. Still more remarkable is the Cape Peninsula with its 2 285 plant species in an expanse smaller than that of London. Table Mountain alone has more than 1500 species in 57 square kilometres. So super-special is the Cape Floral Kingdom that it has been designated one of the earth's six plant kingdoms, putting it on a par with the Boreal Kingdom, which covers 50 million square kilometres.*
>
> *"Yet this extravagance of life's diversity is little known outside South Africa..."*

In the introduction to its ***Business Plan for 1997/8***[40]**,** the Knysna Tourism Bureau quoted SATOUR figures which show that 30% of all visitors to this country are attracted by its scenic beauty, and 30% by its wildlife. They also showed that foreign visitors to this country spent *the largest part of their visit in the Western Cape*[41]. What is the attraction to this area that causes them to do this? Undoubtedly the scenic beauty of the Cape. You may say - "So what? There is scenic beauty all over South Africa." True, but the beauty of the Western Cape is unique - and the flora - the plant life of the area - is *largely what makes this so*.

Although the beauty of the Cape Flora is one of our greatest assets[42], it is still a largely untapped resource. It has therefore become vitally important that this

[38]Cowling, R & Richardson, D: **Fynbos - South Africa's Unique Floral Kingdom**. *Fernwood Press*, Vlaeberg (Cape Town), 1995

[39]Plants ***Endemic*** to the Cape are found in their natural state only in the Cape, and no-where else in the wold.

[40]Executive Committee of the Knysna Tourism Bureau: **Knysna Tourism Bureau Business Plan 1997/98 - Towards a Tourism Strategy For Knysna**; *Knysna Tourism Bureau*, Knysna, 1997

[41]In 1995, foreign visitors stayed an average of 19 days in South Africa, of which 12.3 nights were spent in the Western Cape - 8.8 nights in Cape Town, 1.7 nights in the Garden Route, and 1.8 nights elsewhere in the Province.

[42]The Cape's flora is not only an asset for tourism. Other industries - such as horticulture - benefit from it as well. It has been said that, around the world, the flowers of the Cape earn more for *other countries* than gold has ever earned for South Africa. This is a quirk of history: the beauty and value of many of our endemic plants (such as geraniums, nerines, gladiolus and even proteas) was recognised by early horticulturists and botanists. The plants were sent back to Europe (largely to Holland, France and Britain), where they became - and still are - a mainstay of the enormous international horticultural industry. They are extensively cultivated for cut flowers, and for the gardening, cosmetics and other industries.

"extravagance of life's diversity" should be preserved not only for its self, but also as an asset to the country's economy as a whole. If it is well managed, there can be no doubt that the presence of the Cape Floral Kingdom can provide sustainable opportunities for community development in tourism and in other industries as well.

The Six Floral Kingdoms of the World

Botanists have divided the world's terrestrial fauna (i.e. plants that grow on the land - as opposed to those in the sea) into six broad regions, which they have termed plant - or floral - kingdoms. Many factors (such as climate and geology) go towards making each one unique in it own way, and these have had a marked influence on the development of the unique flora of each kingdom.

These are the six floral kingdoms of the world:

[1] the ***Boreal Kingdom*** (also sometimes called the *Holarctic* or *Northern Kingdom*), which includes most of the northern hemisphere - North America, Eurasia, Greenland, and the northernmost parts of Africa. The Boreal Kingdom covers about 42% of the Earth's land surface.;

[2] the ***Palaeotropical Kingdom***, which includes India, Southern China, Indonesia and the South Sea Islands and almost all of sub-Saharan Africa. This Kingdom covers about 35% of the Earth's land surface

[3] the ***Neotropical Kingdom***, which includes Central America and most of South America. The Neotropical Kingdom covers about 14% of the Earth's land surface;

[4] the ***Australian Kingdom***, which includes all of Australia and Tasmania. The Australian Kingdom covers about 8% of the Earth's land surface;

[5] the ***Patagonian Kingdom*** (also sometimes called the Antarctic Kingdom), which includes Antarctica, New Zealand, and, on the South American continent, Chile and Patagonia. The Patagonian Kingdom covers about 1% of the Earth's land surface; and

[6] the ***Cape Floral Kingdom*** (also sometimes called the South African Kingdom or the ***Fynbos Biome***), which includes only a clearly defined geographical region within the southern part of South Africa. ***The Cape Floral Kingdom covers only about* 0.4% *of the Earth's land surface***.

The Cape Floral Kingdom

The Cape Floral Kingdom covers an area of about 90 000 km^2 around the Southern tip of Africa. It stretches along the Cape Coast from Vanrhynsdorp in the west, round the Cape Peninsula, and eastwards to Port Elizabeth and Grahamstown. The inland boundaries are the Cape Fold Mountains: the Witteberg, Swartberg and Baviaansberg along the Indian Ocean Seaboard, and the Hex River Mountains, Cederberg and Koue Bokkeveld on the Atlantic Ocean Seaboard. It is not only the world's smallest floral kingdom - it is also *the only floral kingdom that is entirely contained within the borders of one country.*

Like the other plant kingdoms, the Cape Floral Kingdom is made up of a collection of ***biomes*** - or plant communities. The plants that grow in each biome are closely linked to its soil type and climate. In the Cape Floral Kingdom, these communities include the fynbos, the strandveld (or fynbos/ thicket mosaic) and the renosterveld. Patches of Afromontane forest and Succulent Karoo fall within the geographical area of the Cape Floral Kingdom.

Of the 8 600 plant species found in the Cape Floral Kingdom, Cole[43] states that 68% are endemic (found growing naturally here and nowhere else).

[43]Cole, N: **The Cape Floral Kingdom** (Fact Sheet 4/1998/1); *South Cape Herbarium*, George, 1988

Climate
The climate of the area is predominantly Mediterranean - much of the area has most of its rain during the Winter months, except for the small portion between George and Tsitsikamma, which receives rain throughout the year. The rainfall pattern within the region (like that of the soils) is a determining factor in the character of the plant communities.

Geology and Soils
The sandy soils which predominate in the area are derived largely from the Table Mountain Sandstones that are its main geological formations. These soils are generally poor in nutrients, and it is generally well known that the soils that are linked to the fynbos offer poor grazing and have limited value to traditional, western agricultural pursuits.

The soils in the valleys are typically less sandy, with a higher clay content, and confined patches of shale, granite and limestone have a definite influence on the make-up of the soils in localise areas within the region.

As we have seen, the soil-type is a determining factor for the character of the plant community that grows on it.

The Fynbos Biome

Fynbos
It is important to understand that the word ***fynbos***[44] ***refers to a broad collection of different plants (a vegetation type*** or ***plant community***) and *not to any one species or family of plant*s. The plants referred to as fynbos make up about 80% of the species in the Cape Floral Kingdom, and a great variety of plants may grow within a small space (up to 121 species of plants have been counted in an area of 100 square metres). The general appearance of fynbos is of a shrubby, fine-leaved plant community - there are usually no trees to be seen in a pure stand of fynbos and, if trees are present, they can be considered as invaders.

The four forms of vegetation that scientists consider to be the characteristic plants of the fynbos are:

the ***proteoids*** - which are often the taller plants of the fynbos - are generally between 1 and 3 metres in height and have large, leathery leaves. They include all members of the *Protea* family, such as *Protea* (suikerbos), *Leucadendron* (geelbos) and *Leucospermum (*pincushion);

the ***ericoids*** - which are the heath-like plants, and include about 3 000 species, such as the family *Ericaceae* (the heaths), and *Agathosma* (buchu);

the ***restioids*** - which resemble reeds, and include all 310 members of the family *Restionaceae*. This family is a closely linked to the grasses, and includes the thatching reeds - dekriete; and

the ***geophytes*** - which are the bulbous plants, and include the *Gladiolus* (afrikaners) or aandblomme), and the ground orchids *Disa* (moederkappies). With about 1400 species of geophytes recognised, the fynbos has the *largest*

[44]**Fynbos** - The term probably came from the Dutch "fijnbosch", and has been used for centuries to describe the vegetation of the Cape. It could have one of two derivations:
[a] it may originally have referred to the predominance of fine-leaved (*fijn*) shrubs in the area, or
[b] it may originally have referred to the small, thin-stemmed trees of the few forests that were found on Table Mountain when the Dutch first colonised the Cape. The thin-stemmed trees of those forests - "fijnbosch" - were too slender to be suitable for harvesting as timber.

concentration of indigenous geophytes of any area in the entire world. Many of these plants are not seen during the summer months because their leaves die back after flowering, and the bulbs are dormant during these drier periods of the year.

Three major physical factors define the areas in which fynbos can grow:

[a] where summer is dryer and windier than winter. Although this is truer in the western part of the region than in the east, the highest rainfall remains confined to the winter months. Fynbos grows where there is a minimum average annual rainfall of 600 mm;

[b] where the soils are poor in nutrients[45]

[c] where fire is a regular occurrence. Fires, like the large mammals of the veld or destructive hurricanes of the tropics, are the 'cleaners' that ensure that the natural cycle of growth, degeneration and decay can continue. Without the influence of man, fynbos will burn once every 5 to 40 years, with an average of 12 to 14 years between fires (these 'natural' fires are usually started by lightening or rock falls). The evolution of many of the species of the fynbos has been a response to the regular fires that sweep through the area. The proteas, for instance, will only release their seeds once their cones have been subjected to fire.

In his description of the veld types of Southern Africa, Acocks[46] shows that the fynbos can be further divided into three distinct types:

[a] ***Mountain fynbos*** or ***false fynbos*** (veld type 70)[47];

[b] ***Fynbos*** (veld type 69); and

[c] ***Coastal fynbos*** (veld type 47).

Fynbos and Mountain Fynbos

The fynbos and mountain fynbos is found from the foothills at sea-level to the peaks at 2 250 metres. It grows on grey, sandy soils that are sour and leached of nutrients by the predominantly high rainfall (in places as much as 3 300 mm per year).

Coastal Fynbos

The coastal fynbos is found from sea-level to about 150 metres above sea-level. Many of the characteristics of this area can be attributed to changes in the coastline during the ice ages (the level of the coast is now some 120 metres below its former level). The soil is a deep, greyish sand that is slightly alkaline to sour.

The Economic Importance of Fynbos

van Rensburg[48] states that "*The most important economic assets of the fynbos areas are without doubt the provision of water and fynbos products such as tea, flowers and buchu, the opportunities they offer for outdoor recreation, and their value as reserves for scientific*

[45]Much of the fynbos probably survived because agriculturists could not utilise the poor quality soil. Technology has only recently made fertilisation - and thus the use - of these areas viable for agriculture.

[46]Acocks, JPH: **Veld Types Of South Africa** - Memoirs of the Botanical Survey of South Africa No. 57: *Botanical Research Institute of the Department of Agriculture and Water Supply*, Pretoria, 1988.

[47] Acocks states that most of the mountain fynbos "*is today indistinguishable from the true fynbos",* and so, for the purposes of this discussion, the fynbos and mountain fynbos will be considered together.

[48]van Rensburg, TFJ: **An Introduction to Fynbos;** Bulletin No. 61: *The Department of Environment Affairs* (undated).

research."

In our water-poor country, the fact that fynbos grows in areas of high rainfall and on poor soils should be sufficient reason for its conservation. Studies have shown that, in a well-managed fynbos area, water run-off after rainfall can be as high as 63% to 85%, whereas only about 9% of the water that falls on grassveld (or savannah) reaches the streams. The Fynbos also uses less water than exotic tree plantations and agricultural crops under irrigation. Where the fynbos is well managed, with adequate intervals between fires, the quality of run-off water is better (clearer, with less sediment) than in areas where fires are more frequent.

The fynbos provides a large, modern and growing industry with many species of plants that can be used in the fresh and dried cut-flower markets. These include the proteas, ericas, restios and everlastings (*Helichrysum spp.*), many of which are now cultivated rather than collected in the wild (this practice has saved a number of species from extinction).

Rooibos tea (from the rooibos - *Aspalathus linearis*) and honey tea (*Cyclopia spp.*) are typically South African products, which come from plants that are endemic to the fynbos. The species are now cultivated commercially.

Buchu (*Agathosma spp.*) and other fynbos plants are harvested for their essential oils, which are used in the cosmetics and medicines industries. The buchu oil is used as a base for perfumes, and its use in traditional medicine (for example in buchu brandy) is well known. Many of these plants are also now cultivated commercially.

The great variety of plants, and the beauty and variety of the areas in which they grow, makes the fynbos an ideal destination for local and foreign visitors alike. Some of the recreation opportunities that van Rensburg lists include camping, hiking, picnicking, rock-climbing, swimming, quiet contemplation, nature studies, painting, photography, hang-gliding and rallying. Many of these pursuits could - and have - become business opportunities: people who can combine knowledge of the fynbos with experience of the pastime could be in an ideal position to set up tours and create tourism products in many parts of the Southern Cape.

These sustainable industries, which are all closely linked to the fynbos, provide many jobs, and *create many more employment opportunities* for the communities of the Southern Cape.

Renosterveld

The renosterveld (which Acocks called *coastal renosterbosveld* - veld-type 46) is a component of the fynbos biome, but, while it resembles the fynbos in some ways, it has many different characteristics.

Renosterveld grows in lowland areas of the region which have these important physical characteristics:

[a] the annual rainfall is higher than 250mm, but less than 600 mm per year, and;

[b] the soil is richer, more fertile, and with a higher clay content than those characteristic of the fynbos.

Characteristically, the Renosterveld ***lacks the restioids*** found in the fynbos, and the ***occurrence of the proteoids is rare***. The name comes from that of the renosterbos (*Elytropappus rhinocerotis*) which is a fine-leaved evergreen, dull, greyish blue in colour, that is characteristic. Also common are the grasses (*Poaceae*), the daisies (*Asteraceae*), and the geophytes. As with the fynbos, trees are rare in the renosterveld, and fire is a frequent - and necessary - occurrence.

The variety of species growing in one area is not usually as great as in the fynbos: in Riversdale, 110 species were found within 6 822 m^2 of renosterveld (compared with 121 species within 100 m^2 in the fynbos).

Because it grows on the richer soils of the area, much of the renosterveld has been destroyed to make way for farming - particularly of wheat. Between 60 and 70% of the original 20 000 square kilometres of renosterveld has disappeared.

Strandveld

The strandveld (veld-type 34) is called *fynbos/thicket mosaic* by some authors, because it resembles a mosaic - or patchwork - of fynbos interspersed with thickets - or forests- of low-growing sub-tropical trees and shrubs. Where fynbos is present, it is dominated by the dekriette (*Restionaceae*), and daisies (*Asteraceae*). The predominantly evergreen shrubs and trees of the sub-tropical thicket include *Rhus glauca* (taaibos) *Sideroxylon inerme* (white milkwood), *Pterocelastrus tricuspidatus* (candlewood),etc. Other typical plants of the strandveld include *Metalasia muricata* (gonna) *Passerina spp.* (Blombos), and a large variety of succulents and vygies.

Strandveld usually grows on soils that are sandy, reddish in colour, and neutral to alkaline, which are associated with sandy plains and dunes, and low-lying limestone and granite ridges. It is generally confined to altitudes below 150 metres, and receives between 200 and 300 mm of rain annually.

The thicket species of the strandveld are not specially adapted to fire, and will generally only burn if the weather has been particularly hot and dry for a long period before the fire. Only mature plants of the thicket species are resistant to fire, and the seedlings quickly succumb (it is because the seedlings must mature before they can resist fires, that the thicket prefers to grow in nutrient-rich, fire free areas). Unlike fynbos plants, their seeds are usually dispersed by birds.

Importantly, the foliage of the thicket species is relatively nutritious for grazing. The larger mammals that once inhabited the Southern Cape - such as elephant and black rhinoceros - would have browsed heavily on this group of plants.

The Afromontane Forests[49]

The Afromontane (meaning *African mountain*) forest is a plant community (biome) that does not strictly fall within the description of the Cape Floral Kingdom. It is, however, included in this discussion not only because it is an important part of the vegetation of the Southern Cape - and particularly of the Garden Route - but also because of its importance for tourism.

The forest is characterised by trees such as the yellowwoods (*Podocarpus spp.*) - which can often be seen growing well above the other species - stinkwood (*Occotea bullata*), white pear (*Appodytes dimidiata* subsp. *dimidiata*), terblans beech (*Faurea macnaughtonii*), and assegai (*Curtisia dentata*). The forest can be further divided into different types, which follow the general rule-of-thumb that there is a greater diversity of species in the lower altitude forests than in those of the higher altitudes (this is also true for younger stands of forest, which generally have more species than the older forests).

The Afromontane forests are usually found at altitudes below 1 000 metres, in areas that are protected from wind and fire, and in soils that are deeper, more fertile, and more able to retain their moisture, than those characteristic of the fynbos. Annual rainfall in these areas is more than 625mm. These forests are generally not damaged by the periodic fires - partly because of the higher rainfall, but also because their leaves and woody parts are more resilient than those of the fynbos plants.

These forests occur in most of the mountains along Africa's Indian Ocean seaboard, in a patchwork of small, relatively isolated areas, or "forest islands". The important tree

[49]For an extensive checklist of the trees of the Afromontane forests, see Section 5 of this Handbook.

species are common to all of these "islands" throughout the range (there are only about 0.5 million hectares of indigenous forest in the whole of South Africa - covering about 0.5% of the total land mass).

The largest continuous example of afromontane forest in South Africa - and therefore the most important within the Cape Floral Kingdom - is the Knysna Forest, which covers an area of just less than 60 000 hectares between George and Tsitsikamma.

There is a common misconception that the forests of the Garden Route once covered most of the landscape in this area. This is incorrect. Before man began to have an impact on this area, the Afromontane forests, fynbos and strandveld would have formed a patchwork across the region that would have been influenced only by the suitability of any one area to support a particular vegetation type.

Forests and the Economy

The forests of the Garden Route provide employment for many people in the region, and are therefore an important part of its economy.

The forests and their management and exploitation provide employment to, amongst others, the following people:

- Management and conservation personnel: the scientists, forest officers and labourers who are responsible for the well-being and maintenance of the forests, as well as for harvesting the small quantities of wood that are made available to the furniture and curios industries;
- Furniture and curio industry personnel who manufacture and sell curios: cabinet makers, saw millers, sculptors, and salespeople who bring the finished product to the public;
- Equipment and tool manufacturers, suppliers and maintainers, who provide their goods and services to the timber and furniture industries;
- Tourism trade personnel: tour guides, hotel staff, transport industry personnel and others who are involved in bringing visitors to the forests, etc.

The knock-on effect of this trickles down throughout the economy to, for example, the shops that supply goods and services to people who earn their money n the above mentioned industries.

Recreation in the Forests

The state-managed indigenous forests of the Garden Route offer facilities for a wide range of pursuits such as camping, walking hiking, mountain biking, horse riding, picnicking, angling, scenic drives, bird-watching, and quiet contemplation. In addition, the Forestry department offers education facilities at a youth centre at Harkerville forest. As with the fynbos, the presence of the forests could provide opportunities for knowledgeable people to create employment for themselves - and others - by creating tourism products that will enhance the tourist's visit to this area, without placing undue strain on the resource.

The Succulent Karoo

Like the Afromontane forest, the geographical boundaries of the succulent Karoo extend beyond those of the Cape Floral Kingdom. It is nevertheless an important veld type of the Southern Cape, although it is not well represented in the Garden Route.

About 5 000 plant species live within this broken, crescent-shaped area of 100 251 square kilometres that lies just behind the mountains on our western and southern seaboards between Numees in the north-west and Steytlerville to the east.

The typical vegetation of this area reflects the dry conditions that prevail: average rainfall is between 20 and 290 mm per year, 40% of which falls in winter. The vegetation

is typically sparse and low-growing, and is dominated by a family of plants which have succulent leaves called the ***Mesembryanthemaceae*** - the vygies. This is the largest single family of plants in South Africa, with a total of over 2 000 species.

The soils of the succulent Karoo are richer than the fynbos, and are derived from fine-grained sedimentary rocks. The typical geology of the area is dominated by volcanic (*igneous*) rock.

In terms of its diversity and importance as a floral resource, the succulent Karoo is matched only by the fynbos. It has the highest number of plant species (and the highest number of succulent species) of any semi-arid area in the world. Like the fynbos, it has many geophytes (bulbous plants), which contributes to the spectacular annual displays of flowers during spring in the Namaqualand area.

Of a total of 5000 species, over 1 000 plants of the succulent Karoo are classified as rare or endangered. This can largely be attributed to poor farming practices, including over-grazing. Like the fynbos, the succulent Karoo can, and does, provide many sustainable employment opportunities in the tourism sector. The conservation of its unique flora, both for its own sake and for the sake of sustainable community development, should thus be seen as a priority

Plantation Forestry.

Because South Africa is poor in natural forest, it has become necessary to farm with trees in order to supply our timber, pulp and paper needs. The South African Forestry industry claims to plant 90 million trees a year, in a plantation area of nearly 1.5 million hectares - or 1.2% of the country's total land mass. In the Western Cape, forest plantations account for about 83 280 hectares, or 5.6% of the country's total[50].

The principle species of plantation forests are exotic trees (those which came originally from other countries). In the Southern Cape, the following are cultivated:

The softwoods (used for timber and pulp)

Pinus radiata - the Monterey pine

Pinus pinasater

The hardwoods (used for pulp, telegraph poles and mining timber)

Eucalyptus spp. - the gum trees.

Forest plantations can only be created once a permit has been issued by the Minister. Also, forest plantations may not utilise more than 70% of their sites - the balance of the ground must be set aside for preservation of the environment. These are legal safe-guards to prevent the creation of plantations in areas which might be environmentally sensitive.

The forest plantation industry provides employment for many thousands of people throughout the country, and the industry is actively involved in community development programmes.

Invader Plants

Some plants which are foreign to this country have become pests which are threatening our indigenous vegetation, and our water supply. The consequences of not controlling these weeds could create enormous problems such as a dwindling water supply, the danger of run-away fires, and the destruction of natural habitat that is of value to tourism.

In the introduction to his book, Bromilow[51] says that a weed is "*a plant that is in the wrong place at the wrong time... Plants that become weeds are usually vigorous growers, making them compete for water, light, space and nutrients ... they are adaptable ... most of*

[50]The largest timber production provinces are Mpumalanga Province - which has the country's largest plantations - about 614 880 hectares(41.4% of the total), and KwaZulu-Natal has 557 375 hectares (37.5%)

[51]Bromilow, C: **Problem Plants of South Africa**: *Briza Publications*, Arcadia (Pretoria) 1995

them are exotic or foreign in origin ... they are easily spread... The most frustrating characteristic is that ... they are difficult to control"

The weeds that are perhaps best known in the Southern Cape are the hakeas and Australian wattles, which have invaded large tracts of land in this area:

Hakea spp. (hakea or naaldbos)- these shrubs or small trees have thin, hairy, lance-like leaves and woody, egg-shaped fruits. They pose a threat to the natural vegetation - particularly the fynbos. Fires in stands of hakea tend to burn at higher temperatures than is favourable for fynbos;

Acacia mearnsii (black wattle or swartwattel) - this tree is well-known for its thick bunches of sweet-smelling yellow flowers. It was originally imported - and is still grown - for use in the tannin industry. It has, however, thickly infested much of the country, and is a serious threat to our water resources. The ***Working for Water Project*** aims to eradicate the wattle from areas where this is the case;

Acacia saligna (Port Jackson willow or goudwilger) - this long-leaved wattle is a particular problem on sand dunes and along the river banks of the South-Western Cape. No indigenous vegetation can survive amongst the thick, impenetrable stands of Port Jackson;

Acacia cyclops (rooikrans) - this tree quickly forms impenetrable stands which prevent the growth of indigenous flora. It is an invader in the fynbos as well as the succulent Karroo and even the forests of this area.

Only constant vigilance on the part of all the citizens of the country will prevent these plants from destroying our natural heritage.

Part 5
Checklist of Trees of The Garden Route

Checklist of Trees of The Garden Route

Listed below are some of the more important trees that grow in the indigenous forests around Knysna, together with a description of some of their uses. The numbers on the list refer to the National List of Trees, and are a useful identification aid. Numbers have been placed on many trees along the forest walks.

Do not be frightened by the (mostly Latin) botanical names: they are given to plants (and animals) in order to prevent confusion created when the common (i.e. not Latin) names are translated from one language into another. If you would like a full description of the botanical names of trees on this list, see F von Breitenbach's book *Southern Cape Forest and Trees*.

2 ***Cyathea capensis***

Tree fern
Bosboomvaring
isiHihi

Although this plant is classified as a tree, it does not produce useable wood.

16 ***Podocarpus falcatus***

Outeniqua Yellowwood
Kalander
umKhoba

The `big tree' in the forests.

The timber was used in the past for shipbuilding (for masts), and is still sought after in the building trade (for beams and floors - especially in restoration of old buildings) and for furniture making.

18 ***Podocarpus latifolius***

Real Yellowwood
Opregtegeelhout
umCheya

This was the first yellowwood discovered at the Cape by the early colonists. Its timber was used more often than that of the kalander (it was only after the discovery of the Kalander that the word `real' was added to the common name of this species).

The timber was, and still is, sought after for beams and floors in building (many of the old Cape Dutch houses had yellowwood floors), and for furniture. It was also used for railway sleepers.

Telling the difference between the two yellowwood species in the forests is easy: look at the bark for your first clue. The kalander's peels off in ragged blocks, while that of the real yellowwood peels off in narrow vertical strips. The real yellowwood also has longer, broader leaves (the word *latifolius* in the botanical name means `broad-leaved').

32 ***Strelitzia alba***

Wild banana
Wildepiesang

This large, white-flowered relative of the common crane flower gave its name to the

Piesang River near Plettenberg Bay (this species is not related to the banana plant - the name comes from its superficial resemblance to the banana plant).

38 ***Myrica serrata***

Mountain Waxberry
Bergwasbessie
uMakhuthula

The leaves, stems and bark produce an oil when they are boiled in water. In earlier times this used to be skimmed off and used as wax.

39 ***Celtis africana***

White Stinkwood
Witstinkhout
umVumvu

The white stinkwood is not botanically related to the real stinkwood in any way. The name of both trees, however, comes from the unpleasant smell that both give off when they are cut.

The white stinkwood has white to yellowish coloured wood. Although it takes a good finish, it is hard and difficult to work. It is suitable for making tool handles, bentwood furniture, etc.

50 ***Ficus capensis***

Wild fig
Wildevyeboom
umKhiwane

The light, soft wood is used for making drums, and was used for making break shoes on ox wagons. The figs can be used for jam, although they have a very light taste.

In traditional medicine the milky sap is used for treating burns and conjunctivitis, and an infusion of the leaves and bark is fed to cows that produce too little milk.

74 ***Faurea macnaughtonii***

Terblans
umKhubane

The hard, brown or dark red wood is beautifully grained but it is in very scarce supply.

118 ***Occotea bullata***

Stinkwood
Stinkhout
umNukani

The hard, heavy (but easily worked) wood ranges in colour from golden through brown to almost black. It is one of the most expensive and highly prized timbers in the world, and has become a symbol of old Cape culture and Voortrekker tradition.

Stinkwood was in such great demand in the Cape Colony that the Knysna forests had become seriously depleted of accessible specimens by 1812. This was one of the reasons for the complete removal (in 1939) of woodcutters rights to fell timber. From 1939 until 1967 no indigenous woods were cut in state-owned forests. Because of the encouraging regeneration of the species that was brought about by this rest period, very strictly controlled cutting is now allowed. The small quantities of timber

available are used in the fine furniture and curio industries.

139 ***Pittosporum viridiflorum***

White Cape Beech
Witboekenhout
umKhwenkwe

The wood is of little commercial value. The bark is used in traditional medicine for treating stomach complaints and for red water in cattle.

140 ***Cunonia capensis***

Red Alder
Rooi-els
umQashube

The wood is a rich red to light brown in colour, with white flecks. It is a good furniture wood, is straight grained, even-textured and easy to work.

141 ***Platylophus trifoliatus***

White Alder
Witels

The wood is sought after for boat-building, furniture and fine veneers. It is generally a pinkish-brown colour, although it can vary from yellowish to dark brown, and gnarled trunks may produce a bird's-eye grain. It is even textured and medium-hard.

A very important honey tree when in flower.

142 ***Trichocladus crinitus***

Witch-hazel
Onderbos
iThambo

This tree is the dominant under-growth species in the forests. The wood is hard and white (the Xhosa name means `a bone') but the tree is too small to produce useable-sized timber.

147 ***Prunus africana***

Red Stinkwood
Rooistinkhout
iNyazangoma

This tree has a strong smell of cyanide when cut. The cured timber is a rich red to mahogany colour, strong and very hard and heavy. It is used for cabinet making and face veneers. Its use is limited, however, because it tends to split and twist.

221 ***Virgilia oroboides***

Keurboom

This pretty, delicate-looking small tree gave its name to the Keurbooms river. The soft, whitish timber has no real commercial value.

254 ***Fagara davyi***

Knobwood
Perdepram
umLungamabele

The hard, heavy, straight grained wood is strong and elastic and is suitable for tool

handles, walking sticks and fishing rods.

256 ***Calodendrum capense***

Cape chestnut
Wildekastaiing
umBhaba

The trees are unmistakable when they are in full bloom because of their large bunches of pink flowers which often cover the whole crown.

The wood is light yellow, strong and tough. It is used for furniture and tool handles.

261 ***Vepris undulata***

White ironwood
Witysterhout
umZane

The white, hard, strong and elastic wood has been used for making tool handles, for turning and for masts and spars on sailing ships.

Powder made from the roots is used in the treatment of influenza.

298 ***Ekebergia capensis***

Cape ash
Essenhout
umGwenya-wezinja

The wood is light and even-textured. It is used for furniture. The bark is used as an emetic, in treating dyssentry and in tanning. The roots are used for treating headaches, and the leaves for the treatment of intestinal worms.

380 ***Rhus chirindensis***

Red currant
Bostaaibos
umHlakothi

The wood is fine-textured, strong and heavy. The sapwood is yellow and the heartwood is red. In earlier times it was used for wagon building, flooring and furniture. It is suitable for making veneers.

397 ***Ilex mitis***

Cape Holly
Without
umDuma

The medium-hard, medium heavy wood used to be used for heels for ladies' shoes. It is whitish and close-grained and can be used for furniture.

The fresh leaves can be rubbed together in water to produce a lather, which the early woodcutters may have used for bathing. The bark is used as a purgative and for treatment of colic in children.

398 ***Maytenus acuminata***

Silky bark
Sybas
umNama

This tree has a hard, heavy, close-grained pinkish wood that is suitable for cabinet

making and turning.

399 ***Maytenus heterophylla***

Spike thorn
Pendoring
umQaqoba

This small tree was the `kamanassi' of the old Khoisan people and gave its name to the Kamanassi Mountains and Kamanassi River.

401 ***Maytenus peduncularis***

Indigenous blackwood
Inheemseswarthout
umNqai

This species is not related to the Australian blackwood (*Acacia melanoxylon*) which was imported as a plantation timber in earlier times (and has, to some extent, invaded the forests). The indigenous blackwood has tough, elastic, very hard and very heavy, grey to black heartwood which is suitable for heavy tool handles.

409 ***Pterocelastrus tricuspidatus***

Candlewood
Kershout
uGobandlovu

This tree has been known in English as `cherry wood'. This was based on a mistranslation from the Afrikaans. Kershout means candlewood: *kersie*hout would be cherry wood. Nevertheless it makes good fuel, and the early colonists used the branches and roots, which contain an inflammable resin, as torches.

The dark red to mahogany brown wood has a fine grain and is very hard and heavy. It is used for flooring, tool handles and veneers.

410 ***Cassine aethiopica***

Cape Cherry
Kooboebessie
umBovane

The sweet fruits of this tree are edible. The wood is occasionally used for knobkerries, tool handles and fuel.

414 ***Cassine peragua***

Bastard saffron
Bastersaffraan
iKhukhuzi

The leaves of this tree are said to be poisonous. The hard, reddish-brown wood is only used for fuel (although it was used in the late seventeenth century for making ladles)

415 ***Cassine papillosa***

Saffron
Saffraan
umBovane

The brown wood is strong, hard and heavy, and is used in turning and cabinet making. This species is said (by von Breitenbach) to produce the best wood for braai fires.

422 ***Apodytes dimidiata***

White Pear
Witpeer
umDakane

The wood is white to yellow, pale brown or pink. It is strong, elastic, hard and heavy, and was at one time highly sought after for wagon-making. Today it is used for fine furniture, turning, tool handles and rifle butts.

452 ***Rhamnus prinoides***

Dogwood
Blinkblaar
umGlindi

A small tree which many people used as a protective charm against lightening, and to safeguard homes and the courts of the chiefs. The root is used to purify the blood and to treat pneumonia, and the leaves to relieve sprains and to bring luck to members of hunting parties.

457 ***Sparrmannia africana***

Stock rose
Stokroos

This tall shrub was once grown commercially for its fibre, which was sold as *African Hemp*. The experiment ended because of the indifferent quality of the product.

463 ***Grewia occidentalis***

Dewberry
Kruisbessie
umNqabaza

The wood is used by the Xhosa for making assegais and by the San for bows. In traditional medicine the bark is used in wound dressings. The plant is also used to help ease childbirth, and to cure impotence and barrenness.

479 ***Ochna arborea***

Cape Plane
Rooihout
umThentsema

The hard and strong wood is reddish-brown in colour and has been used for tool handles and walking sticks. The wood is used to drive away evil spirits from homes and cattle kraals and the bark is used in tanning and for treating headaches.

494 ***Kiggelaria africana***

Wild Peach
Wildeperske
Idungamuzi

The pink wood is fine and even-textured, medium-hard and medium-heavy. It was once in demand for wagon-wheel spokes. Used in traditional medicine to protect the kraal, and in industry for extracting a pink dye and hydrocyanic acid.

496 ***Scolopia mundii***

Red Pear

Rooipeer
iQumza

The wood is pale brown but somewhat darker in colour than that of the white pear (*Apodytes dimidiata*), and is hard and heavy. It was once in such demand for wagon making that very few large specimens are left today.

498 ***Scolopia zeyheri***

Thorn Pear
Wolwedoring
iQumza elinameva

The wood is very heavy and hard to work, and is seldom used. The name *Wolwedoring* refers to the strong thorny branches, and their usefulness in making fences to keep hyenas out of cattle kraals.

503 ***Trimeria grandiflora***

Wild Mulberry
Wildemoerbei
umNqabane

The wood, which was formerly used in wagon-building, is very rarely available in log size today. The leaf of this tree looks a little like that of the edible mulberry (*Morus alba*), but the fruit (which occurs only on the female plant) is a small, brown, dry capsule. This is probably the tree which excited Henry Barrington to initiate the immigration of the Italian silk spinners (see 1881 in the *History of Knysna*).

513 ***Olinia ventosa***

Hard Pear
Hardepeer
iNqudu

The wood is yellow to pale greyish-brown, close-grained, strong, hard, heavy and durable. It has been used for fencing and telegraph poles, in wagon building, and is suitable for flooring and paneling.

520 ***Passerina falcifolia***

Gonna Bush
Gonnabos

This tall shrub is named after the `Gonna Bushmen': small, wandering tribes or families of impoverished Khoi people who made rope from the fibrous bark of the Gonna bush for sale to the early colonists.

570 ***Curtisia dentata***

Assegai
Assegaai
umGxina

The wood is hard and heavy, dull red to pink and straight grained. Although it tends to split when it is seasoned, assegai wood was found to be ideal for making spokes and other parts for wagons. Because of this, large specimens are now rare.

The common name is a reference to the spear-like shape of the leaves: the wood has not been recorded as having been used for making assegais.

578 ***Rapanea melanophloeos***

Cape Beech
Boekenhout
isiQwane sehlathi

The common name comes from the strong resemblance between the timber of this species and that of the European Beech (*Fagus sylvatica*). It is light brown with a silky grain, quite hard and heavy and very durable, but easy to work. It is used in construction, furniture, paneling, flooring and violin-making, and was formerly used in wagon building.

In traditional medicine, the bark was used as an expectorant and emetic.

579 ***Sideroxylon inerme***

Milkwood
Melkhout
umQwashu

The wood is yellow, strong, very hard and very durable. It was formerly used in boat building, but the species is now protected and cutting is not allowed.

Three specimens of the Milkwood have been declared national monuments in South Africa: the `Treaty Tree' in Woodstock, near Cape Town (where the Cape was handed over to the British after the Battle of Blaauberg in 1806); the `Fingo Milkwood Tree', near Pedie in the Eastern Cape (where the Fingo People swore allegiance to the British king after English soldiers led them to safety from attack by Chief Hintza); and the `Post Office Tree' in Mossel Bay. This most famous of Milkwood trees is said to have been used as a `letter box' by the old Portuguese mariners who rounded the Cape en route for India. In 1500, Captain Pedro d'Ataide addressed a letter to Commander Jao da Nova and left it in an old shoe attached to the tree. It told how the famous explorer Bartholomew Dias and his ship had been lost at sea. d'Ataide's ship had been part of the fleet which had sailed with Pedro Alvares Cabral (who, on his way to India in 1499, become lost and accidentally discovered South America). The letter was discovered on the 7th of July 1501 by sailors of da Nova's fleet - the third Portuguese fleet that sailed for India.

In traditional medicine the bark is used in treating broken limbs and to dispel nightmares.

603 ***Diospyros dichrophylla***

Monkey Plum
Tolbos
umBongisa

The hard, black wood is seldom used except as fuel. The fruits are said to be poisonous.

611 ***Diospyros whyteana***

Forest Monkey Plum
Bostolbos

The wood is quite variable in colour - from white through pale yellow to grey and dark brown. It is medium-hard, and close-grained, and is suitable for turning and cabinet-making, but logs of useable size are scarce.

615 ***Chionanthus foveolata***

Ornate-Leaved Ironwood
Fynblaarysterhout

umNqumaswele

The brown, strong, hard and heavy wood is seldom used.

617 ***Olea capensis***

Wild Olive
Swartolienhout
umNquma

The heartwood of the wild olive is dark reddish-brown and beautifully figured. It is strong, hard and heavy, and takes a fine finish. It is used for expensive furniture and turning. Its durability makes it suitable for fencing posts.

In traditional medicine, the bark is used for relieving colic, and the leaves for sore throats and eye infections in both animals and humans. The fruit is edible (although it is not as big - nor as popular - as the commercial olive).

618 ***Olea capensis* subsp. *capensis***

Bastard Ironwood
Basterysterhout

The wood of this subspecies is greyish, hard and heavy, but it is seldom used.

618.2 ***Olea capensis* subsp. *macrocarpa***

Ironwood (or Black Ironwood)
Ysterhout (of Swartysterhout)
Ugqwangxe

The wood of this subspecies is attractively figured, fine-grained, hard and heavy. It is difficult to work, but it was used for flooring blocks, for railway sleepers and in bridge construction. It makes beautiful furniture, and is suitable for veneers.

634 ***Nuxia floribunda***

Wild Elder
Vlier
isiKhali

The light yellowish wood is hard and heavy and was once used in wagon building. It is also suitable for tool handles and inlay work, but is seldom used.

636 ***Buddleia saligna***

False Olive
Witolienhout
umGqeba

The wood is brown, tough, hard and heavy. It is suitable for fencing poles and turning but is seldom used today.

In traditional medicine the leaf was used for treating coughs and colds and the root for inducing vomiting.

637 ***Buddleia salviifolia***

Wild Sage
Wildesalie
iGqange

The wood is brown, close-grained, hard and heavy and was once used for making the shafts of assegais. It makes good fishing rods.

In traditional medicine the root was used in the treatment of coughs and colic

and the leaves were used to ease eye infections.

639 ***Acokanthera oppositifolia***

Poison Bush
Gifboom
iNtlungunyembe

All parts of the bush are poisonous. It was used to make arrow poison, which could kill a human within 30 minutes to two hours. Meat cooked over fires made from Poison Bush becomes poisonous, and has proved fatal.

Parts of the plants are used by many African tribes in the treatment of snakebite.

641 ***Gonioma kamassi***

Kamassi
Kamassie
iGala-gala

The wood is a uniform yellow colour with an exceptionally fine grain and texture. It was once an important export for use as weaving shuttles.

670 ***Halleria lucida***

Tree fuchsia
Notsung
umBinza

The leaves is used in traditional medicine to relieve earaches and the plant is used as a charm against evil spirits. Although the fruit is edible, it tends to dry the mouth and has a sickly sweet taste.

The wood is hard and heavy and seldom used.

688 ***Burchellia bubalina***

Wild Pomegranate
Wildegranaat
unFincane

The dense and close-grained wood was once used in hut-building and for agricultural tools.

The root of the wild pomegranate is used in traditional medicine as an emetic and body-wash.

693 ***Rothmannia capensis***

Wild Gardenia
Wildekatjiepiering
iBolo

The wood is yellow, close-grained, strong and heavy. It was formerly much in demand for wagon-making, and is suitable for tool handles and as fuel.

Juice from the fruit is used in traditional medicine for healing burns. The roots are used for treating rheumatism and leprosy.

708 ***Canthium inerme***

Turkey-berry
Bokdrol
umNyushulube

The wood is hard and heavy, pale brown with a marbled grain. It is not available in large sizes, and is only used for small fancy items.

The leaves are used to treat stomach problems.

710 ***Canthium mundianum***

Rock Alder
Klipels
umSantulane

The wood is yellowish-white, close-grained, hard and strong. It is said to be resistant to termites and borers, and is suitable for furniture, fencing poles, tool handles and turning.

711 ***Psydrax obovata*** *(Canthium obovatum)*

Quar
Kwar
umGupe

The wood is very hard and heavy and durable. It is suitable for turning, but is rarely used.

733 ***Tarconanthus camphoratus***

Camphor Bush
Saliehout

The greyish-brown wood is hard and heavy and polishes well. It has been used for musical instruments, cabinet making and boat building.

Splinters are poisonous and cause septic wounds which heal with difficulty.

736.2 ***Chrysanthemoides monilifera***

Bush-tick Berry
Bietou
ulwAmfithi

This plant gave its name to the Bietou River near Plettenerg Bay. Its fruits are edible, and its leaves used in traditional medicine in preparing enemas and to cure fevers.

Part 6
Checklist of Mammals of The Garden Route

Checklist of Mammals of The Garden Route

The Garden Route, with its rich diversity of habitats, has an abundantly wide variety of mammals. Many of them are shy of human contact, and many are nocturnal, which makes them difficult to observe.

The mammals on this checklist are all land-based animals recorded for the area by von Breitenbach (*Southern Cape Forests and Trees*) and Smithers (*The Mammals of the Southern African Sub-Region*). The brief notes describe the habitats and diet of each species. The names are given in English and Afrikaans, with scientific names *in italics*. An appendix lists the mammals that have been exterminated from this area by hunting.

Insectivora

Shrews, Elephant Shrews, Hedgehogs and Golden Moles

Family *SORICIDAE* - The Shrews

Long-Tailed Forest Shrew
Langstertbosskeerbek
Myosorex longicaudatus
Found in the forests of the Southern Cape (and nowhere else). They usually live under dense clumps of ferns. Feed on seeds and insects

Forest Shrew
Bosskeerbek
Myosorex varius
Found in the Southern Cape under thick mats of succulent vegetation in areas where mist is common. Feed on insects and other small mammals.

Least Dwarf Shrew
Kleinste Dwergskeerbek
Suncus infinitesimus
A forest species that feeds on insects.

Reddish-Grey Musk Shrew
Rooigrysskeerbek
Crocidura cyanea
A fynbos species that feeds on insects.

Greater Musk Shrew
Groter Skeerbek
Crocidura flavescens
This species prefers a moist habitat with good vegetative cover. Feed on insects and occasionally on other small rodents.

Family *CHRYSOCHLORIDAE* - The Golden Moles

Duthie's Golden Mole
Duthiese Gouemol
Chlorotalpa duthiae
This species is found in alluvial sand and sandy loam. Nothing is known about their habits or diet.

Zulu Golden Mole *or* **Knysna Golden Mole**
Zoeloelandsegouemol *of* Knysnagouemol
Amblysomus iris
Little is known about the species. They appear to prefer light sandy soils, and to feed on insects and earthworms (as do the other golden moles).

Hottentot Golden Mole
Hottentotgouemol
Amblysomus hottentotus
Often occur in forest soils. They eat insects and earthworms as well as snails and vegetable matter.

Family *MACROSCELIDIDAE* - The Elephant Shrews

Round-Eared Elephant Shrew
Ronde-oorklaasneus
Macroscelides proboscideus
Found in open veld where there is some bush cover. Feed on insects

Order *Chiroptera*
Bats

Sub-Order *Megachiroptera*
Fruit-eating Bats
Family *PTEROPODIDAE*

Egyptian Fruit Bat *or* ***Cape Fruit Bat***
Egiptiese Vrugtevlermuis *of* Kaapse Vrugtevlermuis
Rousettus aegyptiacus
This species is a cave dweller. As its name implies it feeds on fruit, and von Breitenbach records that, while it disperses the seeds of some trees, it also destroys the seeds of other trees - especially of the yellowwoods, stinkwood and assegai

Sub-Order *Microchiroptera*

Insect-eating Bats

Family *EMBALLONURIDAE* - The Sheath-Tailed Bats

Tomb Bat
Witlyfvlermuis
Taphozous mauritianus
Tomb bats are associated with open savanna woodland and may occur on the edges of forests. It is thought that they eat flying insects.

Family *MOLOSSIDAE* - The Free-Tailed Bats

Egyptian Free-Tailed Bat
Egiptiese Losstertvlermuis
Tadarida aegyptiaca
Occur in most vegetated areas except deep forests. They feed on insects.

Family *VESPERTILIONIDAE* - The Vesper Bats

Lesser Long-Fingered Bat *or* **Black Clinging Bat**
Swartvlermuis *of* Klein grotvlermuis
Miniopterus fraterculus
Live in caves and feed on insects.

Schreiber's Long-Fingered Bat
Schreibersse Grotvlermuis
Miniopterus schreibersii
Live in caves and feed on insects

Temminck's Hairy Bat or **Cape Hairy Bat**
Temminckse Langhaarvlermuis *of* Kaapse Langhaarvlermuis
Myotis tricolor
Live in caves and feed on insects

Kuhl's Bat
Kuhlse Vlermuis
Pipistrellus kuhlii
In the Southern Cape this species rests in trees, although in other parts of Africa they have a wide diversity of habitats. They feed on insects

Long-Tailed House Bat or **Long-Tailed Serotine Bat**
Langstertdakvlermuis
Eptesicus hottentotus
This species is not well known. They have been recorded in both mountainous countryside and riverine forest. They feed on insects.

Melck's Serotine Bat
Melckse Dakvlermuis
Eptesicus melckorum

This bat is associated with the fynbos. They feed on insects.

Cape Serotine Bat
Kaapse Dakvlermuis
Eptesicus capensis
This species lives in both forest and grasslands. They feed on insects.

Family *NYCTERIDAE* - The Slit-Faced Bats

Common Slit-Faced Bat or **Long-Eared Bat**
Gewone-spleutneusvlermuis *of* Langoorvlermuis
Nycteris thebaica
Usually found in open savanna woodland, but also occasionally in the forests. They feed on insects.

Family *RHINOLOPHIDAE* - The Horseshoe Bats

Geoffroy's Horseshoe Bat
Geoffroyse Saalneusvlermuis
Rhinolophus clivosus
Usually found in open savanna woodland, but also occasionally in the edges of the forests. They feed on insects.

Cape Horseshoe Bat
Kaapse Saalneusvlermuis
Rhinolophus capensis
This species is a cave dweller, and they are very common in coastal caves. They feed on insects.

Order *Primates*

Bushbabies, Baboons and Monkeys

Sub-Order *Anthropoidea*

Family *CERCOPITHECIDAE* - Monkeys & Baboons

Chacma Baboon
Bobbejaan *of* Kaapse bobbejaan
Papio ursinus
Found in many different habitats, but largely associated with forests and krantzes. The baboon is omnivorous and will eat almost anything .

Vervet Monkey
Blou-aap
Cercopethicus pygerythrus
Most often associated with forests. They are predominantly vegetarians, but will also eat insects as well as the chicks and eggs of some bird species (such as cattle egret and weaver birds).

Order *LAGOMORPHA*
Hares and Rabbits

Family *LEPORIDAE* - Hares, Rock Rabbits and Rabbits

Scrub Hare or **Southern Bush Hare**
Kolhaas *of* Ribbokhaas
Lepus saxatilis
Found in savanna woodland and farmland (often in fallow fields where scrub vegetation has begun to regenerate). They feed on grass.

Order *RODENTIA*
The Rodents

Family *BATHYERGIDAE* - The Molerats

Cape Dune Molerat
Kaapse Duinmol
Bathyergus suillus
Found on coastal sand dunes. They feed on roots and bulbs, and receive all the moisture they need from their food.

Common Molerat
Vaalmol
Cryptomys hottentotus
Found in almost any area that has sandy soil. They feed on roots, bulbs, tubers and underground stolons of grasses. Their mounds are commonly seen - and are considered a nuisance on - lawns in gardens and on golf courses.

Family *HYSTRICIDAE* - The Porcupines
Porcupine
Ystervark
Hystrix africaeaustralis
Found in most habitats (except deep forest) where good cover is available to rest in during the day. They are largely vegetarian, but will feed off carcasses and, more especially, will gnaw on bones when their diet is lacking in phosphorous. They are destructive feeders, and are often considered a problem in areas where cash crops are grown.

Family *GLIRIDAE* - The Dormice

Cape Dormouse or **Spectacled Dormouse**
Gemsbokmuis
Graphiurus ocularis
This species is associated with krantzes and rocky outcrops, as well as old buildings. They feed on insects.

Forest Dormouse or **Woodland Dormouse**
Boswaaierstertmuis

Graphiurus murinus
This species lives in trees and feeds on insects.

Families *CRICETIDAE* - The Rats and *MURIDAE* - The Mice

Vlei Rat
Vleirot
Otomys irroratus
This species is associated with damp soils alongside vleis and streams. They eat almost any plant species found where they live.

Cape Spiny Mouse
Kaapse Stekelmuis
Acomys subspinosus
This species is associated with the rocky parts of mountain slopes. Their feeding habits are unknown.

Striped Mouse
Streepmuis
Rhabdomys pumilio
This species is found in almost any habitat where there is grass cover. They feed on grains, insects and parts of the Protea flower (when these are concealed deep in the bush).

Water Rat
Waterrot
Dasymys incomtus
This species is found in reed-beds and semi-aquatic grasses alongside vleis and streams. They eat the stems and fruiting heads of grasses and reeds.

House Mouse
Huismuis
Mus musculus
This is an introduced species.
The house mouse is found in many buildings and almost wherever man is present. They will feed on almost anything, including vegetable matter, seeds and even bird carcasses.

Pygmy Mouse
Dwergmuis
Mus minutoides
This mouse is usually found in the fynbos in the Southern Cape. They feed on insects, termites and grass seeds.

Verreaux's Mouse
Verreauxse Muis
Praomys verrauxii
This mouse is most commonly found sheltering under fallen trees in the forest. They feed on insects and plant material.

Namaqua Rock Mouse
Namakwalandse Klipmuis
Aethomys namaquensis

This species is found in most habitats, but it favours rocky outcrops. They feed on grass seeds

House Rat
Huisrot
Rattus rattus
This is an introduced species.
The house rat is closely associated with man, and can be found in buildings and under vegetative cover close by. They will eat almost anything.

White-Tailed Mouse
Witstertmuis
Mystromys albicaudatus
This species is found in the fynbos. They feed on insects, seeds and green vegetable matter.

Pouched Mouse
Wangsakmuis
Saccostomus campestris
Found in most habitats where there is vegetative cover. They feed on seeds of bushes and trees and occasionally on grass seed.

Grey Climbing Mouse
Grysklimmuis
Dendromus melanotis
This species is associated with stands of tall grass and riverine conditions. They feed mainly on insects, but will eat seeds as well.

Brant's Climbing Mouse
Brantsse Klimmuis
Dendromus mesomelas
This species is associated with tall grass, particularly where this is mixed with scrub. They feed on insects and occasionally on grass seeds.

Krebs' Fat Mouse
Krebsse Vetmuis
Steatomys krebsii
They are found in dry, sand grassland. It is thought that they feed on insects and seeds.

Order *Carnivora*
The Carnivores

Family *FELIDAE* - The Cats

Leopard
Luiperd
Panthera pardus
The leopard is associated with rocky mountain ranges and forests. It feeds on any mammals, and will take prey that is up to twice its own size.

Caracal
Rooikat
Felis caracal
The caracal is associated with open country. They feed on birds, mammals and reptiles.

African Wild Cat
Vaalboskat
Felis lybica
This species is found in most habitats where there is some vegetative cover. They eat mice, rats and occasionally birds and reptiles.

Serval
Tierboskat
Felis serval
Lives in riverine vegetation. Feeds on small mammals and ground birds.

Family *CANIDAE* - The Foxes, Wild Dogs and Jackals

Cape Fox
Silwervos
Valpes chama
The Cape Fox lives in grassland, in open woodland and in the fynbos. They feed mainly on insects and mice, but will also take other small mammals as well as birds, eggs and reptiles.

Family *MUSTELIDAE* - The Otters, Polecats, Weasels and Honey Badger

Cape Clawless Otter
Groototter
Aonyx capensis
These otters live wherever there is fresh water and food supplies of crabs, frogs or fish. They also eat small mammals, insects and birds, and can wander some way from the water in search of food. They are often also seen in the sea.

Spotted-Necked Otter
Kleinotter
Lutra maculicollis
This species is confined to larger rivers, lakes and swamps where there is extensive open water. They are not often seen on land (they are not as agile as clawless otters). They feed on crabs, fish, frogs and occasionally on insects.

Honey Badger
Ratel
Mellivora capensis
This species will live in almost any habitat. They eat insects, wild berries and fruit, and von Breitenbach records that they follow the Honeyguide bird to bees' nests, where they eat both the honey and the bee larvae.

Striped Polecat
Stinkmuishond
Ictonyx striatus

Found in open grassland, savanna woodland and forest. Feeds on insects, rodents, birds, eggs and reptiles.

Family *VIVERRIDAE* - The Mongoose, Civets, Genets and Suricate

Large-Spotted Genet
Rooikolmuskejaatkat
Genetta tigrina
This species is associated with the Fynbos in the Southern Cape. They feed on insects, rodents, birds and reptiles.

Large Grey Mongoose or **Cape Ichneumon**
Grootgrysmuishond
Herpestes ichneumon
This mongoose is associated with rivers, irrespective of the vegetation type. They feed on rodents, birds, reptiles, snakes, frogs and insects.

Cape Grey Mongoose
Kleingrysmuishond
Galerella pulverulenta
This species is common in the fynbos and forests. They feed on insects, small mammals, bids and their eggs and chicks.

Water Mongoose
Kommetjiegatmuishond
Atilax paludinosus
This mongoose lives near water in areas where there is thick, long grass or reed cover. They are associated with both fresh and salt water. They feed on frogs, crabs, small rodents, insects and fish.

Order *Proboscidae*
The Elephants

Family *ELEPHANTIDAE* - The Elephant

African Elephant
Olifant
Loxodonta africana
The elephant was reported by Vasco da Gama to be living at Mossel Bay when he landed there in 1497. Numerous reports from the Cape Colony indicate that there were large numbers living in the area that now includes the Western, Eastern and Northern Cape until well into the last century. In 1876 Captain Harrison (the Forestry Officer) reported that there were between 400 and 600 elephants in the area between Knysna and Tsitsikamma[52]. Today, however, the elephant occurs in the Eastern Cape only at Addo, and in the Western Cape the last members of the Knysna herd are still wandering the Fisanthoek area (between Knysna and Plettenberg Bay). Smithers states that `*elephants are not a forest species, and their occurrence in the Knysna Forest appears to be due to their being forced into this unnatural environment by man'.*

[52] See The History of Knysna above

Elephants browse and graze off a wide variety of plant material, eating leaves, small branches, bark and grass

Order *Hyracoidae*
The Dassies.

Family *PROCAVIIDAE*

Rock Dassie
Klipdas
Procavia capensis
Live on rocky outcrops, krantzes and mountains. They feed on many varieties of plant material.

Order *Perissodactyla*

Family *EQUIDAE* - The Zebras

Cape Mountain Zebra
Kaapsebergsebra *of* Kaapsebergquagga
Equus zebra
Smithers records that a small herd still occurs in this area in the Kammanassie Mountains. He also states that a herd recorded earlier in the Outeniqua Mountains may now be extinct. Zebras feed mostly on grasses.

Order *Artiodactyla*
Even-Toed Ungulates

Family *SUIDAE* - The Pigs

Bushpig
Bosvark
Potamochoerus porcus
This species requires dense cover close to water. They are particularly associated with the forests. They feed on roots and tubers, fruit and most agricultural crops, as well as earthworms and insects. They have also been recorded eating chickens, small mammals and carrion.

Family *BOVIDAE* - The Antelopes

Blue Duiker
Blouduiker
Cephalophus monticola
Lives in forests and thick coastal bush. The Blue Duiker feeds on fine shoots and leaves in the undergrowth, and on fallen fruits.

Common Duiker
Gewone Duiker
Sylvicapra grimmia
This species is associated with the forest edges and with woodland where there is plenty of undergrowth. They feed on the leaves, twigs, flowers and fruits of low-growing shrubs, and on roots and tubers.

Klipspringer
Klipspringer
Oreotragus oreotragus
This species is always associated with rocky areas - krantzes, boulder-strewn mountains, rocky outcrops, etc. Their main foods are leaves, berries, flowers and fruits.

Steenbok
Steenbok
Raphicerus campestris
The steenbok prefer open grassland where some cover is supplied by tall thickets of grass or shrubs. They eat a mixture of grasses and other vegetative matter.

Grey Rhebok
Vaalribbok
Pelea capreolus
This species prefers rocky hills and mountain slopes where there is good grass cover. They feed on grasses.

Bushbuck
Bosbok
Tragelaphus scriptus
This species is found in underbush close to rivers and other permanent water supplies. They eat mostly leaves and the fine twigs attached to them, as well as the flowers and fruits of many varieties of plants. They may eat grasses from time to time.

Mammal Species Hunted to Extinction on The Garden Route

The following animals are known to have occurred in the Garden Route in the last two hundred years, but are now either completely extinct, or have been hunted to extinction in the region. Some have, however, been re-introduced by private landowners

Cape Eland or **Eland**
Eland
Taurotragus oryx
This species was at one time common throughout sub-Saharan Africa. (the earliest settlers at the Cape recorded them on the Peninsula). Today they occur only in the northern parts of this country and in countries north of ours. (Reintroduced at Buffalo Hills)

Red Hartebeest
Rooihartbees
Alcelaphus buselaphus
There is evidence to show that this species was once present across the entire Cape Colony. Today they occur in the sub-Saharan region only in parts of the Northern Cape Province and in Botswana and Namibia.

Bontebok
Bontebok
Damalsicus dorcas
This species was historically distributed across a fairly wide area of the fynbos biome, but today they are restricted to a small area between Bredasdorp and Cape Agulhas. Reintroduced at Buffalo Hills, Rein's, Mossgas)

Blue Antelope
Bloubok
Hippotragus leucophaeus

This species is ***entirely extinct***. Early travelers reported them as being rare, and occurring in the Bredasdorp-Swellendam-Caledon area.

Lion
Leeu
Panthera leo
The lion was once widespread throughout Africa and Europe, and was reported to be living at the Cape by early explorers. Most lion populations in South Africa today have been re-introduced

Spotted Hyena
Gevlekte Hiëna
Crocuta crocuta
Once common throughout South Africa. They are now confined to our northern borders, and countries north of ours.

Buffalo
Buffel
Syncerus caffer
The buffalo once occurred over most of the Cape Colony, but now only a small herd

survives at Addo. The modern distribution of buffalo is confined largely to the north-eastern parts of this country, northern Botswana and Zimbabwe, and countries north of the Zambezi.(Reintroduced at Buffalo Hills)

Hippopotamus
Seekoei
Hippopotamus amphibius
This species was once abundant across the whole of Africa. Van Riebeeck recorded them at the Cape (in the area that is now Cape Town‘s Church Square). Today they are restricted to the extreme north east of this country, to Zimbabwe, northern Botswana and countries north of the Zambezi.

Part 7
Checklist of Birds of The Garden Route

Checklist of Birds of The Garden Route

Introduction

The **Checklist of Birds of the Garden Route** is a comprehensive list of the birds that are known to occur on the Cape's coast between Heidelberg and Tsitsikamma. Each recorded species is listed by its Robert's number, with its names in English, Afrikaans and German, and, where available, in Xhosa. There is a key to the bird's residence and breeding status, and a short description of the habitats in which the bird is likely to be found. Cross references are also given to descriptions in **Robert's Birds of Southern Africa**, and to two of the popular field guides to the region's birds: **Sasol** and **Newman's**. Space is given for recording the date and location of one's first sighting of each bird.

There are addresses of interest to birders, and an index to the English names at the end of the list.

The **Checklist** was compiled from lists made by knowledgeable birders in the Garden Route during the past few years, without relying primarily on the locality maps in the field guides.

Cross References

Cross-references in the list are made to the following publications:

- ***"Roberts"*** = G L Maclean: **Robert's Birds of Southern Africa** Sixth Edition. *The John Voelcker Bird Book Fund*, Cape Town, 1993.
- ***"Sasol"*** = JC Sinclair, PAR Hockey & WR Tarboton: **Sasol Birds of Southern Africa**. *Struik*, Cape Town, 1993
- ***"Newman"*** = KB Newman: **Birds of Southern Africa (1990 Update)**. *Southern Book Publishers*, Johannesburg, 1990

Breeding Habits

Species will often confine themselves to one or two habitats. These are indicated in the list together with a symbol which refers to the bird's breeding status:

- ***BM** = Breeding migrant (comes to this country/this part of the country to breed during a fixed period each year: usually our summer)
- ***N-BM =** Non-breeding migrant (comes to this country/this part of the country during a fixed period each year: usually our summer, but does not breed while here)
- ***BR =** Breeding resident (lives and breeds here all year round)

1 **Ostrich** Grassland *BR
(A) Volstruis (X) Inciniba (G) Strauß
Roberts page 1; Sasol page138; Newman page 150

Date: _____ *Location:* _____

3 **Jackass penguin** Marine *BR
(A) Brilpikkewyn (X) Unombombiya (G) Brillenpinguin
Roberts 3; Sasol 32; Newman 28

Date: _____ *Location:* _____

6 **Great Crested Grebe** Vleis; estuaries *BR
(A) Kuifkopdobbertjie (G) Haubentaucher
Roberts 5; Sasol 32; Newman 96

Date: _____ *Location:* _____*:*

7 **Blacknecked Grebe** Pans& vleis *BR
(A) Swartnekdobbertjie (G) Schwarzhalstaucher
Roberts 6; Sasol 32; Newman 96

Date: _____ *Location:* _____*:*

8 **Dabchick** Dams; slow-flowing streams *BR
(A) Kleindobbertjie (X) Unolwilwilwi (G) Zwergtaucher
Roberts 6; Sasol 32; Newman 96

Date: _____ *Location:* _____*:*

53 **Cape Gannet** Marine *BR
(A) Witmalgas (X) Umkholonjane (G) Kaptölpel
Roberts 37; Sasol 50; Newman 48

Date: _____ *Location:* _____*:*

55 **Whitebreasted Cormorant** Marine; inland waters *BR
(A) Witborsduiker (X) Ugwidi (G) Weißbrustkormoran
Roberts 38; Sasol 52; Newman 64

Date: _____ *Location:* _____*:*

56 **Cape Cormorant** Coast; estuaries *BR
(A) Trekduiker (X) Ugwidi (G) Kapkormoran
Roberts 39; Sasol 52; Newman 64

Date: _____ *Location:* _____*:*

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

58 **Reed Cormorant** Inland waters *BR
(A) Rietduiker (X) Ugwidi (G) Riedscharbe
Roberts 41; Sasol 52; Newman 64

Date: _____ *Location:* _____

60 **Darter** Inland waters; estuaries *BR
(A) Slanghalsvoël (X) Ivuzi (G) Schlangenhalsvogel
Roberts 43; Sasol 52; Newman 64
Date: _____ *Location:* _____

62 **Grey Heron** Shallow inland waters *BR
(A) Bloureier (X) Isikhawalimanzi (G) Graureiher
Roberts 45; Sasol 56; Newman 74
Date: _____ *Location:* _____:

63 **Blackheaded Heron** Grassland *BR
(A) Swartkopreier (X) Isikhawalimanzi (G) Schwarzkopfreiher
Roberts 46; Sasol 56; Newman 74

Date: _____ *Location:* _____

65 **Purple Heron** Inland waters; estuaries *BR
(A) Rooireier (X) Undofu (G) Purpurreiher
Roberts 47; Sasol 56; Newman 74

Date: _____ *Location:* _____

66 **Great White Egret** Inland waters *BR
(A) Grootwitreier (G) Silberreiher
Roberts 48; Sasol 58; Newman 72

Date: _____ *Location:* _____:

67 **Little Egret** Inland & marine shorelines *BR
(A) Kleinwitreier (G) Seidenreiher
Roberts 49; Sasol 58; Newman 72

Date: _____ *Location:* _____

68 **Yellowbilled Egret** Inland waters *BR
(A) Geelbekwitreier (G) Edelreiher
Roberts 50; Sasol 58; Newman 72

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

71 **Cattle Egret** Open grassland *BR
(A) Bosluisvoël (X) Ilanda (G) Kuhreiher
Roberts 53; Sasol 58; Newman 72

Date: _____ *Location:* _____

76 **Blackcrowned Night Heron** Vleis; river banks *BR
(A) Gewone Nagreier (G) Nachtreiher
Roberts 57; Sasol 62; Newman 70

Date: _____ *Location:* _____*:*

78 **Little Bittern** Reed beds *BR
(A) Woudapie (X) Ihashe (g) Zwergrohrdommel
Roberts 59; Sasol 62; Newman 66

Date: _____ *Location:* _____*:*

81 **Hamerkop** Inland waters *BR
(A) Hamerkop (X) Uthekwane (G) Hammerkopf
Roberts 62; Sasol 68; Newman 80

Date: _____ *Location:* _____*:*

83 **White Stork** Grasslands; marshlands *N-BM
(A) Witooievaar (X) Ingwamza (G) Weißstorch
Roberts 65; Sasol 64; Newman 78

Date: _____ *Location:* _____*:*

84 **Black Stork** Vleis; rivers; estuaries *BR
(A) Grootswartooievaar (X) Unocofu (G) Schwarzstorch
Roberts 66; Sasol 64; Newman 78

Date: _____ *Location:* _____*:*

91 **Sacred Ibis** Inland waters; fields; tidal flats *BR
(A) Skoorsteenveër (G) Heiliger Ibis
Roberts 72; Sasol 70; Newman 84

Date: _____ *Location:* _____*:*

94 **Hadeda Ibis** Fields; forest edge; marshes *BR
(A) Hadeda (X) Ing'ang'ane (G) Hagedasch-Ibis
Roberts 75; Sasol 70; Newman 84

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

95 **African Spoonbill** Shallow inland waters; lagoons *BR
(A) Lepelaar (G) Afrikanischer Löffler
Roberts 76; Sasol 68; Newman 82

Date: _____ *Location:* _____:

96 **Greater Flamingo** Saline & brackish pans *BR
(A) Grootflamink (G) Flamingo
Roberts 77; Sasol 68; Newman 82

Date: _____ *Location:* _____

97 **Lesser Flamingo** Saline & brackish pans *BR
(A) Kleinflamink (G) Zwergflamingo
Roberts 78; Sasol 68; Newman 82

Date: _____ *Location:* _____:

99 **Whitefaced Duck** Inland waters *BR
(A) Nonnetjie-eend (G) Witwenente
Roberts 81; Sasol 74; Newman 86

Date: _____ *Location:* _____:

100 **Fulvous Duck** Large inland waters *BR
(A) Fluiteend (G) Gelbe Baumente
Roberts 82; Sasol 74; Newman 86

Date: _____ *Location:* _____:

101 **Whitebacked Duck** Clear; deep inland waters *BR
(A) Witrugeend (G) Weißbrückenente
Roberts 82; Sasol 74; Newman 86

Date: _____ *Location:* _____:

102 **Egyptian Goose** Inland waters; fields *BR
(A) Kolgans (X) Ilowe (G) Nilgans
Roberts 83; Sasol 72; Newman 88

Date: _____ *Location:* _____

103 **South African Shelduck** Inland waters & estuaries *BR
(A) Kopereend (G) Graukopf-Rostgans
Roberts 84; Sasol 72; Newman 88

Date: _____ *Location:* _____:

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

104 **Yellowbilled Duck** Inland waters *BR
(A) Geelbekeend (X) Idada (G) Gelbschnabelente
Roberts 85; Sasol 76; Newman 94

Date: _____ *Location:* _____

105 **African Black Duck** Shallow rivers *BR
(A) Swarteend (X) Idada (G) Schwarzente
Roberts 86; Sasol 76; Newman 94

Date: _____ *Location:* _____*:*

106 **Cape Teal** Brackish inland waters & estuaries *BR
(A) Teeleend (G) Kapente
Roberts 87; Sasol 78; Newman 92

Date: _____ *Location:* _____*:*

107 **Hottentot Teal** Inland waters *BR
(A) Gevlekte Eend (G) Hottentottenente
Roberts 88; Sasol 78; Newman 90

Date: _____ *Location:* _____*:*

108 **Redbilled Teal** Inland waters *BR
(A) Rooibekeend (G) Rotschnabelente
Roberts 89; Sasol 78; Newman 90

Date: _____ *Location:* _____*:*

112 **Cape Shoveller** Vleis; temporary pans; estuaries *BR
(A) Kaapse Slopeend (G) Kaplöffelente
Roberts 92; Sasol 76; Newman 92

Date: _____ *Location:* _____*:*

113 **Southern Pochard** Deeper; clear inland waters *BR
(A) Bruineend (G) Rotaugenente
Roberts 93; Sasol 74; Newman 90

Date: _____ *Location:* _____*:*

116 **Spurwinged Goose** Inland waters *BR
(A) Wildemakou (X) Ihoye (G) Sporengans
Roberts 96; Sasol 72; Newman 88

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

117 **Maccoa Duck** Inland waters *BR
(A) Bloubekeend (G) Maccoa-Ente
Roberts 97; Sasol 74; Newman 90

Date: _____ *Location:* _____

118 **Secretary Bird** Open woodland; farmland; mountain slopes *BR
(A) Sekretarisvoël (X) Ingxangxosi (G) Sekretär
Roberts 100; Sasol 150; Newman 150

Date: _____ *Location:* _____:

122 **Cape Vulture** Mountains & surrounding open country *BR
(A) Kransaasvoël (X) Ixhalanga (G) Kapgeier
Roberts 104; Sasol 82; Newman 152

Date: _____ *Location:* _____:

126 **Yellowbilled Kite** Woodland *BM & *N-BM
(A) Geelbekwou (X) Untloyiya (G) Schmarotzermilan
Roberts 107; Sasol 108; Newman 158

Date: _____ *Location:* _____:

127 **Blackshouldered Kite** Grassland & farmland *BR
(A) Blouvalk (X) Umdlampuku (G) Gleitaar
Roberts 109; Sasol 106; Newman 174

Date: _____ *Location:* _____:

128 **Cuckoo** Hawk Forest *BR
(A) Koekoekvalk (G) Kuckucksweih
Roberts 110; Sasol 110; Newman 186

Date: _____ *Location:* _____:

131 **Black Eagle** Mountains & gorges *BR
(A) Witkruisarend (X) Untsho (G) Felsenadler
Roberts 112; Sasol 96; Newman 168

Date: _____ *Location:* _____:

136 **Booted Eagle** Woodland to semi-desert *BR
(A) Dwergarend (G) Zwergadler
Roberts 117; Sasol 98; Newman 162

Date: _____ *Location:* _____:

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

139 **Longcrested Eagle** Woodland & grassland *BR
(A) Langkuifarend (X) Uphungu-phungu (G) Schopfadler
Roberts 120; Sasol 98; Newman 164

Date: _____ *Location:* _____:

140 **Martial Eagle** Woodland & grassland *BR
(A) Breëkoparend (X) Ukhozi (G) Kampfadler
Roberts 121; Sasol 96; Newman 168

Date: _____ *Location:* _____:

141 **Crowned Eagle** Forest *BR
(A) Kroonarend (X) Ukhozi (G) Kronenadler
Roberts 122; Sasol 96; Newman 166

Date: _____ *Location:* _____

148 **African Fish Eagle** Larger inland waters & estuaries *BR
(A) Visarend (X) Ingqolane (G) Schreiseeadler
Roberts 128; Sasol 88; Newman 168

Date: _____ *Location:* _____:

149 **Steppe Buzzard** Grassland *N-BM
(A) Bruinjakkalsvoël (X) Isangxa (G) Mäusebussard
Roberts 129; Sasol 102; Newman 170

Date: _____ *Location:* _____:

150 **Forest Buzzard** Edges of forests *BR
(A) Bosjakkalsvoël (G) Bergbussard
Roberts 130; Sasol 102; Newman 170

Date: _____ *Location:* _____:

152 **Jackal Buzzard** Mountains *BR
(A) Rooiborsjakkalsvoël (X) Indlandlokazi (G) Felsenbussard
Roberts 132; Sasol 100; Newman 172

Date: _____ *Location:* _____:

155 **Redbreasted Sparrowhawk** Forests & grassland *BR
(A) Rooiborssperwer (X) Ukhetshana (G) Rotbauchsperber
Roberts 135; Sasol 114; Newman 174

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

157 **Little Sparrowhawk** Forests *BR
(A) Kleinsperwer (X) Ukhetshana (G) Zwergsperber
Roberts 137; Sasol 112; Newman 176

Date: _____ *Location:* _____:

158 **Black Sparrowhawk** Forests *BR
(A) Swartsperwer (G) Mohrenhabicht
Roberts 138; Sasol 114; Newman 180

Date: _____ *Location:* _____:

160 **African Goshawk** Forests *BR
(A) Afrikaanse Sperwer (G) Afrikanischer Sperber
Roberts 140; Sasol 114; Newman 178

Date: _____ *Location:* _____

162 **Pale Chanting Goshawk** Tree-lined rivers *BR
(A) Bleeksingvalk (G) Weißbürzel-Singhabicht
Roberts 142; Sasol 108; Newman 178

Date: _____ *Location:* _____

165 **African Marsh Harrier** Marshes *BR
(A) Afrikaanse Paddavreter (G) Afrikanische Rohrweihe
Roberts 144; Sasol 104; Newman 182

Date: _____ *Location:* _____

168 **Black Harrier** Grass veld; mountain fynbos *BR
(A) Witkruispaddavreter (G) Mohrenweihe
Roberts 147; Sasol 104; Newman 180

Date: _____ *Location:* _____

169 **Gymnogene** Forests *BR
(A) Kaalwangvalk (G) Schlangensperber
Roberts 148; Sasol 102; Newman 184

Date: _____ *Location:* _____

170 **Osprey** Inland & coastal waters *N-BM
(A) Visvalk (G) Fischadler
Roberts 149; Sasol 88; Newman 184

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

171 **Peregrine Falcon** Mountains; grassland *BR
(A) Swerfvalk (X) Ukhetshe (G) Wanderfalke
Roberts 150; Sasol 116; Newman 188

Date: _____ *Location:* _____:

172 **Lanner Falcon** Mountains *BR
(A) Edelvalk (X) Ukhetshe (G) Lannerfalke
Roberts 151; Sasol 116; Newman 188

Date: _____ *Location:* _____

173 **Hobby Falcon** Woodlands *N-BM
(A) Europese Boomvalk (G) Baumfalke
Roberts 154; Sasol 118; Newman 188

Date: _____ *Location:* _____

181 **Rock Kestrel** Mountains *BR
(A) Rooivalk (X) Intambanane (G) Turmfalke
Roberts 159; Sasol 122; Newman 192

Date: _____ *Location:* _____:

183 **Lesser Kestrel** Open grasslands *N-BM
(A) Kleinrooivalk (G) Rötelfalke
Roberts 161; Sasol 122; Newman 192

Date: _____ *Location:* _____:

190 **Greywing Francolin** Montane scrub & stunted fynbos *BR
(A) Bergpatrys (X) Isakhwatsha (G) Grauflügelfrankolin
Roberts 167; Sasol 134; Newman 144

Date: _____ *Location:* _____:

192 **Redwing Francolin** Grasslands *BR
(A) Rooivlerkpatrys (X) Isakhwatsha (G) Rotflügelfrankolin
Roberts 168; Sasol 134; Newman 146

Date: _____ *Location:* _____

195 **Cape Francolin** Coastal & montane fynbos *BR
(A) Kaapse Fisant (G) Kapfrankolin
Roberts 171; Sasol 132; Newman 142

Date: _____ *Location:* _____:

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

198 **Rednecked Francolin** Wooded gorges; riverine scrub *BR
(A) Rooikeelfisant (X) Inkwali (G) Rotkehlfrancolin
Roberts 173; Sasol 132; Newman 144

Date: _____ *Location:* _____

200 **Common Quail** Grassland *BR
(A) Afrikaanse Kwartel (X) Isagwityi (G) Wachtel
Roberts 175; Sasol 140; Newman 140

Date: _____ *Location:* _____

203 **Helmeted Guineafowl** Grassland *BR
(A) Gewone Tarentaal (X) Impangele (G) Helmperlhuhn
Roberts 178; Sasol 138; Newman 148

Date: _____ *Location:* _____

206 **Blackrumped Buttonquail** Grassland *BR
(A) Kaapse Kwarteltjie (G) Hottentototten laufhühnchen
Roberts 182; Sasol 140; Newman 148

Date: _____ *Location:* _____

208 **Blue Crane** Grassland *BR
(A) Bloukraanvoël (X) Indwe (G) Paradieskranich
Roberts 184; Sasol 150; Newman 138

Date: _____ *Location:* _____

210 **African Rail** Reed beds & marshes *BR
(A) Grootriethaan (G) Kapralle
Roberts 186; Sasol 146; Newman 104

Date: _____ *Location:* _____

213 **Black Crake** Reed beds & marshes *BR
(A) Swartriethaan (G) Mohrenralle
Roberts 188; Sasol 144; Newman 102

Date: _____ *Location:* _____

215 **Baillon's Crake** Reed beds & marshes *BR
(A) Kleinriethaan (X) Isizinzi (G) Zwergsumpfhuhn
Roberts 190; Sasol 146; Newman 102

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

217 **Redchested Flufftail** Marshes *BR
(A) Rooiborsvleikuiken (G) Rotbrust-Zwergralle
Roberts 192; Sasol 148; Newman 102
Date: _____ *Location:* _____

218 **Buffspotted Flufftail** Forests; gardens *BR
(A) Gevlekte Vleikuiken (G) Schmuckzwergralle
Roberts 193; Sasol 148; Newman 102

Date: _____ *Location:* _____:

221 **Striped Flufftail** Edges of forests & marshlands *BR
(A) Gestreepte Vleikuiken (G) Streifenzwergralle
Roberts 195; Sasol 148; Newman 100

Date: _____ *Location:* _____

223 **Purple Gallinule** Reed beds *BR
(A) Grootkoningriethaan (G) Purpurhuhn
Roberts 196; Sasol 144; Newman 98

Date: _____ *Location:* _____

226 **Moorhen** Reed beds *BR
(A) Waterhoender (G) Teichhuhn
Roberts 198; Sasol 142; Newman 98

Date: _____ *Location:* _____

228 **Redknobbed Coot** Inland waters *BR
(A) Bleshoender (X) Unomkqayi (G) Kammbleßhuhn
Roberts 200; Sasol 142; Newman 96

Date: _____ *Location:* _____

231 **Stanley's Bustard** Mountains *BR
(A) Veldpou (G) Stanleytrappe
Roberts 204; Sasol 152; Newman 134

Date: _____ *Location:* _____

239 **Black Korhaan** Coastal Dunes *BR
(A) Swartkorhaan (X) Ikhalu-khalu (G) Gackeltrappe
Roberts 210; Sasol 156; Newman 132

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

240 **African Jacana** Lagoons & Inland waters *BR
(A) Grootlangtoon (G) Jacana
Roberts 212; Sasol 144; Newman 118

Date: _____ *Location:* _____

244 **African Black Oystercatcher** Shoreline *BR
(A) Swarttobie (G) Schwarzer Austernfischer
Roberts 216; Sasol 158; Newman 124

Date: _____ *Location:* _____

245 **Ringed Plover** Marine & inland shorelines *N-BM
(A) Ringnekstrandkiewiet (X) Unokrekre (G) Sandregenpfeifer
Roberts 217; Sasol 160; Newman 106

Date: _____ *Location:* _____

246 **Whitefronted Plover** Marine & inland shorelines *BR
(A) Vaalstrandkiewiet (X) Unocegceya (G) Weißstirn-Regenpfeifer
Roberts 218; Sasol 162; Newman 108

Date: _____ *Location:* _____

247 **Chestnutbanded Plover** Lagoons *BR
(A) Rooibandstrandkiewiet (G) Fahlregenpfeifer
Roberts 219; Sasol 162; Newman 106

Date: _____ *Location:* _____

248 **Kittlitz's Plover** Shallow saline pans *BR
(A) Geelborsstrandkiewiet (G) Hirtenregenpfeifer
Roberts 220; Sasol 160; Newman 106

Date: _____ *Location:* _____

249 **Threebanded Plover** Gravelly shorelines of inland waters *BR
(A) Driebandstrandkiewiet (X) Unokrekre (G) Dreiband-Regenpfeifer
Roberts 221; Sasol 160; Newman 106

Date: _____ *Location:* _____

254 **Grey Plover** Tidal flats *N-BM
(A) Grysstrandkiewiet (G) Kiebitzregenpfeifer
Roberts 225; Sasol 172; Newman 120

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

255 **Crowned Plover** Grassland *BR
(A) Kroonkiewiet (X) Igxiya (G) Kronenkiebitz
Roberts 226; Sasol 164; Newman 122

Date: _____ *Location:* _____

257 **Blackwinged Plover** Grassland *BR
(A) Grootswartvlerkkiewiet (X) Igxiya (G) Schwarzflügelkiebitz
Roberts 228; Sasol 164; Newman 120

Date: _____ *Location:* _____

258 **Blacksmith Plover** Inland shorelines *BR
(A) Bontkiewiet (G) Waffenkiebitz
Roberts 229; Sasol 166; Newman 122

Date: _____ *Location:* _____

262 **Turnstone** Rocky shores *N-BM
(A) Steenloper (G) Steinwälzer
Roberts 232; Sasol 174; Newman 114

Date: _____ *Location:* _____

263 **Terek Sandpiper** Estuaries *N-BM
(A) Terekruiter (G) Terekwasserläufer
Roberts 233; Sasol 176; Newman 114

Date: _____ *Location:* _____

264 **Common Sandpiper** Freshwater & marine shorelines *N-BM
(A) Gewone Ruiter (X) Uthuthula (G) Flußuferläufer
Roberts 234; Sasol 176; Newman 112

Date: _____ *Location:* _____

266 **Wood Sandpiper** Marshy shorelines *N-BM
(A) Bosruiter (X) Uthuthula (G) Bruchwasserläufer
Roberts 236; Sasol 176; Newman 112

Date: _____ *Location:* _____

269 **Marsh Sandpiper** Shallow waters *N-BM
(A) Moerasruiter (G) Teichwasserläufer
Roberts 238; Sasol 178; Newman 108

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

270 **Greenshank** Fresh & salt water *N-BM
(A) Groenpootruiter (X) Uphendu (G) Grünschenkel
Roberts 239; Sasol 178; Newman 108

Date: _____ *Location:* _____

272 **Curlew Sandpiper** Fresh & saltwater shorelines *N-BM
(A) Krombekstrandloper (G) Sichelstrandläufer
Roberts 240; Sasol 168; Newman 112

Date: _____ *Location:* _____

274 **Little Stint** Fresh & saltwater shorelines *N-BM
(A) Kleinstrandloper (G) Zwergstrandläufer
Roberts 242; Sasol 170; Newman 110

Date: _____ *Location:* _____

281 **Sanderling** Marine shoreline *N-BM
(A) Drietoonstrandloper (G) Sanderling
Roberts 246; Sasol 168; Newman 114

Date: _____ *Location:* _____

284 **Ruff** Estuaries & fresh water *N-BM
(A) Kemphaan (G) Kampfläufer
Roberts 248; Sasol 172; Newman 108

Date: _____ *Location:* _____

286 **Ethiopian Snipe** Shallow fresh or salt water *BR
(A) Afrikaanse Snip (X) Umnquduluthi (G) Afrikanische Bekassine
Roberts 249; Sasol 174; Newman 104

Date: _____ *Location:* _____

288 **Bartailed Godwit** Shallow fresh or salt water *N-BM
(A) Bandstertgriet (G) Pfuhlschnepfe
Roberts 251; Sasol 180; Newman 118

Date: _____ *Location:* _____

289 **Curlew** Seashore; shallow fresh or salt water N-BM
(A) Grootwulp (G) Großer Brachvogel
Roberts 252; Sasol 180; Newman 124

Date: _____ *Location:* _____:

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

290 **Whimbrel** Coastal shoreline *N-BM
(A) Kleinwulp (X) Ingoyi-ngoyi (G) Regenbrachvogel
Roberts 253; Sasol 180; Newman 124

Date: _____ *Location:* _____

294 **Avocet** Shallow fresh or salt water *BR
(A) Bontelsie (G) Säbelschnäbler
Roberts 256; Sasol 158; Newman 126

Date: _____ *Location:* _____

295 **Blackwinged Stilt** Shallow fresh or salt water *BR
(A) Rooipootelsie (G) Stelzenläufer
Roberts 257; Sasol 158; Newman 126

Date: _____ *Location:* _____

297 **Spotted Dikkop** Grassland; gardens *BR
(A) Dikkop (X) Ingqangqolo (G) Kaptriel
Roberts 258; Sasol 196; Newman 128

Date: _____ *Location:* _____

298 **Water Dikkop** Fresh & saltwater *BR
(A) Waterdikkop (X) Ingqangqolo (G) Wassertriel
Roberts 259; Sasol 196; Newman 128

Date: _____ *Location:* _____

312 **Kelp Gull** Marine shore *BR
(A) Swartrugmeeu (X) Ingaba-ngaba (G) Dominikanermöwe
Roberts 272; Sasol 200; Newman 54

Date: _____ *Location:* _____

315 **Greyheaded Gull** Larger inland waters & marine shores *BR
(A) Gryskopmeeu (G) Graukopfmöwe
Roberts 274; Sasol 202; Newman 52

Date: _____ *Location:* _____

322 **Caspian Tern** Marine & larger inland waters *N-BM
(A) Reuseseeswael (G) Raubseeschwalbe
Roberts 279; Sasol 200; Newman 54

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

324 Swift Tern Marine shore *BR
(A) Geelbekseeswael (G) Eilseeschwalbe
Roberts 280; Sasol 204; Newman 56

Date: _____ *Location:* _____

326 Sandwich Tern Marine shore *N-BM
(A) Grootseeswael (G) Brandseeschwalbe
Roberts 281; Sasol 204; Newman 56

Date: _____ *Location:* _____

327 Common Tern Marine shore *N-BM
(A) Gewone Seeswael (X) Unothenteza (G) Flußseeschwalbe
Roberts 282; Sasol 206; Newman 58

Date: _____ *Location:* _____

335 Little Tern Estuaries *N-BM
(A) Kleinseeswael (G) Zwergseeschwalbe
Roberts 288; Sasol 208; Newman 56

Date: _____ *Location:* _____

338 Whiskered Tern Inland waters *BR
(A) Witbaardmeerswael (G) Weißbart-Seeschwalbe
Roberts 290; Sasol 210; Newman 60

Date: _____ *Location:* _____

339 Whitewinged Tern Inland waters & estuaries *N-BM
(A) Witvlerkmeerswael (G) Weißflügel-Seeschwalbe
Roberts 290; Sasol 210; Newman 60

Date: _____ *Location:* _____

349 Rock Pigeon Mountains & open country *BR
(A) Kransduif (X) Ivukuthu (G) Guineataube
Roberts 299; Sasol 214; Newman 198

Date: _____ *Location:* _____

350 Rameron Pigeon Forests *BR
(A) Geelbekbosduif (X) Izuba (G) Oliventaube
Roberts 300; Sasol 214; Newman 200

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

352 **Redeyed Dove** Woodland; gardens *BR
(A) Grootringduif (X) Indlasidudu (G) Halbmondtaube
Roberts 302; Sasol 216; Newman 196

Date: _____ *Location:* _____

354 **Cape Turtle Dove** Woodland; gardens *BR
(A) Gewone Tortelduif (X) Ihobe (G) Kapturteltaube
Roberts 304; Sasol 216; Newman 196

Date: _____ *Location:* _____

355 **Laughing Dove** Woodland; gardens *BR
(A) Rooiborsduifie (X) Icelekwane (G) Senegaltaube
Roberts 305; Sasol 216; Newman 196

Date: _____ *Location:* _____

356 **Namaqua Dove** Riverine bush & gardens *BR
(A) Namakwaduifie (X) Ihotyazana (G) Kaptäubchen
Roberts 306; Sasol 218; Newman 196

Date: _____ *Location:* _____

358 **Greenspotted Dove** Woodlands & gardens *BR
(A) Groenvlekduifie (X) Ivukazana (G) Bronzeflecktaube
Roberts 307; Sasol 218; Newman 200

Date: _____ *Location:* _____

359 **Tambourine Dove** Forest *BR
(A) Witborsduifie (X) Isavu (G) Tamburintaube
Roberts 308; Sasol 218; Newman 198

Date: _____ *Location:* _____

360 **Cinnamon Dove** Forest *BR
(A) Kaneelduifie (X) Indenge (G) Zimttaube
Roberts 309; Sasol 214; Newman 198

Date: _____ *Location:* _____

370 **Knysna Lourie** Forest *BR
(A) Knysnaloerie (X) Igolomi (G) Helmturako
Roberts 318; Sasol p.224; Newman p.206

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

374 **European Cuckoo** Woodland *N-BM
(A) Europese Koekoek (G) Kuckuck
Roberts 322; Sasol 226; Newman 210

Date: _____ *Location:* _____

377 **Redchested Cuckoo** Forests; gardens *BM
(A) Piet-my-vrou (X) Uphezukomkhono (G) Einsiedlerkuckuck
Roberts 324; Sasol 226; Newman 210

Date: _____ *Location:* _____

378 **Black Cuckoo** Woodland *BM
(A) Swartkoekoek (X) Unomntanofayo (G) Schwarzkuckuck
Roberts 325; Sasol 228; Newman 212

Date: _____ *Location:* _____

382 **Jacobin Cuckoo** Woodland *BM
(A) Bontnuwerjaarsvoël (X) Ilunga Legwaba (G) Jakobinerkuckuck
Roberts 328; Sasol 228; Newman 208

Date: _____ *Location:* _____

384 **Emerald Cuckoo** Forest *BM
(A) Mooimeisie (X) Intananja (G) Smaragdkuckuck
Roberts 330; Sasol 230; Newman 208

Date: _____ *Location:* _____

385 **Klaas's Cuckoo** Woodland *BR & *BM
(A) Meitjie (G) Klaaskuckuck
Roberts 331; Sasol 230; Newman 208

Date: _____ *Location:* _____

386 **Diederik Cuckoo** Woodland; gardens *BM
(A) Diederikkie (X) Umgcibilitshane (G) Diderikkuckuck
Roberts 332; Sasol 230; Newman 208

Date: _____ *Location:* _____

391 **Burchell's** Coucall Riverine forest; gardens *BR
(A) Gewone Vleiloerie (X) Ubikhwe (G) Tiputip
Roberts 337; Sasol 232; Newman 214

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

392 **Barn Owl** Varied, but not in forests *BR
(A) Nonnetjie-uil (X) Isikhova (G) Schleiereule
Roberts 338; Sasol 234; Newman 216

Date: _____ *Location:* _____

393 **Grass Owl** Grassland *BR
(A) Grasuil (X) Isikhova (G) Graseule
Roberts 339; Sasol 234; Newman 216

Date: _____ *Location:* _____

394 **Wood Owl** Forests *BR
(A) Bosuil (X) Ibengwana (G) Woodfordkauz
Roberts 340; Sasol 236; Newman 216

Date: _____ *Location:* _____

395 **Marsh Owl** Grassland; marshes *BR
(A) Vlei-uil (G) Kapohreule
Roberts 341; Sasol 236; Newman 216

Date: _____ *Location:* _____:

400 **Cape Eagle Owl** Mountain fynbos *BR
(A) Kaapse Ooruil (G) Kapuhu
Roberts 346; Sasol 234; Newman 220

Date: _____ *Location:* _____

401 **Spotted Eagle Owl** Woodland & grassland *BR
(A) Gevlekte Ooruil (X) Ifubesi (G) Fleckenuhu
Roberts 347; Sasol 234; Newman 220

Date: _____ *Location:* _____

402 **Giant Eagle Owl** Woodland *BR
(A) Reuse Ooruil (X) Ifubesi (G) Milchuhu
Roberts 348; Sasol 234; Newman 220

Date: _____ *Location:* _____

405 **Fierynecked Nightjar** Woodland; gardens *BR
(A) Afrkaanse Naguil (X) Udebeza (G) Rotnacken-Nachtschwalbe
Roberts 351; Sasol 238; Newman 224

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

411 **European Swift** Most areas *N-BM
(A) Europese Windswael (X) Ihlabankomo (G) Mauersegler
Roberts 356; Sasol 242; Newman 242

Date: _____ *Location:* _____

412 **Black Swift** Most areas *BR & *BM
(A) Swartwindswael (X) Ihlabankomo (G) Kapsegler
Roberts 356; Sasol 242; Newman 240

Date: _____ *Location:* _____

415 **Whiterumped Swift** Urban & grassland *BM
(A) Witkruiswindswael (X) Ihlabankomo (G) Weißbürzelsegler
Roberts 358; Sasol 244; Newman 240

Date: _____ *Location:* _____

416 **Horus Swift** River banks *BM
(A) Horuswindswael (G) Horussegler
Roberts 359; Sasol 244; Newman 240

Date: _____ *Location:* _____

417 **Little Swift** Cliffs & gorges; urban *BR & *BM
(A) Kleinwindsweael (G) Haussegler
Roberts 360; Sasol 244; Newman 240

Date: _____ *Location:* _____

418 **Alpine Swift** Most areas *BM
(A) Witpenswindswael (X) Ubhantom (G) Alpensegler
Roberts 361; Sasol 242; Newman 240

Date: _____ *Location:* _____

424 **Speckled Mousebird** Thickets; gardens *BR
(A) Gevlekte Muisvoël (X) Indlazi (G) Braunflügel-Mausvogel
Roberts 365; Sasol 246; Newman 244

Date: _____ *Location:* _____

425 **Whitebacked Mousebird** Thickets; gardens *BR
(A) Witkruismuisvoël (G) Weißrücken-Mausvogel
Roberts 366; Sasol 246; Newman 244

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

426 **Redfaced Mousebird** Thickets; gardens *BR
(A) Rooiwangmuisvoël (X) Intshili (G) Rotzügel-Mausvogel
Roberts 367; Sasol 246; Newman 244

Date: _____ *Location:* _____

427 **Narina Trogon** Forests *BR
(A) Bosloerie (X) Intshatshongo (G) Zügeltrogon
Roberts 368; Sasol 246; Newman 204

Date: _____ *Location:* _____

428 **Pied Kingfisher** Most waters *BR
(A) Bontvisvanger (X) Isaxwila (G) Graufischer
Roberts 369; Sasol 248; Newman 248

Date: _____ *Location:* _____

429 **Giant Kingfisher** Most waters *BR
(A) Reuse Visvanger (X) Uxomoyi (G) Riesenfischer
Roberts 370; Sasol 248; Newman 248

Date: _____ *Location:* _____

430 **Halfcollared Kingfisher** Rivers *BR
(A) Blouvisvanger (X) Isaxwila (G) Kobalteisvogel
Roberts 371; Sasol 248; Newman 252

Date: _____ *Location:* _____

431 **Malachite Kingfisher** Fresh water *BR
(A) Kuifkopvisvanger (X) Isaxwila (G) Malachiteisvogel
Roberts 372; Sasol 248; Newman 252

Date: _____ *Location:* _____

435 **Brownhooded Kingfisher** Woodland; gardens *BR
(A) Bruinkopvisvanger (X) Undozela (G) Braunkopfliest
Roberts 375; Sasol 250; Newman 252

Date: _____ *Location:* _____

451 **Hoopoe** Grassland; gardens *BR
(A) Hoephoep (X) Ubhobhoyi (G) Wiedehopf
Roberts 388; Sasol 260; Newman 256

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

452 **Redbilled Woodhoopoe** Forests; gardens *BR
(A) Gewone Kakelaar (X) Intlekibafazi (G) Steppenbaumhopf
Roberts 389; Sasol 260; Newman 256

Date: _____ *Location:* _____

474 **Greater Honeyguide** Woodland *BR
(A) Grootheuningwyser (X) Intakobusi (G) Großer Honiganzeiger
Roberts 408; Sasol 262; Newman 272

Date: _____ *Location:* _____

475 **Scalythroated Honeyguide** Forests *BR
(A) Gevlekteheuningwyser (X) Intakobusi (G) Gefleckter Honiganzeiger
Roberts 410; Sasol 262; Newman 272

Date: _____ *Location:* _____

476 **Lesser Honeyguide** Woodland; gardens *BR
(A) Kleinheuningwyser (X) Intakobusi (G) Kleiner Honiganzeiger
Roberts 410; Sasol 262; Newman 272

Date: _____ *Location:* _____

480 **Ground Woodpecker** Mountains *BR
(A) Grondspeg (X) Ungximde (G) Erdspecht
Roberts 414; Sasol 268; Newman 266

Date: _____ *Location:* _____

484 **KnysnaWoodpecker** Forest *BR
(A) Knysnaspeg (X) Isinqolamthi (G) Natalspecht
Roberts 4127; Sasol 270; Newman 270

Date: _____ *Location:* _____

486 **Cardinal Woodpecker** Woodland; gardens *BR
(A) Kardinaalspeg (X) Isinqolamthi (G) Kardinalspecht
Roberts 418; Sasol 268; Newman 268

Date: _____ *Location:* _____

488 **Olive Woodpecker** Forest *BR
(A) Gryskopspeg (G) Goldrückenspecht
Roberts 420; Sasol 268; Newman 266

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

495 **Clapper Lark** Grassland *BR
(A) Hoëveldklappertjie (G) Grasklapperlerche
Roberts 428; Sasol 272; Newman 278

Date: _____ *Location:* _____

500 **Longbilled Lark** Grassland *BR
(A) Langbeklewerik (G) Langschnabellerche
Roberts 432; Sasol 274; Newman 282

Date: _____ *Location:* _____

507 **Redcapped Lark** Grassland *BR
(A) Rooikoplewerik (X) Intibane (G) Rotscheitellerche
Roberts 438; Sasol 276; Newman 280

Date: _____ *Location:* _____

512 **Thickbilled Lark** Grassland *BR
(A) Dikbeklewerik (G) Dickschnabellerche
Roberts 443; Sasol 274; Newman 282

Date: _____ *Location:* _____

518 **European Swallow** Most areas except forest *N-BM
(A) Europese Swael (X) Inkonjane (G) Rauchschwalbe
Roberts 448; Sasol 282; Newman 232

Date: _____ *Location:* _____

520 **Whitethroated Swallow** Grassland near water *BM
(A) Witkeelswael (X) Inkonjane (G) Weißkehlschwalbe
Roberts 449; Sasol 284; Newman 230

Date: _____ *Location:* _____

523 **Pearlbreasted Swallow** Woodland *BM
(A) P relborsswael (G) Perlbrustschwalbe
Roberts 452; Sasol 284; Newman 232

Date: _____ *Location:* _____

526 **Greater Striped Swallow** Grassland *BM
(A) Grootstreepswael (X) Inkonjane (G) Große Streifenschwalbe
Roberts 455; Sasol 282; Newman 228

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

527 **Lesser Striped Swallow** Most areas *BM
(A) Kleinstreepswael (X) Inkonjane (G) Kleine Streifenschwalbe
Roberts 456; Sasol 282; Newman 228

Date: _____ *Location:* _____

529 **Rock Martin** Mountains *BR
(A) Kransswael (X) Inkonjane (G) Felsenschwalbe
Roberts 458; Sasol 286; Newman 236

Date: _____ *Location:* _____

530 **House Martin** Mountains & tall structures *N-BM
(A) Huisswael (G) Mehlschwalbe
Roberts 459; Sasol 286; Newman 236

Date: _____ *Location:* _____

533 **Brownthroated Martin** Inland waters *BR
(A) Afrikaanse Oewerswael (G) Braunkehl-Uferschwalbe
Roberts 461; Sasol 286; Newman 236

Date: _____ *Location:* _____

534 **Banded Martin** Grassland near water *BM
(A) Gebande Oewerswael (G) Bindenschwalbe
Roberts 462; Sasol 286; Newman 236

Date: _____ *Location:* _____

536 **Black Sawwing Swallow** Forests near water *BM
(A) Swartsaagvlerkswael (X) Unomalahlana (G) Sägeflügelschwalbe
Roberts 464; Sasol 284; Newman 234

Date: _____ *Location:* _____

538 **Black Cuckooshrike** Woodland *BR
(A) Swartkatakoeroe (X) Umthethi (G) Kuckuckswürger
Roberts 465; Sasol 288; Newman 298

Date: _____ *Location:* _____

540 **Grey Cuckooshrike** Forests *BR
(A) Bloukatakoeroe (X) Usinga (G) Grauer Raupenfänger
Roberts 467; Sasol 288; Newman 298

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

541 **Forktailed Drongo** Most areas *BR
(A) Mikstertbyvanger (X) Intengu (G) Trauerdrongo
Roberts 468; Sasol 288; Newman 296

Date: _____ *Location:* _____

543 **European Golden Oriole** Woodland *N-BM
(A) Europese Wielewaal (G) Europäischer Pirol
Roberts 470; Sasol 290; Newman 302

Date: _____ *Location:* _____

545 **Blackheaded Oriole** Woodland; gardens *BR
(A) Swartkopwielewaal (X) Umkro (G) Maskenpirol
Roberts 472; Sasol 290; Newman 302

Date: _____ *Location:* _____

547 **Black Crow** Grassland *BR
(A) Swartkraai (X) Unomyayi (G) Kapkrähe
Roberts 474; Sasol 292; Newman 300

Date: _____ *Location:* _____

548 **Pied Crow** Most areas *BR
(A) Witborskraai (X) Igwangwa (G) Schildrabe
Roberts 474; Sasol 292; Newman 300

Date: _____ *Location:* _____

550 **Whitenecked Raven** Mountains *BR
(A) Withalskraai (X) Ihlungule (G) Geierrabe
Roberts 476; Sasol 292; Newman 300

Date: _____ *Location:* _____

566 **Cape Bulbul** Fynbos & riverine scrub *BR
(A) Kaapse Tiptol (G) Kapbülbül
Roberts 491; Sasol 298; Newman 306

Date: _____ *Location:* _____

569 **Terrestrial Bulbul** Forest *BR
(A) Boskrapper (X) Ikhalakandla (G) Laubbülbül
Roberts 494; Sasol 298; Newman 304

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

572 Sombre Bulbul Forest *BR
(A) Gewone Willie (X) Inkwili (G) Kap-Grünbülbül
Roberts 496; Sasol 300; Newman 304

Date: _____ *Location:* _____

577 Olive Thrush Forests *BR
(A) Olyflyster (X) Umswi (G) Kapdrossel
Roberts 501; Sasol 302; Newman 312

Date: _____ *Location:* _____

581 Cape Rock Thrush Rocky mountainsides *BR
(A) Kaapse Kliplyster (X) Igwagwa (G) Klippenrötel
Roberts 504; Sasol 304; Newman 314

Date: _____ *Location:* _____

587 Capped Wheatear Grassland *BM
(A) Hoëveldskaapwagter (X) Isixaxabesha (G) Erdschmätzer
Roberts 509; Sasol 308; Newman 318

Date: _____ *Location:* _____

589 Familiar Chat Most areas *BR
(A) Gewone Spekvreter (X) Isikretyane (G) Rostschwanzschmätzer
Roberts 511; Sasol 306; Newman 320

Date: _____ *Location:* _____

596 Stonechat Grassland *BR
(A) Gewone Bontrokkie (X) Isangcaphe (G) Schwarzkehlchen
Roberts 517; Sasol 308; Newman 324

Date: _____ *Location:* _____

598 Chorister Robin Forest *BR
(A) Lawaaimakerjanfrederik (X) Ugagasisi (G) Lärmrötel
Roberts 519; Sasol 312; Newman 326

Date: _____ *Location:* _____

601 Cape Robin Woodland; gardens *BR
(A) Gewone Janfrederik (X) Ugaga (G) Kaprötel
Roberts 522; Sasol 312; Newman 324

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

606 **Starred Robin** Forest *BR
(A) Witkoljanfrederik (G) Sternrötel
Roberts 525; Sasol 316; Newman 326

Date: _____ *Location:* _____

611 **Cape Rockjumper** Rocky mountainsides *BR
(A) Kaapse Berglyster (G) Kap-Felsenspringer
Roberts 529; Sasol 304; Newman 316

Date: _____ *Location:* _____

614 **Karoo Robin** Fynbos *BR
(A) Slangverklikker (G) Karruheckensänger
Roberts 532; Sasol 314; Newman 330

Date: _____ *Location:* _____

631 **African Marsh Warbler** Reed beds & exotic wattles *BM
(A) Kleinrietsanger (G) Gartenrohrsänger
Roberts 546; Sasol 324; Newman 336

Date: _____ *Location:* _____

633 **European Marsh Warbler** Reed beds & woodland *N-BM
(A) Europese Rietsanger (G) Sumpfrohrsänger
Roberts 547; Sasol 324; Newman 336

Date: _____ *Location:* _____

635 **Cape Reed Warbler** Reed beds *BR
(A) Kaapse Rietsanger (G) Kaprohrsänger
Roberts 549; Sasol 324; Newman 336

Date: _____ *Location:* _____

638 **African Sedge Warbler** Reed beds *BR
(A) Kaapse Vleisanger (X) Unomakhwane (G) Sumpfbuschsänger
Roberts 551; Sasol 322; Newman 336

Date: _____ *Location:* _____

640 **KnysnaWarbler** Forests *BR
(A) Knysnaruigtesanger (G) Sundevalls Buschsänger
Roberts 553; Sasol 322; Newman 334

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

641 **Victorin's Warbler** Forest edges *BR
(A) Rooiborsruigtersanger (G) Rostbrust-Buschsänger
Roberts 554; Sasol 322; Newman 334

Date: _____ *Location:* _____

643 **Willow Warbler** Woodland; gardens *N-BM
(A) Hofsanger (X) Unothoyi (G) Fitis
Roberts 556; Sasol 318; Newman 332

Date: _____ *Location:* _____

644 **Yellow Throated Warbler** Forests *BR
(A) Geelkeelsanger (X) Umbese (G) Rotkopf-Laubsänger
Roberts 557; Sasol 318; Newman 344

Date: _____ *Location:* _____

645 **Barthroated Apalis** Forest edges; gardens *BR
(A) Bandkeelkleinjantjie (X) Ugxakhweni (G) Halsband-Feinsänger
Roberts 557; Sasol 332; Newman 340

Date: _____ *Location:* _____

651 **Longbilled Crombec** Woodland *BR
(A) Bosveldstompstert (G) Langschnabel-Sylvietta
Roberts 562; Sasol 330; Newman 342

Date: _____ *Location:* _____

657 **Bleating Warbler** Woodland; gardens *BR
(A) Kwe-kwe voël (X) Unomanyuku (G) Grünrücken-Camaroptera
Roberts 567; Sasol 328; Newman 346

Date: _____ *Location:* _____

661 **Grassbird** Stream-side vegetation & fynbos *BR
(A) Grasvoël (X) Itshitshi (G) Kap-Grassänger
Roberts 571; Sasol 328; Newman 348

Date: _____ *Location:* _____

664 **Fantailed Cisticola** Grassland *BR
(A) Landeryklopkloppie (X) Unoqandilana (G) Zistensänger
Roberts 574; Sasol 334; Newman 350

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

666 **Cloud Cisticola** Grassland & estuarine flats *BR
(A) Gevlekte Klopkloppie (X) Igqaza (G) Pinkpink
Roberts 577; Sasol 334; Newman 350

Date: _____ *Location:* _____

669 **Greybacked Cisticola** Fynbos & montane grassland *BR
(A) Grysrugtinktinkie (G) Bergzistensänger
Roberts 581; Sasol 336; Newman 352

Date: _____ *Location:* _____

677 **Levaillant's Cisticola** Marshes & reed beds *BR
(A) Vleitinktinkie (X) Umvila (G) Uferzistensänger
Roberts 588; Sasol 338; Newman 354

Date: _____ *Location:* _____

681 **Neddicky** Woodland; gardens *BR
(A) Neddikkie (X) Incede (G) Brauner Zistensänger
Roberts 592; Sasol 334; Newman 352

Date: _____ *Location:* _____

686 **Spotted Prinia** Coastal scrub & forest edges *BR
(A) Geelpenslangstertjie (X) Ujiza (G) Gelbbauchprinie
Roberts 597; Sasol 340; Newman 358

Date: _____ *Location:* _____

689 **Spotted Flycatcher** Grassland; gardens *N-BM
(A) Europese Vlieëvanger (G) Grauschnäpper
Roberts 600; Sasol 342; Newman 362

Date: _____ *Location:* _____

690 **Dusky Flycatcher** Forest & gardens *BR
(A) Donkervlieëvanger (X) Unomaphelana (G) Dunkelschnäpper
Roberts 601; Sasol 342; Newman 362

Date: _____ *Location:* _____

698 **Fiscal Flycatcher** Riverine bush; grassland; gardens *BR
(A) Fiskaalvlieëvanger (X) Icola (G) Würgerschnäpper
Roberts 607; Sasol 342; Newman 364

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

700 **Cape Batis** Forest (woodland in winter) *BR
(A) Kaapse Bosbontrokkie (X) Ingedle (G) Kapschnäpper
Roberts 609; Sasol 348; Newman 366

Date: _____ *Location:* _____

708 **Bluemantled Flycatcher** Forest *BR
(A) Bloukuifvlieëvanger (X) Igotyi (G) Blaumantel-Schopfschnäpper
Roberts 616; Sasol 344; Newman 368

Date: _____ *Location:* _____

710 **Paradise Flycatcher** Forest & woodland; gardens *BM
(A) Paradysvlieëvanger (X) Ujejane (G) Paradiesschnäpper
Roberts 618; Sasol 344; Newman 368

Date: _____ *Location:* _____

711 **African Pied Wagtail** Sandbanks of inland waters *BR
(A) Bontkwikkie (X) Umcelu (G) Witwenstelze
Roberts 620; Sasol 350; Newman 294

Date: _____ *Location:* _____

713 **Cape Wagtail** Inland waters; grassland; gardens *BR
(A) Gewone Kwikkie (X) Umcelu (G) Kapstelze
Roberts 622; Sasol 350; Newman 294

Date: _____ *Location:* _____

716 **Grassveld Pipit** Grassland *BR
(A) Gewone Koester (X) Icelu (G) Wiedelandpieper
Roberts 625; Sasol 352; Newman 288

Date: _____ *Location:* _____

717 **Longbilled Pipit** Montane grassland *BR
(A) Nicholsonse Koester (X) Icelu (G) Langschnabelpieper
Roberts 626; Sasol 352; Newman 288

Date: _____ *Location:* _____

718 **Plainbacked Pipit** Grassland *BR
(A) Donkerkoester (X) Icelu (G) Braunrückenpieper
Roberts 627; Sasol 352; Newman 288

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

727 **Orangethroated Longclaw** Moist grassland & vleis *BR
(A) Oranjekeelkalkoentjie (X) Inqilo (G) Kapgroßsporn
Roberts 635; Sasol 356; Newman 290

Date: _____ *Location:* _____

732 **Fiscal Shrike** Grassland; gardens *BR
(A) Fiskaallaksman (X) Inxanxadi (G) Fiskalwürger
Roberts 639; Sasol 358; Newman 372

Date: _____ *Location:* _____:

736 **Southern Boubou** Forest edges; scrub thickets; gardens *BR
(A) Suidelike Waterfiskaal (X) Igqubusha (G) Flötenwürger
Roberts 643; Sasol 360; Newman 374

Date: _____ *Location:* _____

740 **Puffback** Forest *BR
(A) Sneeubal (X) Unomaswana (G) Schneeballwürger
Roberts 647; Sasol 364; Newman 372

Date: _____ *Location:* _____

742 **Southern Tchagra** Coastal dune forest *BR
(A) Grysborstjagra (X) Umguphane (G) Kaptschagra
Roberts 649; Sasol 360; Newman 376

Date: _____ *Location:* _____

746 **Bokmakierie** Most areas *BR
(A) Bokmakierie (X) Ingqwangi (G) Bokmakiri
Roberts 653; Sasol 362; Newman 380

Date: _____ *Location:* _____

750 **Olive Bush Shrike** Forest *BR
(A) Olyfboslaksman (X) Umthethi (G) Olivwürger
Roberts 657; Sasol 362; Newman 378

Date: _____ *Location:* _____

757 **European Starling** Urban *BR
(A) Europese Spreeu (G) Star
Roberts 664; Sasol 370; Newman 384

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

759 **Pied Starling** Grassland *BR
(A) Witgatspreeu (X) Igiyo-giyo (G) Zweifarbenstar
Roberts 666; Sasol 370; Newman 382

Date: _____ *Location:* _____

760 **Wattled Starling** Woodland *BR
(A) Lelspreeu (X) Uwambu (G) Lappenstar
Roberts 667; Sasol 370; Newman 382

Date: _____ *Location:* _____

768 **Blackbellied Starling** Forest *BR
(A) Swartpensglansspreeu (X) Intenengu (G) Schwarzbauch Glanzstar
Roberts 674; Sasol 366; Newman 386

Date: _____ *Location:* _____

769 **Redwinged** Starling Mountains & urban *BR
(A) Rooivlerkspreeu (X) Isomi (G) Rotschwingenstar
Roberts 675; Sasol 368; Newman 382

Date: _____ *Location:* _____

773 **Cape Sugarbird** Fynbos *BR
(A) Kaapse Suikervoël (G) Kap-Honigfresser
Roberts 679; Sasol 372; Newman 388

Date: _____ *Location:* _____

775 **Malachite Sunbird** Most areas *BR
(A) Jangroentjie (X) Ingcungcu (G) Malachitnektarvogel
Roberts 682; Sasol 372; Newman 390

Date: _____ *Location:* _____

777 **Orangebreasted Sunbird** Fynbos *BR
(A) Oranjeborssuikerbekkie (G) Goldbrust-Nektarvogel
Roberts 684; Sasol 372; Newman 400

Date: _____ *Location:* _____

783 **Lesser Doublecollared** Sunbird Forest; gardens *BR
(A) Kleinrooibandsuikerbekkie (X) Ingcungcu (G) Halsbandnektarvogel
Roberts 690; Sasol 378; Newman 392

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

785 **Greater Doublecollared Sunbird** Woodland; forest edges; gardens *BR
(A) Rooibandsuikerbekkie (X) Ingcungcu (G) Großer Halsbandnektarvogel
Roberts 690; Sasol 378; Newman 392

Date: _____ *Location:* _____

792 **Black Sunbird** Woodland; gardens *BR
(A) Swartsuikerbekkie (X) Ingcungcu (G) Amethyst-Glanzköpfchen
Roberts 699; Sasol 374; Newman 396

Date: _____ *Location:* _____

796 **Cape White-eye** Forest & woodland *BR
(A) Kaapse Glasogie (X) Intukwane (G) Oranjebrillenvogel
Roberts 703; Sasol 346; Newman 402

Date: _____ *Location:* _____

801 **House Sparrow** Human settlements *BR
(A) Huismossie (G) Haussperling
Roberts 709; Sasol 380; Newman 404

Date: _____ *Location:* _____

803 **Cape Sparrow** Grassland near water; gardens *BR
(A) Gewone Mossie (X) Undlunkulu (G) Kapsperling
Roberts 710; Sasol 380; Newman 406

Date: _____ *Location:* _____

804 **Greyheaded Sparrow** Woodland *BR
(A) Gryskopmossie (G) Graukopfsperling
Roberts 711; Sasol 380; Newman 404

Date: _____ *Location:* _____

813 **Cape Weaver** Woodland; reed beds; gardens *BR
(A) Kaapse Wewer (X) Ihobo-hobo (G) Kapweber
Roberts 721; Sasol 386; Newman 408

Date: _____ *Location:* _____

814 **Masked Weaver** Most areas except forest *BR
(A) Swartkeelgeelvink (X) Ihobo-hobo (G) Maskenweber
Roberts 722; Sasol 384; Newman 412

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

824 **Red Bishop** Reed beds; grassland; gardens *BR
(A) Rooivink (X) Umlilo (G) Oryxweber
Roberts 732; Sasol 388; Newman 416

Date: _____ *Location:* _____

827 **Yellowrumped Widow** Woodland; forest edges; reed beds *BR
(A) Kaapse Flap (X) Isahomba (G) Samtweber
Roberts 735; Sasol 390; Newman 418

Date: _____ *Location:* _____

846 **Common Waxbill** Reed beds & grass near water *BR
(A) Rooibeksysie (X) Intshiyane (G) Wellenastrild
Roberts 754; Sasol 400; Newman 426

Date: _____ *Location:* _____

850 **Swee Waxbill** Forest edges *BR
(A) Suidelike Swie (G) Gelbbauchastrild
Roberts 757; Sasol 396; Newman 428

Date: _____ *Location:* _____

852 **Quail Finch** Grassland & vleis *BR
(A) Gewone Kwartelvinkie (X) Unonkxwe (G) Wachtelastrild
Roberts 759; Sasol 402; Newman 424

Date: _____ *Location:* _____

860 **Pintailed Wydah** Grassland; gardens *BR
(A) Koningroibekkie (X) Ujobela (G) Dominikanerwitwe
Roberts 766; Sasol 392; Newman 432

Date: _____ *Location:* _____

872 **Cape Canary** Grassland; gardens *BR
(A) Kaapse Kanarie (X) Umlonji (G) Gelbscheitelgirlitz
Roberts 777; Sasol 406; Newman 436

Date: _____ *Location:* _____

873 **Forest Canary** Forest; fynbos; gardens *BR
(A) Gestreepte Kanarie (X) Unotswitswitswi (G) Schwarzkinngirlitz
Roberts 778; Sasol 406; Newman 436

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

874 **Cape Siskin** Fynbos *BR
(A) Kaapse Pietjiekanarie (G) Hottentottengirlitz
Roberts 779; Sasol 408; Newman 440

Date: _____ *Location:* _____

877 **Bully Canary** Stream-side bush; woodland; & gardens *BR
(A) Dikbekkanarie (X) Indweza Eluhlaza (G) Schwefelgirlitz
Roberts 782; Sasol 406; Newman 436

Date: _____ *Location:* _____

878 **Yellow Canary** Montane grassland; fynbos gardens *BR
(A) Geelkanarie (G) Gelbbauchgirlitz
Roberts 783; Sasol 406; Newman 436

Date: _____ *Location:* _____

881 **Streakyheaded Canary** Woodland & gardens *BR
(A) Streepkopkanarie (X) Indweza (G) Brauengirlitz
Roberts 785; Sasol 408; Newman 438

Date: _____ *Location:* _____

885 **Cape Bunting** Rocky slopes near water *BR
(A) Rooivlerkstreepkoppie (G) Kapammer
Roberts 789; Sasol 410; Newman 442

Date: _____ *Location:* _____

Other Species

Date: _____ *Location:* _____

Date: _____ *Location:* _____:

Pelagic Species

The following species are considered to be pelagic. That is they live almost exclusively at sea, although they may be seen on rare occasions when a large storm has driven them ashore.

10 **Wandering Albatross** Offshore *N-BM
(A) Grootmalmok (G) Wanderalbatroß
Roberts 8; Sasol 34; Newman 30

Date: _____ *Location:* _____

11 **Shy Albatross** Offshore *N-BM
(A) Bloubekmalmok (G) Scheuer Albatroß
Roberts 9; Sasol 36; Newman 30

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

12 **Blackbrowed Albatross** Offshore *N-BM
(A) Swartrugmalmok (G) Schwarzbrauenalbatroß
Roberts 10; Sasol 36; Newman 32

Date: _____ *Location:* _____

14 **Yellownosed Albatross** Offshore *N-BM
(A) Geelneusmalmok (G) Gelbnasenalbatroß
Roberts 11; Sasol 36; Newman 32

Date: _____ *Location:* _____

17 **Southern Giant Petrel** Offshore *N-BM
(A) Reuse Nellie (G) Reisensturmvogel
Roberts 13; Sasol 38; Newman 34

Date: _____ *Location:* _____

18 **Northern Giant Petrel** Offshore *N-BM
(A) Grootnellie (G) Nördlicher Riesensturmvogel
Roberts 14; Sasol 38; Newman 34

Date: _____ *Location:* _____

21 **Pintado Petrel** Offshore *N-BM
(A) Seeduifstormvoël (G) Kapsturmvogel
Roberts 15; Sasol 42; Newman 38

Date: _____ *Location:* _____

23 **Greatwinged Petrel** Offshore *N-BM
(A) Langvlerkstormvoël (G) Langflügel-Sturmvogel
Roberts 16; Sasol 40; Newman 34

Date: _____ *Location:* _____

24 **Softplumaged Petrel** Offshore *N-BM
(A) Donsveerstormvoël (G) Weichfeder-Sturmvogel
Roberts 17; Sasol 42; Newman 38

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

29 **Broadbilled Prion** Offshore *N-BM
(A) Breëbekwalvisvoël (G) Entensturmvogel und Taubensturmvogel
Roberts 20; Sasol 44; Newman 40

Date: _____ *Location:* _____

30 **Slenderbilled Prion** Offshore *N-BM
(A) Dunbekwalvisvoël (G) Dünnschnabel-Sturmvogel
Roberts 21; Sasol 44; Newman 40

Date: _____ *Location:* _____

32 **Whitechinned Petrel** Offshore *N-BM
(A) Bassiaan (G) Weißkinn-Sturmvogel
Roberts 22; Sasol 40; Newman 34

Date: _____ *Location:* _____

34 **Cory's Shearwater** Offshore *N-BM
(A) Geelbekpylstormvoël (G) Gelbschnabel-Sturmtaucher
Roberts 24; Sasol 46; Newman 42

Date: _____ *Location:* _____

35 **Great Shearwater** Offshore *N-BM
(A) Grootpylstormvoël (G) Großer Sturmtaucher
Roberts 24; Sasol 46; Newman 42

Date: _____ *Location:* _____

37 **Sooty Shearwater** Offshore *N-BM
(A) Malbaatjie (G) Dunkler Sturmtaucher
Roberts 26; Sasol 40; Newman 44

Date: _____ *Location:* _____

42 **European Storm Petrel** Marine *N-BM
(A) Swartpootstormswael (G) Sturmschwalbe
Roberts 29; Sasol 48; Newman 46

Date: _____ *Location:* _____

44 **Wilson's Storm Petrel** Offshore *N-BM
(A) Geelpootstormswael (G) Buntfuß-Sturmschwalbe
Roberts 30; Sasol 48; Newman 46

Date: _____ *Location:* _____

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

307 **Arctic Skua** Marine *N-BM
(A) Arktiese Roofmeeu (G) Schmarotzerraubmöwe
Roberts 268; Sasol 198; Newman 50

Date: _____ *Location:* _____

308 **Longtailed Skua** Marine *N-BM
(A) Langstertroofmeeu (G) Falkenraubmöwe
Roberts 269; Sasol 198; Newman 50

Date: _____ *Location:* _____

310 **Subantarctic Skua** Marine *N-BM
(A) Knopstertroofmeeu (G) Spatelraubmöwe
Roberts 270; Sasol 198; Newman 50

Date: _____ *Location:* _____

Birding in The Garden Route

The following people or organisations can help you to find the best birding sites in each town. They are listed together with some of the attractions and accommodation establishments where birding is a recognised activity. All the people on the Garden Route are friendly and helpful - especially to visitors - and most tourism people have at least a passing interest in bird-watching. The locals will tell you about the best birding spots in their own immediate area, and you should always ask their advice. All of them take pride in their knowledge of their own areas.

The information given here was correct at time of going to press; if you struggle to contact any anyone on the list, please contact the local tourism bureau.

Regional Services Council, Tourism Department
P O Box 1514 George 6530
54 York Street, George
044 - 873 6314/55 **Fax** 044 – 884 0688
E-mail tourism@scdc.co.za
www.gardenroute.org.za
Marketing organisation for the Garden Route as a whole.

Heidelberg Tourism Bureau
Private Bag X12 Heidelberg 6665
028 - 722 1917 **Fax** 028 - 722 1157
E-mail hbmun@malan.co.za
Grootvadersbosch Nature Reserve (Hiking trails; bird hide)
Bosbok Hiking Trail (2 - 10 km circular routes)
Boosmansbos Wilderness Area (27 - 64 km circular routes)

Stilbaai Tourism Bureau
P O Box 245 Stilbaai 6674
028 - 754 2602 **Fax** 028 - 754 2549

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

e-mail info.sb@gardenet.co.za
www.stilbaai.co.za
Pauline Bohnen Nature Reserve
Jongensfontein Trail (11 km walk; coastline)
Westbank Walk (5 km walk; river & estuary)

Riversdale Tourism Bureau
P O Box 29 Riversdale 6770
028 - 713 2418 **Fax** 028 - 713 3146
Sleeping Beauty Hiking Trail (13 km walk; forest & fynbos
Kristalkloof Hiking Trail (20 km circular route; fynbos

Albertinia Tourism Bureau
P O Box 59 Albertinia 6695
028 - 735 1000 **Fax** 028 - 735 2055
Gouriqua Hiking Trail (20 km circular route; fynbos)
Rein's Coastal Nature Reserve (accommodation; coastal)
Fynbos Hiking Trail (15 km circular route; fynbos)
Witblits Hiking Trail (7 km circular route)
Die Poort Hiking Trail (fynbos; river, waterfall, bushman paintings)
Gouritz River Mouth (accommodation; beaches)
Dwarsberg Hiking & Horse Trail (fynbos)

Mossel Bay Tourism Bureau
P O Box 1556 Mossel Bay 6500
044 - 691 2202 **Fax** 044 - 691 3077
www.gardenroute.net/mby/
Cape S' Blaize Hiking Trail (15 km walk; coastal)
Ruiterbos Hiking Trail (5 km circular route; indigenous forest & plantations)
Attaquaskloof Hiking Trail (38 km circular route; fynbos, rock pools, mountains)
Koumashoek Hiking Trail (16 km circular route; fynbos)
Romonza Cruises 044 – 690 3101 (Seal Island penguin colonies; other sea birds)
Eight Bells Mountain Inn 044 – 631 0000 (accommodation, walking & bridle trails on a private estate)

Great Brak River Tourism Bureau
P O Box 20 Great Brak River 6525
044 - 620 3338 **Fax** 044 - 620 3176
Wolwedans Hiking Trail (6 km circular route; river)
Great Brak River Village Walk (8 km circular route; beach, estuary & river)

George Tourism Bureau
P O Box 1109 George 6530
044 - 810 9295 **Fax** 044 - 873 5228

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

www.georgetourism.co.za
Wildlife Society (George) 044 - 874 6719
Outeniqua Nature Reserve 044 – 870 8323 (Cape Nature Conservation; fynbos)
Glentana Beach Walk, Glentana (6 km circular route; beaches, caves)
Steve Landman Trail, Glentana (4 km circular route; beach)
Dutton's Cove Walk, Herold's Bay (4 km circular route)
Rooikransies Walk, Herold's Bay (4 km circular route)
Doring River Trail (15 km circular route; fynbos, mountains, river)
Pass-to-Pass Trail (4.7 km walk; mountains & fynbos)
Keur River Bridge Nature Trail (1 km circular route; mountain & fynbos)
Outeniqua Hiking Trail (108 km, 7 day hike; forests)
Tonnelbos/Fern Kloof Hiking Trail (12 km circular route; Forest, plantations, fynbos)
George Peak Trail (17.2 km circular route; mountains & fynbos)
Cradock's Peak Trail (19.1 km circular route; mountains & fynbos)
Cradock's Pass Trail (12.5 km walk; mountains & fynbos)
Witfontein Hiking Trail (various circular routes; pine plantation)
Dikkop Trail (5 km circular route; forest & plantation)
Garden Route Dam (5 km circular route; forest & plantation. Canoeing)
Groeneweide Forest Trail (3 circular routes of 15, 11 & 7 km; forests)
Seven Passes Road (self-drive George to Hoekwil scenic route; forests)
van Kervel Gardens (municipal park)

Wilderness Tourism Bureau
P O Box 188 Wilderness 6560
Leila's Lane, Wilderness behind Karos Hotel)
044 - 877 0045 **Fax** 044 - 877 0045
www.weta.co.za
Woodville Picnic Walk (2 km circular route; forest)
Pirate's Creek Holiday Resort 044 - 877 1101 (waterside accommodation on the Touw River)
Fairy Knowe Hotel 044 - 877 1100 (waterside accommodation on the Touw River)
Wilderness National Park Rest Camp & Ebb and Flow Rest Camp 044 - 877 1197 (waterside accommodation on the Touw River)
Perdepoort Riding Farm 044 - 887 70174 (horse trails & outrides)
Hotel Services 044 - 877 1104 (guided tours)

Wilderness National Park
PO Box 35 Wilderness 6560
Rondevlei, District Sedgefield
044- 343 1302 **Fax** 044 - 3432331
Wilderness National Park Rest Camp & Ebb and Flow Rest Camp 044 - 877 1197 (waterside accommodation on the Touw River in Wilderness)
Pied Kingfisher Trail (11 km circular route; Wilderness National Park: beach, board walk & wetlands)
Giant Kingfisher Trail (7 km circular route; Wilderness National Park: river, forest & waterfall)

Key:	*BR = Breeding resident	*BM = Breeding migrant	*N-BM = Non-breeding migrant
	(A) Afrikaans name	(X) Xhosa name	(G) German name

Brownhooded Kingfisher Trail (7 km circular route; Wilderness National Park: river, waterfall)
Half-Collared Kingfisher Trail (4 km circular route; Wilderness National Park: river, forest)
Malachite Bird Hide (Langvlei, Wilderness National Park: wetlands)
Rondevlei Bird Hide (Rondevlei, Wilderness National Park: wetlands)

Sedgefield Tourism Bureau

P O Box 882, Sedgefield 6573
Railway Station, Sedgefield Behind Forest Lodge)
044 - 343 2658 **Fax** 044 - 343 2658
www.sedgebiz.co.za

Wildlife Society (Sedgefield) 044 - 343 1737
The Lakes Bird Club 044 - 343 2164
Cape Dune Molerat Trail (8 km circular route; Wilderness National Park: wetlands, fynbos, dunes)
Goukamma Trail (8 km circular route; coastal forest & dunes)
Goukamma Beach Walk (14 km circular route; coastal forest, dunes tidal pools & river mouth)
Swartvlei (Wilderness National Park; salt water lake)
Lake Pleasant Hotel 044 - 343 1313 (waterside accommodation at Groenvlei)
Groenvlei 044 - 874 2160 (Goukamma Nature Reserve; fresh water lake)

Knysna Tourism Bureau

P O Box 87, Knysna 6570
Main Street, Knysna
044 - 382 5510 **Fax** 044 - 382 1646
E-mail knysna.tourism@pixie.co.za
www.knysna-info.co.za

Brenton-on-Sea/ Buffalo Bay Beach Walk (7 km beach walk)
Jubilee Creek (3.6 km circular route; forest & stream)
Millwood Gold Mine Trail (5.6 km circular route; plantations, fynbos & forest)
Harkerville/ Knysna Trail (26.6 km; coast, forest & fynbos)
Terblans Trail (6.5 km circular route; forest)
Elephant Trail (3 circular routes of 7, 8 & 9 km; forest)
Garden of Eden (1 km circular route; forest & stream)
Witels Forest Walk (2 km circular route; forest)
Buffalo Valley Game Reserve (3 km circular drive; 1 km circular walk; fynbos)
Featherbed Nature Reserve 044 – 382 1693 (scheduled lagoon cruises, 2 km interpretative hiking trails & game drives; coastal forest)
The Knysna Heads (lagoon mouth)
Pledge Nature Reserve (nature reserve in the town centre)
Brackenhill Falls (waterfalls on the Knoetzie river; forest)
Old Drift Forest Lodge 044 382 1994 (riverside accommodation)
Forest Edge Cottages 044 – 388 4704 (forest-side accommodation)

Plettenberg Bay Tourism Bureau

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P O Box 894 Plettenberg Bay 6600
044 - 5333 4065 **Fax** 044 - 533 4066
E-mail plet.tourism@pixie.co.za
www.plettenbergbay.co.za
Robberg Nature Reserve (3 circular routes of 2.2, 5.6 & 9.2 km; forest, plantation, fynbos & coast)
Wittedrift High School Trails 044 – 535 9731 (circular routes of 1.5 - 10 km; wetlands & fynbos)
Outeniqua Biking Trails 044 – 532 7644 (mountain bike trails; forest)
Kranshoek (two circular routes of 3 & 9 km; forest, plantation, fynbos & coast)

Tsitsikamma Area
Tsitsikamma Lodge 042 – 750 3802 (accommodation)
Tsitsikamma Trail 042 - 391 0393 (64 km, 5 day trail; forest, fynbos, rivers)

Tsitsikamma National Park
P O Storms River 6308
Storms River Mouth
042 - 541 1629
Stinkhoutkloof Nature Trail (8.4 km circular route; forest & plantations)
Rugbos Trail (2 circular routes of 0.1 & 1.3 km; forest)
Storm's River Mouth (5.6 km circular route; forest, fynbos, caves & coast)
Storm's River Mouth Restcamp (seaside accommodation)
De Vasselot Rest Camp (accommodation)
Big Tree & Ratel Trail (4.2 km circular route; forest)
Otter Trail 021 - 222 810 (42 km, 5 day trail; coastal

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Birds Of The Garden Route - A Quick-Reference List

This list will help you narrow down your search for – it tells you if the bird exists on the Garden Route. Refer to the checklist and field guides for more information.

Albatross
- Blackbrowed
- Shy
- Wandering
- Yellownosed

Apalis
- Barthroated

Avocet
- African

Batis
- Cape

Bishop
- Red

Bittern
- Little

Bokmakierie

Boubou
- Southern

Bulbul
- Cape
- Sombre
- Terrestrial

Bunting
- Cape

Bustard
- Stanley's

Buttonquail
- Blackrumped

Buzzard
- Forest
- Jackal
- Steppe

Canary
- Bully
- Cape
- Forest
- Streakyheaded
- Yellow

Chat
- Familiar

Cisticola
- Cloud
- Fantailed
- Greybacked
- Levaillant's

Coot
- Redknobbed

Cormorant
- Cape
- Reed
- Whitebreasted

Coucall
- Burchell's

Crake
- Baillon's
- Black

Crane
- Blue

Crombec
- Longbilled

Crow
- Black
- Pied

Cuckoo
- Black
- Diederik
- Emerald
- European
- Jacobin
- Klaas's
- Redchested

Cuckooshrike
- Black
- Grey

Curlew

Dabchick

Darter

Dikkop
- Spotted
- Water

Dove
- Cape Turtle
- Cinnamon
- Greenspotted
- Laughing
- Namaqua
- Redeyed
- Tambourine

Drongo
- Forktailed

Duck
- African Black
- Fulvous
- Maccoa
- Whitebacked
- Whitefaced
- Yellowbilled

Eagle
- African Fish
- Black
- Booted
- Crowned
- Longcrested
- Martial

Egret
- Cattle
- Great White
- Little
- Yellowbilled

Falcon
- Hobby
- Lanner
- Peregrine

Finch
- Quail

Flamingo
- Greater
- Lesser

Flufftail
- Buffspotted
- Redchested
- Striped

Flycatcher
- Bluemantled
- Dusky
- Fiscal
- Paradise
- Spotted

Francolin
- Cape
- Greywing
- Rednecked
- Redwing

Gallinule
- Purple

Gannet
- Cape

Godwit
- Bartailed

Goose
- Egyptian
- Spurwinged

Goshawk
- African
- Pale Chanting

Grassbird

Grebe
- Blacknecked
- Great Crested

Greenshank

Guineafowl
- Helmeted

Gull
- Greyheaded
- Kelp

Gymnogene

Hadeda

Hamerkop

Harrier
- African Marsh
- Black

Hawk
- Cuckoo

Heron
- Blackcrowned Night
- Blackheaded
- Grey
- Purple

Honeyguide
- Greater
- Lesser
- Scalythroated

Hoopoe

Ibis
- Hadeda
- Sacred

Jacana
- African

Kestrel
- Lesser
- Rock

Kingfisher
- Brownhooded
- Giant
- Halfcollared
- Malachite
- Pied

Kite
- Blackshouldered
- Yellowbilled

Korhaan
- Black

Lark
- Clapper
- Longbilled
- Redcapped
- Thickbilled

Longclaw
- Orangethroated

Lourie
- Knysna

Martin
- Banded
- Brownthroated

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House
Rock
Moorhen
Mousebird
Redfaced
Speckled
Whitebacked
Neddicky
Nightjar
Fierynecked
Oriole
Blackheaded
European Golden
Osprey
Ostrich
Owl
Barn
Cape Eagle
Giant Eagle
Grass
Marsh
Spotted Eagle
Wood
Oystercatcher
African Black
Penguin
Jackass
Petrel
European Storm
Greatwinged
Northern Giant
Pintado
Softplumaged
Southern Giant
Whitechinned
Wilson's Storm
Pigeon
Rameron
Rock
Pipit
Grassveld
Longbilled
Plainbacked
Plover
Blacksmith
Blackwinged
Chestnutbanded
Crowned
Grey
Kittlitz's
Ringed
Threebanded
Whitefronted
Pochard
Southern
Prinia
Spotted
Prion
Broadbilled
Slenderbilled
Puffback
Quail
Common
Rail
African
Raven
Whitenecked
Robin
Cape
Chorister
Karoo
Starred
Rockjumper
Cape
Ruff
Sanderling
Sandpiper
Common
Curlew
Marsh
Terek
Wood
Secretary Bird
Shearwater
Cory's
Great
Sooty
Shellduck
South African
Shoveller
Cape
Shrike
Fiscal
Olive Bush
Siskin
Cape
Skua
Arctic
Longtailed
Subantarctic
Snipe
Ethiopian
Sparrow
Cape
Greyheaded
House
Sparrowhawk
Black
Little
Redbreasted
Spoonbill
African
Starling
Blackbellied
European
Pied
Redwinged
Wattled
Stilt
Blackwinged
Stint
Little
Stonechat
Stork
Black
White
Sugarbird
Cape
Sunbird
Black
Greater Double-collared
Lesser Double-collared
Malachite
Orangebreasted
Swallow
Black Sawwing
European
Greater Striped
Lesser Striped
Pearlbreasted
Whitethroated
Swift
Alpine
Black
European
Horus
Little
Whiterumped
Tchagra
Southern
Teal
Cape
Hottentot
Redbilled
Tern
Caspian
Common
Little
Sandwich
Swift
Whiskered
Whitewinged
Thrush
Cape Rock
Olive
Trogon
Narina
Turnstone
Vulture
Cape
Wagtail
African Pied
Cape
Warbler
African Marsh
African Sedge
Bleating
Cape Reed
European Marsh
Knysna
Victorin's
Willow
Yellow Throated
Waxbill
Common
Swee
Weaver
Cape
Masked
Wheatear
Capped
Whimbrel
White-eye
Cape
Widow
Yellowrumped
Woodhoopoe
Redbilled
Woodpecker
Cardinal
Ground
Knysna
Olive
Wydah
Pintailed

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

Part 8
Checklist of Reptiles of The Garden Route

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

Checklist of Reptiles of The Garden Route

Like all other groups of living things (animals, plants, insects, etc), the reptiles have an important part to play in the complex web of life that makes up the world as we know it. However, because of the rapid increase in human population (and the impact that has had on the Earth) in the past century, and because so many people kill reptiles simply because they are scared of them, a distressing number of them are threatened with extinction.

Learning about the reptiles of the Garden Route will increase your awareness and decrease any fears that you may have: you may even come to love them!

The reptiles on this checklist have all been listed for this area by Branch (*Veldgids tot die Slange en Ander Reptiele van Suider Afrika*); Branch (*South African Red Data Book - Reptiles and Amphibians*) and Broadley (*FitzSimons' Snakes Of Southern Africa*). The brief notes describe the habitats and diet of each species. Names are listed in English, Afrikaans, and, where available, in Xhosa. Scientific names are given *in italics*.

Order *Chelonii*
Tortoises, Terrapins & Turtles

Sub-Order *Cryptodira*
Tortoises, Terrapins & Turtles

Family - TESTUDINIDAE - The Land Tortoises

Parrot-Beaked Tortoise
Gewone Padlopertjie
Homopus areolatus
This tortoise is mostly found in the coastal fynbos in our area, often on the edges of thick vegetative cover.

Leopard Tortoise (Mountain Tortoise)
Bergskilpad
Geochelone pardalis
This species is fairly widespread, but is generally not found in mountainous areas! The name probably refers to the shape and size of the shell. Feeds on a variety of plants and fruit.

Angulate Tortoise
Ploegskaarskilpad
Chersina angulata
This tortoise prefers sandy habitats such as coastal fynbos Feed on grasses, succulents and annual plants.

Family - *DERMOCHELYIDAE* - The Leatherback Turtles

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Leatherback Turtle
Leerrugseeskilpad
Dermochelys coriacea
The leatherback lives at sea where it feeds mainly on jellyfish. It generally only comes to our beaches to lay its eggs.

Green Turtle
Groenseeskilpad
Chelonia mydas
Lives exclusively at sea in our area, and prefers warm shallow waters. Feeds on jellyfish during its first year, and there after feeds almost exclusively on sea grasses

Loggerhead Turtle
Grootkopseeskilpad
Caretta caretta
The loggerhead lives at sea where it feeds mainly on jellyfish. It prefers to nest further north, and rarely comes to our beaches to lay its eggs.

Sub-Order *Pleurodira*
Side-Necked Terrapins

Family - *PELOMEDUSIDAE* - The Side-Necked Terrapins

Cape Terrapin
Gewone Waterskilpad
Pelomedusa subrufa
Cape Terrapins generally live in seasonal pans and ponds. They hibernate during the dry season, and come out when the rains begin. Feed on almost anything - snails, tadpoles, fish, crabs, carrion, water plants, etc.

Order *Squamata*
Reptiles with Scales

Sub-Order *Serpentes*
Snakes

Family *TYPHLOPIDAE* - The Blind Snakes

Deleland's Blind Snake
Deleland se Blindeslang
Typhlops leylandii
iNyoka-yomhlaba
Blind snakes generally live underground (often near termite mounds), in humus rich soil, in compost heaps, under rocks and decaying logs, etc. Feed on insects - especially termites and termite larvae.

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Family *LEPTOTYPHLOPIDAE* - The Thread Snakes

Black Thread Snake
Swart Draadslang
Leptotyphlops nigricans
Thread snakes live underground, generally near termite nests. Feed on termites and other small insects.

Family *COLUBRIDAE* - The Typical Snakes
Sub-Family *BOAEDONTINAE* - The Old World Snakes

Common Brown Water Snake
Bruin Waterslang
Lycodonomorphous rufulus
iZilenzi
This species is nocturnal, and is usually found in perennial streams and dams. Eats frogs and fish, and has been recorded raiding doves' nests.

Aurora House Snake
Aurora-huisslang
Lamprophis aurora
A secretive species that is found in the fynbos and grasslands. Feeds on small rodents.

Olive House Snake
Olyfkleurige Huisslang
Lamprophis inornatus
Olive House Snakes prefer moist coastal bush and fynbos. Feed on small rodents and occasionally on other snakes.

Brown House Snake
Gewone Huisslang
Lamprophis fulginosus
inKwakhwa
Found throughout Southern Africa. Feeds on small rodents, and occasionally on lizards and other snakes.

Cape Wolf Snake
Kaapse Wolfslang
Lycophidion capens capense
Prefers damp conditions, such as under stones or compost. Feeds on small skinks.

Common Slug Eater
Tabakrolletjie
Duberria lutrix

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Prefers damp conditions, such as under stones or compost. Feeds on slugs and soft-shelled snails, and is therefore considered to be of economic importance to farmers and gardeners.

Mole Snake
Molslang
Pseudaspis cana
inKwakhwa
Distributed throughout most of Southern Africa. Common in sandy scrub in the Southern Cape. Lives in burrows made by other animals. The young mole snakes feed mainly on small lizards. Adults feed on rodents and other small mammals.

Many-Spotted Snake
Kaapse Rietslang
Amplorhinus multimaculatus
Often found in reed beds in vleis and mountain streams . Feeds on frogs and lizards.

Sundevall's Shovel Snout
Graafneusslang
Prosymna sundevallii
Found in drier parts of the fynbos. Feed on the eggs of snakes, lizards and geckos.

Sub-Family *PSAMMOPHINAE* - The Sand Snakes

Spotted Skaapsteker
Skaapsteker
Psammophylax rhombeatus
Found in the fynbos and karroid scrub. Feeds on lizards, frogs, small rodents and other snakes.

Cross-Marked Grass Snake
Kruisslang
Psammophis crucifer
inTlangu
Found in scrub on sandy soils. Feeds on geckos, lizards and occasionally on frogs.

Spotted Harlequin Snake
Kousbandslangetjie
Homoroselaps lacteus
Found throughout the Southern Cape in old termite nests, under stones, etc. Feeds on small snakes and skinks.

Sub-Family *COLUBRINAE* - The Colubrine Snakes

Green Water Snake
Groen Waterslang
Philothamnus hoplogaster
Found near water in coastal bush and fynbos. Feeds on frogs, fish and lizards.

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Natal Green Snake
Natalse Groenslang
Philothamnus natalensis
Found near water in both wet and dry forests. Feeds on frogs, fish and lizards.

Common Egg Eater
Gewone Eiervreter
Dasypeltis scabra
Found throughout the region, except in the closed-canopy forests. Often within cracks in rocks or in old termite nests. Feeds exclusively on birds' eggs.

Red-Lipped Herald
Rooilipslang
Chrotaphopeltus hotamboeia
Found throughout the region, the Herald has a preference for damp places under rocks or any other suitable shelter. Often found in suburban gardens. Feeds mainly on frogs and toads, but will also take lizards and mice.

Boomslang *or* **Back-Fanged Tree Snake**
Boomslang
Dyspholidus typus
iNyushu
Found throughout the Western and Southern Cape, as well as in other parts of the country. Lives mostly in trees, where it preys on chameleons, lizards, small birds, mammals and frogs

This species is highly poisonous to man, but is unlikely to bite as it is usually quite shy. It is a back-fanged snake, and finds it awkward to bite into large surfaces - such as the human arm or leg.

Family *ELAPIDAE* - The Cobras and Mambas

Cape Cobra
Kaapse Geelslang
Naja nivea
UmDlezinye
In the Southern Cape, found on sandy river banks and in other well-drained areas. Likes to hide in holes made by rodents and other animals. Feeds mainly on rats, mice and other rodents, but will take lizards, frogs, toads and other snakes - even other cobras - as well as birds and their eggs.

This is a highly poisonous species, which accounts for more fatal bites than any other snake in the Cape. Its toxin causes death by suffocation, and Broadley states that 'it is ... often possible to keep a victim alive by artificial respiration, until anti-venom can be injected'.[53]

Rinkhals *or* **Ring-Necked Spitting Cobra**
Rinkhals

[53] DG Broadley: **FitzSimons Snakes of Southern Africa**: *Delta Books*, Johannesburg 1983

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Hemachatus haemachatus
uNobhiya
Usually found in grasslands. Preys on most small animals, but prefers rodents, toads and other snakes.

Of all snakes, the rinkhals is best adapted to spitting, and it can propel its venom over a distance of 2 metres. The snake will instinctively aim for the eyes of the victim. Broadley states that 'if immediate action is not taken to wash the venom out with water or preferably a weak solution of antivenin, milk or other bland solution, the destruction of the eye tissues is rapid and can end in partial or even complete blindness'.[54] The rinkhals has the ability to 'play dead' when under threat, and should therefore be treated with extreme caution - even when it appears to be completely lifeless.

Sub-Family *HYDROPHIIDAE* - The Sea Snakes

Yellow-Bellied Sea Snake
Swart-en-geel seeslang
Pelamis platurus
This species is an ocean-dweller, and is occasionally washed ashore where it becomes helpless and unable to move. Preys on small fish.

Family *VIPERIDAE* - The Adders and Vipers

Sub-Family *CAUSINAE* - The Night Adders

Rhombic Night Adder
Nagadder
Causus rhombeatus
iNyoka yasebusuku
Found in most areas outside the forests. Preys mostly on toads, frogs and small rodents.

This adder is generally docile, and its bite, while poisonous, is seldom fatal.

Sub-Family *VIPERINAE* - The True Vipers

Puff Adder
Pofadder
Bitis arietans
iRamba
Found throughout the region. This is a terrestrial adder, although it is sometimes found in bushes and low shrubs. Feeds on rodents, birds and other snakes.

The puff adder's venom is dangerous to humans, although it takes effect relatively slowly (it can take 24 hours to kill a man). Only about 5% of reported puff adder bites prove fatal.

The puff adder feeds voraciously during the summer, building up its fat reserves for its winter hibernation. This fat is much sought after by traditional herbalists for the treatment of

[54] DG Broadley: **FitzSimons Snakes of Southern Africa**: *Delta Books*, Johannesburg 1983

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rheumatism.

Cape Mountain Adder *or* **Berg Adder**
Bergadder
Bitis atropos
iRamba lamatye
Found in grassland and fynbos, and frequently on rocky krantzes - not only in the mountains, but right down to sea level. Preys on small rodents, frogs, toads, lizards, small birds and other snakes.

The berg adder is bad tempered and quick to strike. The bite has never been known to kill, however, and the effects of the venom (loss of sight, smell and taste) usually wear off after one or two days.

Sub-Order *Sauria*
Lizards

Family *SCINCIDAE* - The Skinks

Sub-Family *ACONTIINAE* - The African Legless Skinks

Cape Legless Skink
Kaapse Pootlose Skink
Acontias meliagris
Found in dry soils in fynbos areas and in soils associated with dry river courses. Feed on small insects.

Sub-Family *SCINCINAE* - The Old World Skinks

Silvery Dwarf Burrowing Skink
Silwergrys Dwerg-Grawende Skink
Scelotes bipes
Found burrowing in sandy soils in coastal strandveld. Feed on small insects.

Sub-Family *LYGOSOMATIINAE* - The Advanced Skinks

Cape Skink
Kaapse Skink
Mabuya capensis
Found throughout the region. Preys on large insects.

Red-Sided Skink
Rooiflankskink
Mabuya homalocpehala
Usually found foraging in leaf-litter in our area. Inland, they can be seen basking in the sun on rocks in dry river beds. Feed on insects.

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Family *LACERTIDAE* - The Old World Lizards

Deleland's Sandveld Lizard
Deleland se Sandveldakkedis
Nucras lalandii
Prefers to hide under stones in open grassland. Feed on spiders, beetles and larvae.
Striped Sandveld Lizard
Streep-Sandveldakkedis
Nucras tessellata
Found in the drier areas of the region. Favourite prey is scorpions. But will also take beetles and spiders.

Spotted Sand Lizard
Gevlekte Sandakkedis
Pedioplanus lineoocellata
Found in drier areas of open fynbos/grassland. Prefer flat, open, rocky areas. Feed on beetles and locusts in summer, but almost exclusively on termites during winter.

Cape Mountain Lizard
Kaapse Bergakkedis
Tropidosaura gularis
Found on fynbos-covered mountain peaks. Feed on flies and bees that come to the flowers.

Common Mountain Lizard
Gewone Bergakkedis
Tropidosaura montana
Live on the vegetation in the fynbos and mountain grasslands. Feed on small insects.

Family *CORDYLIDAE* - The Plated and Girdled Lizards

Yellow-Throated Plated Lizard
Geelkeel-pantserakkedis
Gerrhosaurus flavigularis
Found in scrubby grassland and open forest throughout the region. Common in urban areas, where it can be found under rubbish. Feeds on grasshoppers, termites and millipedes.

African Long-Tailed Seps
Afrika-Langstertseps
Tetradactylus africanus
A snake-like lizard found in montane grassland. Feeds on grasshoppers and other insects.

Short-Legged Seps
Kortbeen-Seps
Tetradactylus seps
This lizard has very small, but perfectly formed limbs, and is found in coastal forests. Feeds on

bees and grasshoppers.

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Common Long-Tailed Seps
Gewone Langstert Seps
Tetradactylus tetradactylus
A snake-like lizard found in the fynbos and in montane grassland. Feeds on grasshoppers and other insects.

Sub-Family *CORDYLINAE* - The Girdled Lizards

Cape Grass Lizard
Kaapse Grasakkedis
Chamaesaura anguina
Found in montane fynbos and grassland. Feed mainly on grasshoppers.

Blue-Spotted Girdled Lizard
Bloukol-Gordelakkedis
Cordylus coeruleopunctatus
Found only in the Garden Route, and only in the fynbos and on the edges of the forests. Feeds on small insects.

Cape Girdled Lizard
Kaapse Gordelakkedis
Cordylus cordylus
Found in many rocky habitats in our area. Often densely populated (up to 300 specimens per hectare). Feed on insects.

Cape Crag Lizard
Kaapse Kransakkedis
Pseudocordylus microlepidotus
Found on the upper slopes of montane fynbos and grassland. Feeds on large insects and other lizards.

Family *AGAMIDAE* - The Agamas

Southern Rock Agama
Suidelikke Rotskoggelmander
Agama atra
Found in the fynbos at all altitudes from sea level upwards. Can also be found foraging amongst driftwood on the beach. Feeds on ants and termites.

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Family *CHAMAELEONIDAE* - The Chameleons

Knysna Dwarf Chameleon
Knysna Dwergverkleurmannetjie
Bradypodion damaranum
Found exclusively in the Garden Route, between George and Tsitsikamma. Lives in the forests and gardens, and favours the centres of tree ferns, where it camouflages itself by coiling up its tail to look like a new fern frond. Preys on small insects.

Family *GEKKONIDAE* - The Typical Geckos

Ocellated Gecko
Geoogde Geitjie
Pachydactylus geitje
Found in coastal fynbos, and appear to prefer damp conditions. Feed on small insects.

Spotted Gecko
Kolgeitjie
Pachydactylus maculatus
Found in fynbos, coastal bush and the drier parts of the region, usually under rubbish, rotting logs or the loose bark of dead trees. They also like to hide in the empty shells of the giant land snail (up to 10 spotted geckos will inhabit a single shell). Feed on small insects

Marbled Leaf-Toed Gecko
Gemarmerde Blaartoongeitjie
Phyllodactylus porphyreus
Found in the forests and in urban gardens, and may enter houses throughout the region. They feed on insects, and can often be seen hunting at night wherever outdoor lights attract their prey.

Part 9
The Marine Environment

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

The Marine Environment

The attraction that man feels for the sea is one of our most basic instincts. In his introduction to his book '**A Guide to the Common Sea Fishes of Southern Africa**', Rudy van der Elst[55] writes:

> ***'Oceans probably represent the most important life support system on earth. Their influence on climate, oxygen levels and the cycling of nutrients is critical to the survival of life as we know it. In addition to these physical processes, man himself is becoming increasingly dependent on the sea's natural resources, its animal, vegetable and mineral wealth, to secure his future on this planet.'***

The ocean has been a source of both food and inspiration for many thousands of years, yet it may well prove to be the next 'unknown' that man will need to explore for his survival in the coming century. In this modern age of vast scientific understanding, the sea still sometimes reveals new and amazing mysteries. The story of the discovery and identification of the Coelacanth[56] - a story that has close links to the Garden Route - is a perfect example of this. Here was a fish that people had believed to have been extinct for over 70 million years - and yet a living specimen was caught in 1938, and more have been caught since then.

Most people love to spend time at the beach relaxing or exploring the coast, which makes the ocean an invaluable tourist attraction - especially in a country such as ours where many millions of people live inland and away from easy access to the sea.

It is important, therefore, to have a basic knowledge of the ocean to understand the attraction that it holds for visitors to our area, as well as to appreciate the need for its conservation.

Tourism and The Sea

The number of ways in which we use the sea for our recreation needs is almost as great as the number of people who use it. It is difficult, therefore, to overestimate the importance of the ocean as an attraction in the Garden Route. The great beauty of our Southern Cape Coastline, our proximity to the Southernmost tip of Africa (at Agulhas), and the clean and relatively unspoiled and uncrowded condition of our beaches are all important factors in this attraction. As a result, an entire section of the tourism industry is devoted to servicing the needs of visitors who want to experience the ocean. This includes:

- hotels and other tourist accommodations that have been built close to the beaches or in positions where they can take advantage of particularly good views of the ocean;
- restaurants that provide sea-foods and/or a view of the sea so as to take full advantage of its appeal
- 'unstructured' leisure and recreational activities (which don't usually require special skills or equipment) such as

[55]Rudi van der Elst: ***'A Guide to the Common Sea Fishes of Southern Africa'*** Published by Struik. Cape Town 1981.

[56]See **'The Coelacanth'** below.

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Quiet contemplation
Swimming
Sunbathing
Walking
Scenic drives
Bird watching
Whale watching, etc

- competitive and non-competitive sporting activities such as
  Surfing
  Sailing
  Power-boat racing
  Rock and surf fishing
  Fly fishing, etc
- structured adventure tours (often - but not always - non-competitive sports which require specialist equipment and guides)
  Fishing and deep sea fishing charters
  Boat-based whale and bird watching
  Sea kayaking, etc

The tourism industry's marketing experts have recognised the importance of the ocean to tourism, and have structured entire marketing plans around it so as to attract visitors to the area. In this regard, the **MTN Whale Route** is a highly visible and successful exercise in the Garden Route[57]

The Sea Never Rests! - Currents, Tides & Waves

Currents

Currents are vast bodies of water largely driven by the prevailing winds to move around the main oceans of the world, and which have a great influence on weather patterns. Southern Africa, and particularly the Western Cape, lying as it does between the Indian Ocean on our Eastern and Southern Shores and the Atlantic on our Western Shore, is particularly vulnerable to these influences because of two main ocean currents:

- the **Benguela Current** in the Atlantic pushes cold, Antarctic water northwards against the West coast, where desert conditions occur because the cold, moist air which is a product of the Benguela current does not release its moisture when it meets the warm African land mass, and
- the **Agulhas Current** in the Indian Ocean. This current is formed from the confluence of the waters of the Mozambique Current and the South Equatorial Current near Maputo, and brings warm, equatorial waters to the East coast of Southern Africa. As it drifts closer and further away from the shore (in summer and winter), the Agulhas current will bring a greater or lesser amount of rain to the Garden Route because of the meeting of its warm, equatorial air with the warm African land mass (in addition to the effects of the Agulhas current, the rainfall pattern is strongly influenced by atmospheric low pressure troughs that regularly move in an Easterly direction along the Southern Coast).

[57]The Southern Cape Coast is considered to have the world's best land-based whale watching. See **'The MTN Cape Whale Route'** below.

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In terms of its influence on the Garden Route, the Agulhas Current is notable, too, because it has a direct bearing on the life cycles of many of our more important fishes: sardines, soles, elf, shad, sharks, etc, all make use of the strength of the current at different times in their lives[58].

The Tides

Twice a day the level of the ocean on the beaches rises and falls - often quite considerably. These changes in level are referred to as ***tides***, and are caused by the movement of the Moon around the rotating Earth.

It is easy to understand why the gravitational pull of the moon on the Earth's waters will cause a *high*[59] tide on the side of the Earth *facing* the moon - but why is there a corresponding *high* tide on the very *opposite* side of the Earth - which faces *away* from the moon? And why don't the tides always rise and fall to the same height each day? Or at the same time?

High and Low Tides

The Moon and the Earth spin around each other in a fixed pattern called an **orbit**. At the same time, they (the Moon-and-Earth in combination) orbit the Sun;

The Sun, Earth and Moon all exert a gravitational pull on one another;

The Moon's gravitational pull causes the ocean's waters to 'bulge out' - towards the Moon. The result is a ***high tide*** on the side of the Earth *facing* the Moon;

The Earth and the Moon are held together by gravitational forces that cause them to spin around one another as a single unit with a common *axis* (i.e. the imaginary straight line around which they revolve). Because the Earth is 100 times larger than the Moon, this axis lies somewhere within the radius of the Earth. The spinning of the Earth around the Moon thus causes a *centrifugal force,* which counteracts the Moon's *gravitational force*, and causes the waters on the side of the Earth opposite to the Moon to bulge. The result is a ***high tide*** on the side of the Earth that *faces away from* the Moon;

Low tides occur in areas of the Earth where the gravitational and centrifugal forces are least felt, and where the water has been 'sucked away' to create the 'bulges' that make up the high tides.

Two Tides Every Day

Because the Earth spins on its own axis once every 24 hours, there are two ***high tides*** on our coast (and every coast) every day: once when our side of the Earth is *pointing towards* the Moon, and once when we are *pointing away from* the Moon.

Changes in the Times of the Tides

The Moon takes 28 days to complete one orbit of the Earth (this is why it appears to rise and set at different times every night). It follows, therefore, that the tides will occur slightly later each day, according to the times at which the Moon's pull is greatest on our portion of the coast. As a result, each day's ***high tide*** occurs up to *50 minutes later* than the similar tide on the previous day (in Knysna, high tides occur about 40 minutes later each day).

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[58]M&G Bannister: ***'The Living Shores of Southern Africa'*** Published by Struik. Cape Town 1981

[59]Some publications may use different words for the tides: A *rising* tide may sometimes be called a *flood* tide, and a *falling* tide may be called an *ebb* tide.

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Changes in the Heights of the Tides

The Sun is so far away from the Earth that it's effect on the sea is very much less than the Moon's effect;

Because the Earth-Moon complex also revolves around the Sun, all three bodies will lie in line with one another about once every fourteen days (at the time of the ***Full Moon*** [when you *can see the whole of the Moon* at night] and ***New Moon*** [when you *cannot see the Moon at all* at night]);

At Full Moon and New Moon, the Sun re-enforces the Moon's pull on the water, and this combination cause the 'bulge' of the ocean's waters to be greatest. The effect is that the *difference in height between high tide and low tide is correspondingly large.*

When the difference in height between high tide and low tide is at its ***greatest****, it is called a* ***spring tide***

Seven days after every New Moon, the Moon will lie at right angles to the line between the Earth and the Sun. This is called ***First Quarter***;

This same effect is felt seven days after every Full Moon. This is called ***Last Quarter***;

Because the Sun and Moon are at right angles to one another during First Quarter and Last Quarter, they act to cancel out each other's effect on the ocean. This means that the 'bulging' effect on the ocean will be at its smallest, and the *difference in height between high tide and low tide is correspondingly small*.

When the difference in height between high tide and low tide is ***least****, it is called a* ***neap tide***.

Tide Tables

Scientists can predict where the Moon will be in relation to the Earth and the Sun on any day of the year, and thus at what times the tide will rise and fall. Using these predictions, the Naval Hydrographer at Simonstown publishes **Tide Tables** for our coast. This official publication contains the expected times for high and low water at all the main points along the coast, as well as the phases of the Moon for each day of the year. These tables are then often re-printed as local tide tables (often containing only the dates and times of the tides) by newspapers and print companies.

A tide table is a useful and important tool. If you plan to use the sea in any way - to fish, sail, surf or even just walk along the beach, - *know the times of the tides* so that you are not caught unawares. If they are not printed in your local paper, tide tables are usually available from sports shops and Nature Conservation Offices.

The Waves

The ocean's waves are caused by the action of the wind blowing across the water.

When the wind moves over the surface of the ocean, it causes the water underneath it to eddy and roll in a vertical pattern of circles, each of which remains in almost the same spot as the wave moves on. The wave itself does not drive the water forwards (think of a boat without a motor or sails at sea: it does not go forward, but stays in one place and rises and falls as the waves pass. This is because it has nothing to propel it - the water in the wave is *not advancing*). When the waves approach the shore the shallow bottom interrupts the circular motion of the water, which causes the crest of the wave to fall forward and break, forming the familiar white water breakers that you see on the beach and against the rocks.

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The ceaseless pounding of the waves is one of the main factors that shape the coastlines of the world.[60]

The combined action of the waves and the wind slowly *erode* (break up) rocks and shells along the shore, creating sediment which is easily moved around by the water. When the waves reach the shore at an angle, they cause a phenomenon called a *longshore current*. These longshore currents have the effect of moving the sediment along the coast and thus continually replenishing the beach sand.

When the waves hit against hard objects which are resistant to erosion (such as the Table Mountain Sandstone that makes up much of the rock in our area), they - and the longshore currents that they cause - are deflected. This is typically what happens on the Southern Cape Coast, where the prevailing longshore currents are eastwards. The result is the characteristic series of rounded bays called '*half-heart*' bays, such as those at Mossel Bay, Buffalo Bay, Plettenberg Bay and Algoa Bay. These half-heart bays are characterised by a rocky promontory (or peninsula) on the western side, and a rounded, protected beach with deep beach sand to the eastern side.

Property developments on the shoreline - such as housing schemes and break-waters - can have a profound effect on their surroundings if they interrupt these patterns of wave and sand movement. An often cited example of the problems that can be caused in this way is Algoa Bay, where moving sand dunes on Cape Recife were reclaimed by stabilisation, and a breakwater was built for the Port Elizabeth harbour. The result has been that there is no longer any sediment with which to replace the sand that is eroded (by wave action) from the beaches along the Bay (well-engineered man-made structures *can* have the effect of interrupting the erosion of sand from the beaches - as in the case at Shark Pier in Algoa Bay).

Properties of Sea Water

The way life-forms have developed in the sea is largely due to the nature of its water, which affects buoyancy, pressure, oxygen and light availability.

Buoyancy

Because water physically supports the organism, animals and plants living in the sea use less energy in *supporting their own body-weights* than do their land-living counterparts. This means that they need to produce less supportive tissue, and is perfectly illustrated by the sea-weeds which are soft and floppy compared to land plants (because they have *no need of woody tissue* for physical support). They are therefore able to produce more chlorophyll-bearing tissue, which increases the rate at which they can photosynthesise[61]. The result is that these algae can grow much quicker than the land plants.

Pressure

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[60] Other factors that have influenced the shaping of the coast include: [a] continental drift: Africa was once joined to South America, India, and Australia, to form one giant continent called Gondwanaland. Over millions of years, the continents (much as we know them today) broke away from one another and drifted off; and [b] the rise and fall of sea levels during periods of global warming and cooling (- the Ice Ages).

These phenomena continue today at an almost imperceptible rate. The continents move about 16 cm per year, and the sea level has risen about 120 metres since the last ice age - 20 000 years ago.

[61] Photosynthesis is the conversion of chemicals into the 'food' that a plant needs for its energy. The process can only take place in the presence of sunlight.

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In the aquatic environment, pressure increases by one atmosphere with each 10 metres in depth. Organisms that live at great depths are usually not affected by this, because the pressure inside and outside of their bodies is the same. Gas expands and contracts as pressure changes, and animals that have gas spaces (such as lungs or swim bladders) inside their bodies need to compensate for this in order to survive any pressure change. This is why many fish die in trawl nets before they are hauled aboard the trawlers (their swim bladders rupture with the increase in the volume of gas as the pressure decreases with decreasing depth).

For man to dive in the ocean (without a submarine) for any length of time, he has to take his own air supply with him - SCUBA[62] gear. The 'bends' - perhaps the diver's greatest risk - is related to the pressure gradient in the sea. The air that we breath - and which most divers use in their SCUBA tanks - contains about 80% nitrogen, which dissolves in the blood under increased pressure. If the diver returns to the surface too quickly after a dive, this nitrogen will be released as bubbles which can expand with painful and sometimes fateful results. This is known as ' *the bends*' (at its worst the effect is somewhat similar to the rupturing of the swim bladders in deep-water fish). Divers must therefore be extremely cautious when ascending. They will usually rest at various depths during the return to the surface in order to allow the nitrogen to escape from the bloodstream.

Whales can descend to depths of 1 500 metres, but, like other mammals that live in the sea (such as dolphins and seals), they do not have to worry about the bends: nitrogen is not dissolved in their blood because *they do not breath under water*.

Saltiness

Land-living organisms must continually replenish water that is lost to the air as part of their temperature-control mechanisms (in man, for instance, perspiration is one way in which we continually lose water). Fresh-water organisms, on the other hand, have to guard against gaining *too much water* because their bodily fluids have a higher salt content than that of their watery habitat. Sea-living organisms, however, live in a medium that has a *similar salt content to that of their own bodies*. They therefore have no problems of water loss or gain, and the sea water becomes a comfortable environment for them.

Oxygen

Oxygen is not as readily available in the water as it is on land, and many marine animals have therefore developed a complex system of external gills which extract the oxygen that they need out of the water. Life forms in the sea that lack this specialised adaptation are thus often sluggish and slow moving.

Light

Animal life-forms depend heavily on the plant world to produce useable energy. Only the thin, upper layer of the sea can support plants that photosynthesise, because light is quickly absorbed by water and cannot travel as freely through it as it can through the air. This upper layer - the *euphotic layer*[63] - is usually only about 50 to 100 metres deep. Most animals who live below the euphotic layer depend on food that sinks down from it. At one time it was thought that *all* animal life in the sea depended in one way or another on the plants in the

[62]SCUBA = *S*elf *C*ontained *U*nderwater *B*reathing *A*pparatus

[63]The ***euphotic layer*** may vary in depth: it is considered to be that portion of the water that receives 1% *or more* of the sunlight that enters the sea .

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upper layer for their energy requirements. It has recently been discovered, however, that certain bacteria which live around volcanic vents in the deepest parts of the oceans can synthesise sulphurous chemicals to produce energy, and that an entire community of deep-sea dwellers use these bacteria as their food source.

Water Pollution

Once you understand that these properties of sea water were the main factors that influenced the way marine organisms evolved, you can easily understand why man has to guard against polluting the seas. The threats of pollution include:

- ***solid pollutants*** which may decrease the depth of the euphotic layer, by decreasing the depth to which sunlight can penetrate, and so limit the potential for photosynthesis. This decreases the production of plant material, which causes the food supply to drop off; and
- ***chemical pollutants*** which may be directly toxic, or which may decrease the supply of oxygen that all organisms require for breathing (whether they live under water or not).

The Sea Shore

Rocky and Sandy Shores and The Tidal Zones

The place where the sea meets the shore is a fascinating world of its own. Many organisms live ***only*** in this narrow strip between the deep sea and the land, and are often specially adapted to their harsh environment. Man's continuing encroachment on the delicate intertidal, infratidal and supratidal zones (which are sometimes collectively called ***the littoral***) is a threat which must not be ignored.

Our shores are a major tourist attraction, and, in order to protect this resource, it is important to have some understanding of the life forms that the they support.

Rocky Shores

The rocky shores of the South Cape Coast can be divided into five zones. Each has its own, often unique, fauna and flora:

Rocky Shores: The Infratidal Zone

The infratidal zone is the lowest zone of the rocky shore. Because it is only exposed to the air at very low tide, it is characterised by algae which can tolerate only brief periods of exposure. The South Cape Coast infratidal zone supports species that are quite different to those found on the West Coast (cold water species) and East Coast (warm water, sub-tropical species).

When the infratidal zone is exposed at low tide, you have a perfect opportunity to examine marine creatures which would quickly die if they were exposed to the air, but which can survive because they are trapped in the infratidal rock pools. These include:

- Sponges - primitive animals composed of colonies of cells which feed by filtering food particles out of the water. Their bright colours are thought to warn other animals against eating them. The bodies are supported by *spicules* which are highly irritant;
- Sea anemones - simple, solitary animals that are characterised by having tentacles and hollow bodies;
- Nudibranchs and sea slugs - which are perhaps the most brightly coloured of the sea's creatures. The sea slugs feed on the anemones, and are not only immune to their stinging cells, but will, in fact, take them up and incorporate them into their own bodies as a defence mechanism against other predators;

Red bait grows in thick colonies in the infratidal zone (their siphons can often be seen spouting water at low tide). Mussels also grow here in thick colonies and, like the red bait, they are filter feeders which process vast amounts of water.

Rocky Shores: The Cochlear Zone

The Cochlear zone is unique to the rocky shores of the South Cape Coast. It is named for the limpet *Patella cochlear*. They grow in tightly packed colonies of up to 2 600 per square metre - more densely than any other limpet of their size anywhere in the world. Each limpet cultivates its own 'garden' of red algae around its shell. It feeds off this garden, and jealously protects it against intruders. Because of the density of the colonies, most other algae cannot find place to grow on the rocks in the Cochlear zone, and the zone appears to be barren compared to the lower Balanoid and infratidal zones that it separates.

Rocky Shores: The Lower Balanoid Zone

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The lower Balanoid zone (the word *balanoid* refers to the barnacles that grow here) on the rocky shores of our coast is typified by thick beds of algae which are home to a small number of animals such as limpets and winkles. Whelks (*Burnupena spp.*) and sea anemones can be seen in the rock pools of this zone.

Rocky Shores: The Upper Balanoid Zone

The upper Balanoid zone is relatively dry during much of the tidal cycle. It is dominated by many of the animals that are so familiar to anyone who has walked along our rocky shores: Limpets (*Patella spp.*), Barnacles (*Octomeris* and *Tetraclita* spp.) and Winkles (*Oxystele* spp.).

The barnacles are crustaceans that are related to the crabs and shrimps (and not to the limpets which they appear to resemble). They rely on the movement of the waves to bring food within reach of their tentacle-like filtering bodies. These filters - or 'legs' - are extended outward and upward from the shell to trap the fine particles on which the barnacles feed. Where the barnacles grow in *dense colonies*, they tend to grow tall and relatively thin so that their 'legs' can reach above those of their neighbours in order to trap their food more efficiently. Where they grow in relative isolation from one another, the barnacles will tend to be shorter.

With the exception of the sea lettuce (*Ulva sp.*), few algae can survive in the upper balanoid zone because it is so often exposed to the air.

Rocky Shores: The Littorina Zone

This is the zone that is only covered by water at high tide. It is a harsh environment in which very few organisms survive, but it is home to the Littorinids (the group of periwinkles or tiny snails which give the zone its name). Only one species occurs on the South Cape Coast - *Nodolittorina africana*. The red algae *Porphyra*, and shore crabs (which can often be found sheltering under the rocks) are typical of this zone.

Sandy Shores

Unlike the rocky shores, sandy beaches are unstable and have no hard substratum onto which plants and animals can attach themselves. The waves are continually changing the shape of the beaches, and great quantities of sand may be moved about in very short periods. Animals that live here have had to adapt to this constantly changing environment. They have done so by learning to burrow into the sand, or by learning to swim off into the water during part of the tidal cycle.

Most organisms that live in the tidal zones of sandy beaches rely on organic matter that is carried by the water for their food supply. When a wave of water rushes up the beach and recedes, it deposits a scum of particles which are broken down by bacteria living in the sand. A certain amount of the this water filters through the sand, and the filtering and cleaning action of the beach and its attendant organisms is so efficient that about 95% of the organic matter present in each wave is broken down in every single flush-through. Because they can clean huge volumes of water in this way, the beaches are vitally important to the marine environment.

Many of the animals that live on sandy beaches are able to burrow through the sand. This protects them from the effects of wave action, and allows them to remain in the moist layers, and so escape the effects of drying and heat.

The smooth plough snail (*Bullia rhodostoma*) is one of the more familiar animals seen

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on the sandy beaches of the South and East Coasts. It is a scavenger that will feed on almost any animal matter: especially rotten red bait. It will also eat rotten fish and mussels, as well as jellyfish and bluebottles. It lives in that part of the beach that lies between the low-tide and mid-tide levels. Large numbers of plough snails can sometimes be seen washing up towards the mid-tide level with the incoming waves. By going with the flow in this way, they are allowing the water to carry them to their food. After they have eaten, they bury themselves in the sand again, and wait for the next low tide; and by hiding in the lower reaches of the sand below the mid-tide level, they prevent damage that might be caused to themselves when the sand dries out.

Besides the plough snail, our beaches are home to many small animals that are easily overlooked because so many of them hide in the sand - especially during the day. These include the white mussel (*Donax serra*) and the sand hoppers (*Talorchestia capensis*). The sand hoppers only appear at night. Where kelp is plentiful, there are enormous numbers of this species (up to 25 000 per square metre). They are an important link in the food chain because they help to break up the kelp and so make it available to the particle feeders and the bacteria in the water.

Between the particles of sand there exists a group of animals known as the ***meiofauna***, none of which is bigger than 0.5 mm in size. There are two broad groups of meiofauna - the nematode worms, which are slender and wiry, and the harpacticoid copepods, which are tiny crustaceans. Between them, they can account for between 20 and 45 % of the biomass[64] on the sandy shores.

Predators of The Sandy Shores

The most important predators on the animals that live on sandy beaches are the birds - especially the

- *Kelp gull*, which is a scavenger;
- *African black oystercatcher*[65], which feeds on the white mussels;
- *White-fronted plover*, which feeds on the sand hoppers; and the
- *Sanderling*, which also feeds on the sand hoppers, and may catch as many as 300 per hour.

The plough snail is not eaten by any of the birds, possibly because it concentrates the poison *cadmium*, and would therefore probably taste unpleasant to these predators.

Fish swimming over the beaches at high tide also feed on the animals that live in the sand. Many fish will take white mussels. Other predators include

- *Galjoen* - which feeds on crustaceans and sand hoppers
- *White steenbras* - which can spew out a jet of water to dislodge sand prawns from their burrows; and
- *Rays* and *skates* - which eat the plough snails.

Man's Impact on the Intertidal Zone

You will by now have realised that the intertidal zone is a sensitive but very narrow and important part of the marine environment. Because it is so beautiful and fascinating, it holds a major attraction for man, and has thus become seriously threatened by our activities. We have

[64] ***Biomass*** is the total mass of wet (living) tissue in a given area.

[65] See '**The African Black Oystercatcher**' below

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already seen how property development can affect the movement of sand around the half-heart bays (see the example of Algoa Bay/Port Elizabeth under the section on ***Waves*** above). Other activities which affect the intertidal zone are pollution, the use of vehicles on the beach, commercial exploitation of the intertidal species, bait collecting and subsistence exploitation.

Pollution

The main sources of pollution are oil spills, factory effluent discharges into the sea, sewage, polluted water running off the land and littering of the beaches. Other, less obvious pollutants are siltation caused by soil erosion (often as a result of injudicious land use - both in farming and urban areas, but also caused by strip mining), and wind-blown chemicals such as pesticides and fertilizers.

The extent of the damage that pollutants cause is somewhat dependent on the type of coastal feature: a quiet estuary will take much longer to recover from an oil spill, for instance, than will a rocky coast that is battered by high seas and scoured by strong currents.

The South Cape Coast is relatively unpolluted at the present time, because it has not been subjected to as many environmental threats as, say, parts of the European coast. Still, towns such as Mossel Bay are areas of some concern to environmentalists because of the levels of heavy industry and shipping (when a sheltered bay receives pollutants, the intertidal zone is affected because the pollutants are not quickly broken down by high seas or taken away by strong currents).

Constant vigilance on the part of both the authorities and the individual will ensure that the South Cape Coast remains as clean as possible for as long as possible. With the dwindling number of clean beaches around the world, the state of our own beaches will have a serious impact on the tourism industry - and, therefore on employment - in our area.

Vehicles (and Dogs) on the Beaches

Many people think that, because the beaches are washed clean of vehicle tracks by high tides, the use of motor vehicles on the beaches cause no permanent harm. We have seen how most animal life on the beaches lives below the sand, and the deep tracks left by off-road vehicles may damage large numbers of these organisms.

On the Southern Cape Coast, the African black oystercatcher requires special mention here: their nestlings are often hatched in unprotected parts of the beach just above the high water mark. During the season (mainly high summer) these nestlings are extremely vulnerable, and can easily be overlooked and killed by drivers, or caught and killed by dogs. Because this is considered to be one of Southern Africa's most endangered coastal birds, the authorities have mounted and awareness campaign to save the African black oyster catcher (see below).

Commercial Exploitation of Intertidal Species

Commercial harvesting of plants and animals in the intertidal zone is limited in the South Cape. The large oyster farms in Knysna and the importation of mussels from other areas have, to a certain extent, taken the pressure off this section of the Coast. Wild oysters are, however, still collected commercially, but this is controlled by the National Parks Board to ensure sustainability.

Bait Collecting

Bait collecting regulations have been introduced to protect the intertidal species. These

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regulations apply to private individuals who are generally recreational fishermen[66].

Subsistence Exploitation

The unfortunate fact that some communities are now forced to harvest limpets and mussels for their basic subsistence has adverse effects on the intertidal environment[67]. In areas where subsistence exploitation takes place, the tendency is to harvest the chosen species almost to the exclusion of anything else. This drastically reduces the number of sexually mature adult organisms, and has two effects: the obvious one is a reduction in the number of young; the second is that unexploited species (algae, barnacles, etc) encroach on the territory that was previously held by the exploited species, thus reducing the space available for re-introduction of the exploitable species.

The Estuarine Environment

The estuarine environment is the meeting place between fresh and salt water. Because of the tendency of rivers to change quickly from placid streams to raging torrents, the estuarine environment is characterised by a fauna and flora that have a remarkable ability to adapt. Unlike the sea, where salinity is fairly constant, estuaries have a greater or lesser salinity depending on the inflow of fresh water from the rivers that feed them. Because of their adaptability, the organisms that live in estuaries thrive on the food resource that is brought to them by both the fresh and slat waters. This places estuaries among the most productive eco-systems in the world.

Properties of Estuarine Water

Because of the nature of the estuary (fed at one end by fresh water, and at the other by the sea), all estuaries will have a *gradient of salinity*. In general, the water will be saltier at the mouth than upstream. This has lead to the definition of estuaries as[68] '*those parts of a river that experience variations in salinity[69] due to the effects of sea water*'.

In the normal course of events, the wedge of salt water pushes deeper into the estuary as the tide rises. When it falls, it allows the fresh water to flow towards the mouth. The salt water (which is heavier than fresh water) will tend to sink, and the fresh water flows over it This causes layering - or *stratification* - which protects the organisms that live on the bottom of the estuary and are intolerant of low salinity. This constant change in salinity will affect which species can - or do - utilise the estuarine environment.

When the land that forms the catchment for the rivers feeding the estuary experiences drought or floods, the changes in the estuarine environment are often equally calamitous. Floods will drastically reduce the salinity, and droughts may cause the salinity to rise (only water evaporates; the salt remains behind).

Estuarine species are classified according to how they respond to these changes:

- ***Euryhaline*** species will tolerate wide changes in salinity (some of them live

[66]See '**General Regulations Governing Our Coast**' below.

[67]Coastal communities have always harvested limpets and mussels. The intensity of harvesting has, however, increased in recent years as a result of the decrease in food supplies from other sources.

[68]M&G Bannister: ***'The Living Shores of Southern Africa'*** Published by Struik. Cape Town 1981

[69]***Salinity*** is the measure of how much salt is present in the water. It is usually expressed as parts per thousand (abbreviated as ‰). Sea water generally has a salinity of 35 ‰ - i.e. there are 35 grams of salt in every kilogram of sea water.

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only in the estuarine environment);

- ***Stenohaline*** species will *not* tolerate much change in salinity, and will confine themselves to the lower reaches of the estuary, where the fresh water effect is minimal;
- ***Migratory*** species may enter the estuary - but only when conditions are favourable for them.

Many estuarine organisms have developed special methods of coping with these radical changes in their environment:

- Certain estuarine *bivalves* (especially *Dosinia hepatica*) will clamp shut when the salinity begins to drop, trapping the water in their shells and so maintaining a preferred salinity level for long periods (in a laboratory experiment, one specimen stayed alive for 23 days in distilled water. At the end of the period, the water inside the shell was still saline: 22$^{o}/oo$, although the water in the jar contained no salt);
- Many *crustaceans* can regulate the salinity of their tissue independent of the salinity of the surrounding water;
- Migratory *fish* and *prawn* species leave when the salinity drops too low as a result of flooding.

Water Temperature in Estuaries

Ocean temperatures change relatively slowly because they contain vast volumes of water. River waters, which are smaller in volume, tend to warm more quickly than the ocean in summer, and cool faster in winter. Because both feed water into the estuarine environment, and because estuarine waters are usually relatively shallow (and therefore easily warmed by the sun), the estuarine water temperature is generally less stable than sea water.

In the Knysna Estuary, temperature fluctuations of up to 15 ^{o}C have been measured during a single tidal period. This was due to a cold water up welling from the ocean's depths, and occurs during summer.

Such quick changes in temperature can be stressful to many of the organisms that live in our estuaries. Once again, however, those organisms that are most likely to be affected by temperature fluctuations have developed methods of coping with them. The mud prawn (*Upogebia africana*), for example, can tolerate temperatures as high as 32 ^{o}C. When the water temperature rises above this, they will retreat into their burrows in the mud - which is an excellent insulator against heat - and cease their normal habit of pumping water through the burrows. This slows the penetration of warm water into the cool sediment in which they live.

It is important to remember that everything in every eco-system[70] is connected in some way to everything else in the system. We should therefore not look at the effects of salinity and temperature individually. Naturally the one has an effect on the other, and, in combination, they have an effect on the organisms living in the estuary. Young Stumpnose fishes, for example, can withstand salinities of 20$^{o}/_{oo}$ to 65$^{o}/_{oo}$ at a temperature of 20 ^{o}C, but at 12 ^{o}C they can only tolerate a salinity of 20$^{o}/_{oo}$ to 35$^{o}/_{oo}$.

The Effects of Estuarine Water Movement

The Nature of the Estuarine Floor

[70] An ***eco-system*** can be defined as a complete community of organisms (plants and animals) and the given environment in which they live.

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Most estuaries have a narrow mouth to the sea, which shelters a broad, shallow area that again narrows at the head of the estuary, where the fresh water flows into the salt. The physical shape of the estuary thus has an effect on the speed of flow of the water, which in turn has an effect on where silt and other solids will be deposited in the estuary.

At the narrow mouth and head the water flow is rapid, and solids tend to be swept along with the current. The sediments at the bottom in these swift flowing areas are generally coarse and heavy. In the broad, shallower areas of the estuary, the rate of flow slows down, and solid particles that were suspended in the fast moving water will now settle to the bottom (this explains why estuarine mud is generally fine and light). The slow rate of flow also allows the very light weight organic particles to settle, and, where beach sand will usually contain only 1% organic matter, estuarine mud can contain up to 10% organics. This is an important source of food which contributes to the wide variety of life in our estuaries.

The mixture of salt and fresh waters also adds to the deposition of organics onto the estuarine floor. Fresh river water carries many tiny, negatively-charged particles of organic matter which cannot settle out[71]. When they enter the salt water, however, the charge is neutralised, and they can then settle to the bottom.

The Dangers of Siltation

It will have become obvious by now that estuaries exist as part of a chain - they are the link between the sea and the fresh water. This means that events that affect the rivers or the sea will often have a profound effect on the estuary. In South Africa, which is subject to periods of drought followed by periods of heavy rains and flooding, ***siltation*** is the biggest threat to the estuarine environment.

In an undisturbed state, the river will bring small amounts of silt into the estuary. This is desirable because it brings fresh organic matter to the estuary, and so replenishes the food resource. When the land in the river catchment becomes disturbed, however, soil erosion has the effect of increasing the rate of siltation in the estuary. This can have disastrous effects: the silt can literally smother the estuary floor. Studies by Professor Margaret Marker of the University of Cape Town have graphically illustrated the effects of siltation on the Knysna Lagoon[72] (one example cited was the considerable changes that have occurred in the shape and size of sand banks above the railway bridge in the period from 1973 - 1997).

The problem of siltation in estuaries whose mouths are prone to closing is somewhat different than in those whose mouths never close: in the drier months, when the flow of fresh water is minimal, the river cannot keep the mouth open through the scouring action of its water. The combined action of waves and currents will then cause a sand bar to build up across the estuary's mouth, and so close it off to the sea (when this happens, the salinity level may rise with increased evaporation - particularly if there is a drought and the fresh water supply cannot be replenished). When the rains do come, the river's water will build up behind the sand bar, and flood the adjoining land (called the ***flood plain***). Eventually the pressure on the sand bar becomes too great, and the water finally breaks through to the sea with considerable force. The scouring action so caused will clear the estuary bottom of unwanted

[71]The negative charges on the particles cause them to repel one another, and they remain held in suspension as *colloids*. Once the charge is neutralised by the salt in the sea water, the particles can *flocculate* (join together) and become heavy enough to settle out due to the force of gravity.

[72]Reported in the **Knysna Basin Project Final Report Back Meeting: Executive Summaries**, *Royal Society of South Africa, Thesen & Co & The Foundation for Research Development*. Knysna 1998

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silt, and the cycle can begin again.

If land adjoining the estuary has been developed for housing or farms, the estuary mouth is sometimes artificially opened prematurely. The resultant outflow is often too weak to scour out the excess silt. If this continues, the mouth will close more regularly than it should, and the estuary behind it may become progressively shallower, until it finally closes almost permanently.

Estuarine Fishes

Why Are Estuaries Important to Fish?

We can see from the above that estuaries are relatively calm and shallow bodies of water which provide a remarkable contrast to the turbulent seas along our coastline. Combined with their rich food resources, this makes the estuarine environment unique.

Continually changing factors such as salinity and temperature will naturally limit the number of species that can make use of estuaries. Still, there are about 80 species of fish that do utilise the estuaries during part, if not all, of their lives. Typically, fishes that fall into this group will spawn at sea - often close to the estuary mouth. Their eggs and larvae develop at sea, but once the juveniles reach about 15mm in length, they migrate *en mass* into the estuary (usually during spring and early summer). The warmer waters, rich food resource and relative protection from marine predators in the estuary provides a perfect environment for the quick growth of these juveniles. Most species will return to the sea at the age of about one year.

It has often been said that one of the most important role of estuaries is the provision of nursery grounds for these juvenile fishes. Recent research, however, has found that fishes associated with estuaries have differing levels of dependence on them.

These fish have been categorised as follows[73]:

- ***Category 1*** species that breed in estuaries;
- ***Category 2*** marine species that usually breed at sea, and whose juveniles show varying degrees of dependence on estuaries;
- ***Category 3*** marine species that occur in small numbers in estuaries, but are not dependent upon them;
- ***Category 4*** fresh water species whose penetration into estuaries is determined by salinity;
- ***Category 5*** species that use estuaries as transit routes between the marine and fresh water environments.

There are believed to be about 1 500 species of fish on the Southern African Coast. Why, then, is it so important to preserve the estuaries of the Garden Route? They are, after all, really only utilised by about 81 species?

Of the 81 estuarine-dependent fishes, 29 are considered to be sport-angling fish, and a further 21 can be utilised by man as food. The sport-angling fish have a particular interest for us here in the Garden Route. These fish are a definite tourist attraction. Their presence means that fishermen will be attracted to the area for the angling. These fishermen can be expected to boost the local economy through:

- The purchase of boats, rods, reels, and other equipment;
- Spending on accommodation;

[73]Whitfield, A: **Biology and Ecology of Fishes in South African Estuaries** Ichthyology Monograph Number 2: *JLB Smith Institute of Ichthyology*, Grahamstown 1988

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- Spending on fuel and vehicle maintenance;
- Spending on restaurants, food and groceries ;
- Spending on non-fishing entertainment whilst they are here; etc, etc

The knock-on effect of having these fish present in our estuaries is therefore enormous. When you consider that ***angling is only one of the attractions that estuaries provide for the holiday maker*** (others include swimming, diving, sailing, skiing, canoeing, bird-watching, etc, etc.), it becomes apparent that the presence of these estuaries has a profound effect on the local economy.

Checklist of Estuarine-Dependent Fishes of The Garden Route

The Knysna Lagoon is the largest estuary in the South Cape Coast, and has therefore been more intensively studied than an other estuary in our area. The following list of fishes (which was drawn up for the Knysna Lagoon) can therefore be taken to represent some of the important fishes present in all the estuaries in the Garden Route. Notes in brackets (...) denote species useful to man.

Category 1 Species that breed in estuaries;

Cape Silverside - Kaapse Spierinkie - *Atherina breviceps*

Barehead Goby - *Caffragobius nudiceps*

Super Klipfish- *Clinus superciliosus*

Estuarine Round Herring - Rivier-rondeharing- *Gilchristella aestuaria*

Knysna Seahorse – Knysna seeperdjie - *Hippocampus capensis*

Knysna Halfbeak – Knysna halfbek - *Hyporhamphus knysnaensis*

Kappie Blenny - *Omobranchus woodi*

Knysna Sand Goby- Knysna sanddikkop - *Psammogobius knysnaensis*

Checked Goby - *Redigobius dewaali*

Longnose Pipefish - Langneus pypvis *Syngnathus acus*

Bellybarred Pipefish - *Syngnathus sp..*

Category 2 Marine species that usually breed at sea, and whose juveniles show varying degrees of dependence on estuaries;

Kob – Kabeljou - *Argyrosomus japonicus* (Angling & Food)

Blacktail – Dassie - *Diplodus sargus* (Angling & Food)

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Ten Pounder - Tien-ponder, Springer - *Elops machnata* – (Angling & Food)

Sea Barbel – Seebarber - *Galeichthus feliceps* – (Angling & Food)

Spotted Halfbeak - Gevlekde Halfbek - *Hemiramphus far*

Cape Sole - Kaapse Tongvis - *Heteromycteris capensis*

Garrick – Leervis - *Lichia amia* (Angling & Food)

White Steenbras – Witsteenbras - *Lithognathus lithognathus (*Angling & Food)

Southern Mullet - Suidelike Harder - *Liza richardsoni* (Food)

Striped Mullet - Streep harder - *Liza tricuspidens* – (Angling & Food)

Cape Moony - Kaapse Maanvis - *Monodactylus falciformis* (Food)

Flathead Mullet – Platkopharder - *Mugil cephalus* (Food)

Baretail Flathead - Balkstert Platkop - *Platycephalus indicus* (Angling & Food)

Spotted Grunter - Spikkel knorder - *Pomadasys commersonni* (Angling & Food)

Shad – Elf - *Pomatomus saltatrix* – (Angling & Food)

Cape Stumpnose - Kaapse Stompneus - *Rhabdosargus holubi* (Angling & Food)

Natal Stumpnose - Natalse Stompneus - *Rhabdosargus sarba* (Angling & Food)

White Stumpnose – Witstompneus - *Rhabdosargus globiceps* (Angling & Food)

Strepie – Strepie - *Sarpa salpa* (Angling & Food)

Sand Sole - Swarthand tongvis - *Solea bleekeri*

Thornfish – Doringvis - *Terapon jarbua* (Angling)

Black Spotted Electric Ray – Drilvis - *Torpedo fuscomaculata*

Category 3 Marine species that occur in small numbers in estuaries, but are not dependent upon them;

Blaasop – Blaasop - *Amblyrhynchotes honckenii*

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Blue Stingray - Blou Pylstert - *Dasyatis chrysonata*

Zebra - Wildeperd *of* Bontrok - *Diplodus cervinus* (Angling)

Cape Anchovy - Kaapse Ansjovis - *Engraulis capensis* (Food)

Knysna Rockcod - *Epinephalus sp..*

Backwater Butterfly Ray - Rem-Vlinderrog - *Gymnura natalensis*

Sand Steenbras – Sandsteenbras - *Lithognathus mormyrus* (Angling & Food)

Eagle Ray – Arendrog - *Myliobatis aquila*

Serpent Eel – Sandslangetjie - *Ophisurus serpens*

Piggie – Varkie - *Pomadasys olivaceum*

Lesser Guitarfish - Kleiner Sandkruiper - *Rhinobatus annulatus* (Angling)

Steentjie – Steentjie - *Spondyliosoma emarginatum* (Angling & Food)

Category 5 Species that use estuaries as transit routes between the marine and fresh water environments.

Eel – Paling - *Anguilla mossambica*

Conger Eel – Paling - *Anguilla sp.*

Freshwater Mullet – Varswaterharder - *Myxus capensis* (Food)

Human Activities That Threaten Our Estuaries

We have already seen that estuaries form a link between our rivers and the sea, and how soil erosion can have an effect on estuaries through siltation. We have thus become aware that the estuarine system is a very delicately balanced one - and that this makes it very vulnerable - even to what might appear to be small changes.

Pollution of estuarine water can, of course, have the same effect on the estuaries that pollution of sea water has on the shore. At the same time, there are other human activities that pose serious and direct threats to the health of estuaries: these include construction in the estuaries themselves, construction of dams up-stream from the estuaries, and agriculture.

Construction Within Estuaries

Where bridges, causeways and harbours are built in estuaries, changes can occur that affect the entire estuary - not just the area around which the construction takes place. In the Southern Cape, where the main arteries of communication - roads and railways - often lie close to the shore, they must inevitably cross some of our estuaries. The danger of building bridges and

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causeways across the estuaries is that the rate of flow of the water can be affected. This can radically alter the deposition of silt, and may even affect the levels of water in the estuary.

For reasons of economy, most bridges across estuaries are built with as short a span as possible. This means that solid berms (or embankments) must be built across the estuary - often across the mud flats or reed beds - from both sides. The (often narrow) bridge itself is then built in the middle, to link the two berms. This limits the amount of sea water that can push up into the estuary, which reduces the size of the salt marshes.

Where estuarine vegetation is severely affected as a result of changes to the pattern of water movement, one of two things can happen: either the vegetation dies off and exposes the banks to a serious threat of erosion, or weeds encroach onto the salt marshes, and so choke them.

In Wilderness, changes to the water flow in the Touw River Flood Plain as a result of the construction of bridges and causeways for roads and railway lines, combined with the artificial opening of the mouth (a danger already described) have resulted in an increased growth of the reeds (*Phragmites sp.*) surrounding the lagoon. The casual observer will have noticed that the surface area of the water in this system has been drastically reduced over the last fifteen or twenty years.

In Plettenberg Bay, where a bridge (with a short span and long, connecting berms) was built across the Bitou River, surveys have found that there is a richer fauna and flora below the bridge than above it.

Bridges and causeways also have the effect of slowing down flood waters that periodically rush down our rivers[74].

The obvious way to prevent these problems from occurring, is to build bridges with long spans on narrow pylons - they have the least effect on water movement patterns.

Construction of Dams Upstream From Estuaries

The construction of dams upstream from estuaries can considerably reduce the amount of fresh water that runs into the estuaries. In 1981 it was reported that 40% of all river water in South Africa was dammed. This is necessary because our fresh water supply is so limited. However, it does have the effect of reducing inflows and flooding intensity into the estuaries. The results are (a) that the fresh water flow is insufficient to counteract the flow of sea-water, and so cannot scour out the sea sand that is brought into the system (the effects of this have already been described), and (b) that salinity levels in estuaries whose mouths have a natural tendency to close may rise beyond safe levels. In the South Cape, where we have relatively few dams, this may not become a problem for our estuaries. However, it is as well to take note of what *could happen* if we are not *very cautions*: the St Lucia Estuary in KwaZulu-Natal (whose fresh-water inflow has been reduced by diversion of its waters for irrigation schemes, the damming of its rivers, and the creation of plantations of exotic timbers) has been extensively studied. When its mouth closes, salinity can rise to 120°/oo - a toxic level that will kill most estuarine organisms. Studies have shown, however, that if fresh water inflow had *not* been reduced, salinity would probably rise to only 55°/oo, which is within the tolerance level of

[74] Although it was not built on an estuary, the town of Laingsburg is a famous - and tragic - example of how bridges across a river can prevent floodwaters from flowing as quickly as they should. During the 1981 floods, the bridges on the Buffels River slowed down the water to the extent that the town was flooded. Many lives were lost, and Laingsburg was left in ruins.

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most estuarine species.

Agricultural and Horticultural Threats To The Estuarine Environment

Three aspects of agriculture today are of concern to those wishing to conserve or estuaries: soil erosion, fertilisation and the use of pesticides.

The effects of soil erosion on our estuaries have already been discussed. It has been suggested that cutting down of natural riparian vegetation[75] along riverbanks is the major cause of soil erosion in South Africa. This marginal vegetation binds the river banks, and so prevents them from washing away. The presence of healthy, indigenous, marginal vegetation along the riverbanks would drastically reduce the siltation of our estuaries. Unfortunately, some farmers have chosen to ignore this, and have cleared the marginal vegetation to make way for cultivated fields (although this practice is illegal in South Africa, prosecutions in this regard are rare). Two estuaries of KwaZulu-Natal (the Umzimvubu at Port St Johns and Umzimkulu at Port Shepstone) - which were once both deep enough to be used as ports by coastal shipping - have now silted up to the point where it is possible to wade across them.

Silt can cloud the water so that sunlight cannot penetrate into the estuary and provide the vital ingredient in the ***photosynthesis*** process: this reduces the food supply.

In the Knysna Lagoon, siltation as a result of soil erosion during the 1996 floods may have been a significant contributing factor to the damage that the Oyster industry suffered in that year.

Fertilisation of agricultural fields, home gardens and sports fields can also have an effect on our estuaries. Excess fertiliser that washes away is carried into the rivers and eventually into the estuaries that they feed. While small amounts of fertiliser increases plant production in these waters, larger amounts could cause ***eutrophication*** - an excessive growth of plants or phytoplankton in the water that can choke the system (this has rarely, if ever happened in South African estuaries, although there is evidence of enrichment in the Hartenbos Estuary due to growth of the phytoplankton).

Pesticides are a threat to the estuarine environment because they have a cumulative effect: when a predator feeds on prey that has been infected by a pesticide, it absorbs the pesticide into its own tissues. The organisms in the higher branches of the food chain are therefore at greatest risk. Whilst this has not yet become a problem for us, it is necessary that we in the Southern Cape guard against it happening here. The results of not caring could be disastrous. In one well-known example, an entire, multi-million dollar prawn-producing industry in Texas in the USA collapsed because the concentration of pesticides in the prawns became so high that they became unfit - indeed, unsafe - for humans to eat.

Lessons Learned From The Knysna Basin Project

It has already been mentioned that the Knysna Estuary, which is the largest in the Southern Cape, has been the subject of intensive study for many years. The most recent - and perhaps most comprehensive - has been the study undertaken by the Knysna Basin Project. Because of its size, position and importance, the Knysna Estuary can be taken as representative of all the estuaries in the Garden Route. The lessons learned will be invaluable in the future, and can easily be applied to all these estuaries.

In his discussion guidelines for the concluding session of the final report-back meeting

[75] ***Riparian vegetation*** is that which grows in the vicinity of the river banks.

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on the Knysna Basin Project[76], Dr Allan Heydorn noted that the Knysna Estuary has

> "***..exceptional scenic beauty and biological diversity, an abundance of water by South African standards, commercially viable natural resources, e.g. timber, estuarine and marine environments and life forms, high-quality residential areas, vast recreation and tourism potential and a great 'sense of place'..***"

These features, he said, have attracted vast numbers of people to the area both to live and to visit here. Aquatic systems such as the Knysna Estuary and its floodplain tend to be resilient to a certain amount of stress put upon them by our increasing use of them. This is particularly so where there is a healthy, daily exchange of sea water, which is what happens in the Knysna Lagoon. We should be aware, however, that these stresses are beginning to tell on the lagoon, and that it is beginning to reach its ***carrying capacity*** (the system's ability to withstand the stresses created by encroachment). This will become a greater problem for Knysna, especially where there is excessive competition for the natural resources (through factors such as a human population density that is too great), and "when environmental utilization takes place in an uncoordinated manner"[77].

Knysna is now in the fortunate position of having a large base of information about its natural environment, and how human activity affects it. What is important now is that this information should not be 'lost': it must be used by the local authorities to the benefit of both the environment and our people. In order to best do this, the authorities must provide for communication between themselves and an independent advisory body which would be able to assist them in making their - often difficult - decisions.

In general, the estuaries of the Southern Cape can be said to be in a relatively good state of health. If we follow and apply the learning acquired through initiatives such as The Knysna Basin Project, we can be assured not only of a safe and healthy place in which to live, but that the attractions of our environment will continue to create sustainable employment opportunities.

The Pelagic Environment

So far, we have looked at the sea shore and the estuaries, which both have a direct and immediately recognisable affect on the tourism industry. We have also seen that the sea provides us with innumerable opportunities in tourism, and so it is as well to know a little about that part of the deep sea that has perhaps the most direct influence on our daily lives - the ***Pelagic Environment***.

The Phytoplankton

Only the top 100 to 200 metres of the sea can support water-borne plants that have the ability to photosynthesise. This 'surface skin', in which many marine organisms float with the currents or swim freely, is known as the ***pelagic zone***. Importantly, it is in this zone that the ***phytoplankton*** - or algae - can be found. These are microscopic vegetative organisms, which are thought to account for as much as 90% of the world's plant production. They live only in the *euphotic* layer of the pelagic zone. It is in here that the phytoplankton are able to find and combine the two ingredients that they need for photosynthesis: sunlight filtering through the

[76]Reported in the **Knysna Basin Project Final Report Back Meeting: Executive Summaries**, *Royal Society of South Africa, Thesen & Co., & The Foundation for Research Development*. Knysna 1998

[77]*ibid.*

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water from above, and nutrients welling up from below.

Differing conditions in the world's oceans means that they will produce differing amounts of phytoplankton at differing times. In the cool winter months, the temperate oceans - especially those near the Poles - receive only limited amounts of sunlight. They are therefore able to sustain only a small rate of photosynthesis. In the tropics, the upper (warm) layer of water is separated from the lower (cold) layers by a phenomenon known as the *thermocline*. This thermocline layer - in which there is a rapid change in temperature - prevents the cool and warm waters from mixing together. The nutrients held in the cold water can therefore not pass into the warm water, and photosynthesis cannot take place (it must always be remembered that without both *nutrients* **and** *sunlight*, the process can *never* begin).

In general, it is the seas above the continental shelves to the west of the African and American continents, as well as those around Japan and Newfoundland, that produce the greatest amounts of phytoplankton. These areas are subject to massive upwellings of cold, nutrient-rich water from the deepest parts of the ocean, which are largely a result of the prevailing off-shore winds[78]. Once these nutrients reach the sunlit pelagic zone, the process of photosynthesis - or *primary production* - can begin.

In addition to the important continental shelf region of the Atlantic Ocean on our West Coast, South Africa has the ***Agulhas Bank***, which is a broad, shallow area that lies in the Indian Ocean to the south of the Cape Coast (it stretches 200 km south of Cape Agulhas, and is no more than 200 metres deep). This bank is also an important area where primary production can occur, because it, too, is influenced by winds which create upwellings of nutrient-rich water.

The rate of primary production on both the West Coast and the Agulhas Bank will naturally depend largely on the force of the wind: without strong winds, upwellings would generally not take place.

In general, the zooplankton and fish that feed on the phytoplankton will be drawn to areas of high primary production, and the mammals and birds that prey on them will follow in turn. However, the pattern is made much more complex because of the life-cycles of the animals themselves, as well as the effects of the ocean's currents.

The Pelagic Food Chain

The presence of the phytoplankton in the pelagic zone is the key to understanding its food chain. All animals in this zone are ultimately dependent on them for food because, even if they do not feed directly off them, they will probably prey on something that *does*!

The pelagic zone provides no camouflage for its inhabitants to hide behind, and most of its inhabitants must therefore remain small and transparent in order to survive. This, together with the lack of a solid base on which to settle, means that the reproductive processes must be very fast in order to ensure the continuation of the species. The phytoplankton have adapted to this and can reproduce quickly (if they have the required nutrients and sunlight) to form *algal blooms*[79]. These are eagerly sought out by the animals of the Pelagic zone, and, where they

[78]For an explanation of how wind affects the sea, see **Currents, Tides & Waves** above.

[79]The poisonous ***Red Tides*** which periodically occur - especially on the West Coast - are algal blooms caused by phytoplankton. The red colour is caused by a spot of red pigment on each individual organism, and is used to shield its light sensor. Most red tides are caused by dense concentrations of the plankton *Noctiluca miliaris*. After a bloom, when they have consumed all the available nutrients in the water, they die. The decaying process that

occur with regularity (such as on our West Coast and Agulhas Bank), will form the basis of productive commercial fisheries.

Most of the animals higher up in the food chain do not feed directly on the phytoplankton. They prefer to prey on the ***zooplankton***. This enormous group of animals includes the ***krill*** (*Euphausiids*) - the tiny crustaceans that form the staple diet of many whales, fish and birds.

Not all zooplankton are herbivores - many prey on other zooplankton. And not all are tiny - bluebottles and jellyfish fall into the zooplankton category.

Smaller fish such as the commercially important anchovy, sardines and round herrings, feed on the plankton. In order to protect themselves by confusing their predators, these fish congregate in large shoals. However, these shoals show up clearly on fish finders carried by commercial fishermen, and are easily caught in the trawl nets[80].

The smaller fish are preyed upon by larger fish - snoek, yellowtail, hake, etc., as well as by certain mammals (such as seals) and birds (such as penguins).

The cycle is a never-ending one, and, in order to prevent it from coming to a grinding halt, it is most important that man's impact on the pelagic environment is kept to a minimum. We have seen how pollutants such as oil spills, poisons, fertilisers, human waste and factory effluent can interrupt the estuarine environment and the sea shores. It follows that they can have a similar effect on the pelagic food chain. Because we as a species rely so heavily on this zone, its pollution could have dire consequences not only for the animals that live in the sea, but also for the human race.

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ensues depletes the surrounding water of its Oxygen, causing the death of fish and other marine life in the area.

Another species that is important in red tides - particularly on our West Coast - is *Gonyaulax catenella*. This plankton has the ability to concentrate toxic substances in its tissues, and these poisons are passed on to any organism that prey on them. This is particularly dangerous when the *Gonyaulax* is consumed by mussels (especially to humans: eating just two or three poisoned mussels will kill a grown man).

[80]Because fishing on this scale is a relatively new development, the fish have not been able to evolve to the point where they can replenish their numbers as fast as they are removed. It is very important, therefore, that the fishing industry is regulated (or regulates itself) in order to ensure (a) sustainability, and (b) that enough fish are left behind for the survival of other predators.

Key:	*BR = Breeding resident	*BM = Breeding migrant	*N-BM = Non-breeding migrant
	(A) Afrikaans name	(X) Xhosa name	(G) German name

Checklist of Important Pelagic Fishes of The Garden Route

It has already been noted that there are about 1500 species of fish on the Southern African Coast. Few of them, however, are important as a food resource or as tourist attractions to the Southern Cape. The list below is therefore intended only as a broad outline of the wide variety present in our seas.

Fish utilised by commercial fishermen for the food industry, sought after by sports anglers, or having poisonous flesh have been annotated.

THE CARTILAGINOUS FISHES

Family *CALLORHYNCHIDAE* - The Elephant Fishes

Elephant Fish
Josef
Callorhynchus capensis (Sports angling)

Family *CARCHARHINIDAE* - The Grey Sharks

Copper Shark
Koperhaai
Carcharhinus brachyurus (Sports angling)

Blacktip Shark
Swarttiphaai
Carcharhinus limbatus (Sports angling)

Dusky Shark
Donkerhaai
Carcharhinus obscurus

Soupfin Shark
Vaalhaai
Galeorhinus galeus (Food)

Hound Shark
Hondhaai
Mustelus canis

Gully Shark
Sloephaai
Triacus megalopterus

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Family *DASYATIDAE* The Stingrays

Blue Stingray
Blou Pylstert
Dasyatis pastinacus

Honeycomb Stingray
Heuningkoek Pylstert
Himantura uarnak

Family *LAMINADAE* - The Mackerel Sharks

Great White Shark
Witdoodshaai *of* Blouhaai
Carcharodon carcharias (Sports angling)

Family *MYLIOBATIDAE* - The Eagle Rays

Eagle Ray
Arendrog
Myliobatus aquila

Bull Ray
Bulrog
Pteromylaeus bovinus

Family *ODONTASPIDIDAE* - The Ragged-Tooth Sharks

Spotted Ragged-Tooth Shark
Gespikkelde Skeurtandhaai *of* Vaalpenshaai
Odontaspis tauris (Sports angling)

Family *RHINOBATIDAE* - The Sandsharks

Lesser Sandshark
Kleiner Sandkruiper
Rhinobatus annulatus (Sports angling)

Family *SCYLIORHINIDAE* - The Catsharks

Striped Cat Shark
Streephaai
Poroderma africanum

Family *SPHYRINIDAE* - The Hammerheads

Hammerhead Shark
Gladde Hammerkophaai
Sphyrna zygaena (Sports angling)

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Family *SQUALIDAE* - The Dogfish

Spotted Spiny Dogfish
Doringhaai *of* Penhaai
Squalus acanthias (Food)

Bluntnose Spiny Dogfish
Grootoog Penhaai
Squalus megalops (Food)

THE BONY FISHES

Family *CARANGIDAE* - The Kingfishes and Yellowtails

Garrick
Leervis
Lichia amia (Sports angling)

Cape Yellowtail
Reuse Geelstert
Seriola lalandi (Sports angling and food)

Horse Mackerel
Maasbanker
Trachurus capensis (Food)

Family *CHELIODACTYLIDAE* - The Fingerfins

Butterfish
Steenklipvis
Chirodactylus brachydactylus

Bank Steenbras
Chirodactylus grandis (Sports angling and food)

Family *CLIUPEIDAE* - The Herrings and Sardines

South African Pilchard
Suid-Afrikaanse Pelser
Sardinops ocellatus (Food)

Family *CORACINIDAE* - The Galjoens

Galjoen
Galjoen
Coracinus capensis (Sports angling)

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Family *CORYPHAENIDAE* - The Dolphinfishes

Dolphinfish
Dorade
Coryphaena hippurus (Sports angling)

Family *ECHENEIDAE* - The Suckerfishes

Shark Sucker or **Remora**
Haai-Remora *of* Platkoploodsvis
Echeneis naucrates

Family *ELOPIDAE* - The Springers

Tenpounder
Springer
Elops machnata (Sports angling)

Family *ENGRAULIDAE* - The Anchovies

Anchovy
Ansjovis
Engraulis capensis (Food)

Family *GEMPYLIDAE* - The Snoek

Snoek
Snoek
Thyrsites atun (Sports angling and food)

Family *ISTIOPHORIDAE* - The Billfishes

Sailfish
Seilvis
Istiophorus platypterus (Sports angling)

Black Marlin
Swart Marlyn
Makaira indica (Sports angling and food)

Blue Marlin
Blou Marlyn
Makaira nigricans (Sports angling and food)

Striped Marlin
Gestreepte Marlyn
Tetrapturus audax (Sports angling and food)

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Family *MERLUCCIDAE* - The Hakes

Hake
Stokvis
Merluccius capensis (Food)

Family *MUGILIDAE* - The Mullets

Southern Mullet
Suidelike Harder
Liza richardsonii (Food)

Flathead Mullet
Platkopharder
Mugil cephalus (Food)

Family *OPHIDIIDAE* - The Cuskeels

Kingklip
Koningklip
Xiphiurus capensis (Food)

Family *PERCICHTHYIDAE* - The False Rockcods

Wreckfish
Polyprion americanus (Food)

Family *POMODASYIDAE* - The Grunters

Spotted Grunter
Gespikkelde Knorder
Pomadasys commersonni (Sports angling)

Striped Grunter
Gestreepte Knorder
Rhonciscus striatus

Family POMATOMIDAE **- The Elf**

Elf or **Shad**
Elf
Pomatomus saltatrix (Sports angling)

Family *SCIAENIDAE* - The Kobs

Kob
Kabeljou
Argyrosomus hololepidotus (Sports angling and food)

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Geelbek
Geelbek
Atractoscion aequidens (Sports angling and food)

Tasselfish
Baardman
Umbrina ronchus (Food)

Family *SCOMBRIDAE* - The Mackerels

Frigate Tuna
Koeël-Tuna
Auxis thazara (Sports angling)

Skipjack
Streeppens-Tuna
Katsuwonis pelamis (Sports angling and food)

Mackerel
Makriel
Scomber japonicus (Food)

Longfin Tuna
Langvin-Tuna
Thunnus alalunga (Sports angling and food)

Yellowfin Tuna
Geelvin-Tuna
Thunnus albacares (Food)

Family *SCORPAENIDAE* - The Scorpionfishes

Blackbelly Rosefish
Jacopever
Helicolenus dactylopterus (Food)

Family *SERRANIDAE* - The Rockcods

Spotted Rockcod
Katgesig-Klipkabeljou
Epinephelus andersoni (Sports angling)

Yellowbelly Rockcod
Geelpens-Klipkabeljou
Epinephelus guaza (Sports angling)

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Family *SILLAGINIDAE* - The Smelts

Silver Sillago
Silwer Sillago
Sillago sihama (Food)

Family *SOLEIDAE* - The Soles

East Coast Sole
Ooskus-Tongvis
Austroglossus pectoralis (Food)

Family *SPARIDAE* - The Sea Breams and Stumpnoses

Silverfish or **Carpenter**
Silwervis *of* Kapenaar
Argyrozona argyrozona (Food)

Frans Madam
Karel Grootoog
Boopsoidea inornata (Food)

Dageraad
Dageraad
Chrysoblephus cristiceps (Sports angling)

Red Stumpnose
Mighel *or* Bont Dageraad
Chrysoblephus gibbiceps (Sports angling and food)

Roman
Roman
Chrysoblephus laticeps (Food)

Musselcracker
Poenskop
Cymatoceps nasutus (Sports angling)

Zebra
Wildeperd
Diplodus cervinus (Sports angling)

Blacktail
Dassie
Diplodus sargus (Sports angling)

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White Steenbras
Witsteenbras
Lithognathus lithognathus (Sports angling)

Sand Steenbras
Sandsteenbras
Lithognathus mormyrus

Blue Hottentot
Baster Hottentot *of* Blou-Hottentot
Pachymetapon aeneum (Sports angling)

Red Steenbras
Rooisteenbras
Petrus rupestris (Sports angling)

Seventyfour
Vier-en-Sewentig
Polysteganus undulosus (Sports angling)

Panga
Panga
Pterogymnus laniarius (Food)

White Stumpnose
Witstompneus
Rhabdosargus globiceps (Sports angling and food)

Cape Stumpnose
Kaapse Stompneus
Rhabdosargus holubi (Sports angling)

Strepie
Strepie
Sarpa salpa

Silver Steenbras
Wit Biskop
Sparodon durbanensis (Sports angling)

Steentjie
Steentjie
Spondyliosoma emarginatum (Sports angling and food)

Family *TACHYSURIDAE* - The Sea Catfishes
Sea Barbel

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Arius feliceps

Family *TETRAODONTIDAE* - The Puffers

Evileyed Puffer
Boosoog-Blaasop
Amblyrhynchotes honckenii
Poisonous - the flesh of the puffers should never be eaten or fed to animals.

Family *TRIGLIDAE* - The Gurnards

Cape Gurnard
Kaapse Knorhaan
Trigla capensis (Food)

Family *TRICHIURIDAE* - The Cutlass Fishes

Cutlassfish
Haarstert
Trichiurus lepturus (Food)

Family *ZEIDAE* - The John Dories

Target John Dory
Jandorie
Zeus faber (Sports angling and food)

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Checklist of Marine Mammals of The Garden Route

The checklist below contains those mammals that are recorded for the Southern Cape by Smithers[81]. They are all mammals that live all their lives in the oceans.

Order *Cetacea*

Whales and Dolphins

Sub-Order *Odontoceti*

Toothed Whales

Family *ZIPHIIDAE* - The Beaked Whales

True's Beaked Whale
True se Snoetwalvis
Mesoplodon mirus

Before 1959, this whale was known only from 14 specimens that had washed ashore on the coasts of Scotland, the Outer Hebrides, and Florida in the USA. In 1959, an adult male was stranded at Wilderness, in 1969 a pregnant female with calf washed up at Mossel Bay, and two more strandings have occurred on this coast since then. The presence of the female with calf has lead scientists to believe that these whales may breed in the warm waters of the Southern Indian Ocean. Length 4.8 to 5.3 metres.

Layard's Beaked Whale
Layard se Snoetwalvis
Mesoplodon layardii

Very little is known of this whale, which appears to be confined to the southern oceans of the world. Length about 6 metres.

Blainville's Beaked Whale
Blainville se Snoetwalvis
Mesoplodon densirostris

This whale is considered to be non-migratory, and appears to be confined to the warm oceans. It is not often sited, and what little knowledge we have of it comes from stranded specimens. Strandings in South Africa have been concentrated between Mossel Bay and East London. Length about 4.7 metres.

Gray's Beaked Whale
Gray se Snoetwalvis
Mesoplodon grayi

Thought to inhabit most of the southern oceans. 85% of strandings in South Africa have occurred between December and April, which has lead scientists to believe that this is a migratory species. Most South African strandings have occurred between Mossel Bay and Port Elizabeth. Length about 5.6 metres.

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[81]Smithers, RHN **The Mammals of The Southern African Sub-Region**; *University of Pretoria*, Pretoria 1983

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Cuvier's Beaked Whale
Cuvier se Snoetwalvis
Ziphius cavirostris

Found throughout the world's deeper, warmer oceans. The largest specimen recorded in South Africa was 5.97 metres.

Family *PHYSETERIDAE* - The Sperm Whales

Sub-Family *KOGIINAE*

Pygmy Sperm Whale
Dwergpotvis
Kogia breviceps

Found throughout the world, but not well-known. Most of the available knowledge comes from standings as these whales are very rarely sighted at sea. It is thought that this species is not migratory. The largest South African Specimen was 3.25 metres long.

Dwarf Sperm Whale
Miniatuurpotvis
Kogia simus

This species is not well known. Most strandings on our coast occur between Saldanha Bay and East London, and it appears that they are not migratory. They may be associated with the region of mixed waters between the Benguela and Agulhas Currents. Reach 2.6 metres in length.

Sub-Family *PHYSETERINAE*

Sperm Whale
Potvis
Physeter macrocephalus

The common name for this whale refers to a glistening, white, waxy substance (contained in a complex organ in the animal's brain) called *spermaceti* which becomes a clear, viscous fluid at body temperature, and is used extensively in the cosmetics industry.

The sperm whale is easily recognised at sea because it has no dorsal fin. It is a deepwater species that largely confines itself to the edges of the continental shelf, and to areas in which currents flow in opposite directions to one another - particularly near the equator. Calving occurs in South African waters between November and June. The new-born calf is about 4 metres long, and suckles for about 24 months. The young may reach sexual maturity at about 9 years, but will only reach complete physical maturity at 29 years (males) and 24 to 25 years (females). The life span is estimated to be 50 years.

This species performs the longest dive of all the whales: they can remain submerged for up to 90 minutes, with 60 minute dives often being recorded. The initial blow that they emit when they surface can attain an estimated height of 7 metres. The single blow-hole produces a jet of water at an angle of about 45°. They have been recorded diving to a depth of 1 145 metres, and it is thought that they swim along the ocean floor with their mouths open to collect food (they feed on squid). They usually swim at speeds of about 3 knots (6 km per hour), but can attain 20 knots (about 40 km

per hour).

Sperm whales are aggressive, and have been known to attack whaling ships by ramming them with their heads, tails and even their teeth. They are very sensitive to the slightest noise, and the old whale hunters were well aware that even the clink of an oar in a rowlock could frighten them away. Groups will help a wounded member to the surface, and will encircle an endangered member, splashing their tails to frighten predators.

The largest sperm whales on record were 19 metres (male) and 17 metres (female).

Family *DELPHINIDAE*
Dolphins, Pilot Whales, Killer Whales & False Killer Whales

Risso's Dolphin
Risso se Dolfyn
Grampus griseus

These dolphins are generally only seen well off-shore in schools of about 14 specimens

Long-Finned Pilot Whale
Langvinloodswalvis
Globicephala melaena

This whale is largely confined to cold currents (such as the Benguela), but isolated strandings have occurred on the South Cape Coast. Males may reach 6 metres: females, 5 metres.

Killer Whale
Moordvis
Orcinus orca

Killer whales are found in all the oceans of the world, although the largest concentrations are in the cold Arctic and Antarctic waters. At least 8 strandings have been recorded during this century on the South Cape Coast.

The killer whale feeds on fish, birds and marine mammals, including seals, dolphins and other whales. They hunt in well organised packs, particularly when they attack larger whales and schools of dolphins. There have been no records of attacks on man, and, although they are curious of divers who enter their territory, they do not disturb them. They are generally well known because they appear to accept captivity reasonably well. They can be taught to perform in oceanaria, where they are known to bond with their trainers.

In South Africa, male killer whales reach about 7.6 metres, and the females 5.8 metres.

Common Dolphin
Gewone Dolfyn
Delphinus delphis

The common dolphin is found throughout the warmer oceans, and are usually associated with temperatures above about 14° C. They feed on fish (hey appear to have a

preference for pilchard and herring)and squid. They are gregarious, and have a well defined social hierarchy. They often swim together in large groups (of up to 5000 individuals). They cannot dive very deep, and their longest dives usually last no longer than four minutes.

Common dolphins are well known for their acrobatic leaps. They can jump about 3 metres out of the water, and will usually do so when the water is calm before rain. They appear to jump for sheer joy.

Males reach about 2.5 metres, and females about 2.4 metres in length. Adults can weigh up to 163 kg.

Long-Snouted Dolphin or **Spinner Dolphin**
Langsnoetdolfyn *of* Toldolfyn
Stenella longirostris

This dolphin is common in the warmer oceans of the Southern Hemisphere. The common name 'spinner' comes from their habit of jumping out of the water and spinning in mid air. They feed on squid, and can attain a length of 2.1 metres.

Striped Dolphin
Streepdolfyn
Stenella coeruleoalba

The striped dolphin is found in most warm waters (in tropical seas as well as in the warmer waters of temperate oceans). They swim in schools of up to several hundred individuals. They prey on fish and squid, and are known to take species of fish that live at depths of about 200 metres.

They comprise about half of all dolphins caught by the Japanese dolphin fishery.

Humpback Dolphin
Boggelrugdolfyn
Sousa plumbea

These dolphins live in the tropical and sub-tropical waters of the Indian Ocean. Observations at Plettenberg Bay and Algoa Bay suggest that they are not migratory. It is thought that they confine themselves to a narrow coastal strip about 1 kilometre from the shore, and that they rarely enter water that is more than 20 metres deep. They feed on fish that are associated with rocky reefs.

Males can reach 2.8 metres in length, with a weight of 284 kg.

Atlantic Ocean Bottle-Nosed Dolphin
Atlantiese Oseaan-Stompneusdolfyn
Tursiops truncatus

These dolphins are widely distributed in the Atlantic as well as in other oceans of the world, and have been well recorded on our coast. They move in schools of up to 500 individuals, (although the average size of the groups is 22 to 30), and have a well-defined social hierarchy. They feed on squid and fish, and can attain a length of about 3 to 3.2 metres.

This species is known for its intelligence and, because it takes training easily, it is very popular with oceanaria.

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Indian Ocean Bottle-nosed Dolphin
Indiese Oseaan Stompneusdolfyn
Tursiops aduncus

Some authorities believe that these two species (Atlantic and Indian Ocean Bottle-Nosed Dolphins) are in fact different races of the same species, with different geographical distributions. The main difference in appearance is in the length of the snout, which is somewhat shorter in the Indian Ocean species. There are, however, differences in internal anatomy, and in the arrangement of teeth, etc.

This dolphin lives in the coastal waters of much of the Indian Ocean, as well as in the Red Sea, the China Sea, and other warm-water seas. They swim in groups of about 50 individuals, with at least one record (in Algoa Bay) of a school of about 2 000 individuals. The groups have a well-defined social hierarchy. They often swim at right angles to the breakers, in water that may be as shallow as 1 metre. They feed on fish and squid, and will hunt in a pack which drives and traps schools of pelagic fish. They can reach a length of about 2.5 metres, and weight of 188 kg.

Sub-order *Mysticeti*
Baleen Whales

Family *BALAENIDAE* - The Right Whales

Pygmy Right Whale
Dwergnoordkaper
Caparea marginata

Although they are found in most of the southern oceans, all the South African records of the Pygmy Right Whale come from the area between False Bay and Algoa Bay. They are considered to be rare, and only about 40 have been recorded in the (world-wide) scientific literature as being captured or stranded. They feed on plankton, and can attain a length of about 6 metres.

Southern Right Whale
Suidelike noordkaper
Balaena glacialis

The common name comes from the early days of whaling: these were the '*right*' whales to catch because they floated after being killed, which made the removal of their long baleen plates and collection of their oil relatively easy. The baleen was used to make stiffeners for products such as ladies' corsets and parasols, and the oil, which was obtained from the whales' blubber, was used in the cosmetics industry and for fine lubricants, etc.

From the late 1700's to about 1805, an estimated 12 000 Southern Right Whales (usually mothers and their calves) were killed off the South African coast - mostly by ships flying the American, British and French flags. Throughout the 19th Century, and until the early years of the 20th Century, shore-based whaling stations were maintained in places such as Plettenberg Bay and Mossel Bay. During this entire period, however, only about 1 580 whales were killed by South Africans. In 1908 steam-powered whalers

hunting with cannon-fired harpoons took over from rowing boats and hand-held harpoons. But from then until 1938, the average catch was only about 3 per year. Despite the advent of this modern technology, it had become obvious that the number of right whales that had survived was critically low. Although South Africa had signed the League of Nations' 1931 ***Convention for the Regulation of Whaling*** (which banned all hunting of right whales), seven right whales (including 4 cows with calf) were killed at Saldanha Bay in 1937. The situation was only rectified with the passing of the Sea Fisheries Act in 1940, which finally gave complete protection to the right whale[82]. Studies have shown that, since the 1970's, the right whale population has been growing steadily at a rate of about 7% per year (which translates to a doubling of the population every ten years).

The right whale is a migratory species. Pregnant females come northwards to our shores to calve in early winter (May to July), and males and females which are not pregnant arrive later in the season (August to October) to mate. They then move back to their feeding grounds in the Antarctic where they spend summer and early autumn.

During both the calving and the mating periods, right whales prefer water that is 12 to 15 metres deep, with a sandy bottom. They are known for leaping out of the water, lob-tailing (lifting the tail completely out of the water, and then slapping it onto the surface), sailing (the whale stands on the its head with its flukes out of the water), and spy-hopping (lifting its head vertically out of the water). They are often easy to observe from the shore along the Southern Cape Coast - which is said, as a result, to have the world's best land-based whale watching.

Individual right whales can be told from one another by the pattern and shape of ***callosities*** which are borne on their heads. The largest of these light brown spots is usually on the tip of the upper jaw, and is known as the ***bonnet***. The callosities are made up of parasites and barnacles that are specific to the southern right whales. These parasites or 'whale lice' are small crustaceans known as amphipods. They feed on the dead skin of the whales.

Right whales can reach a length of 17 metres, and a weight of about 67 tonnes. They feed exclusively on the copepods - a group of tiny crustaceans that are classed with the zooplankton.

Family *BALAENOPTERIDAE* - The Rorquals

Humpback Whale

Boggelwalvis

Megaptera novaeangliae

The humpback is a migratory species that move north to calve in the warm equatorial waters during winter, and south to feed in the Antarctic waters during summer. They are known for their enormous size (the largest male on record was 17.5 metres, and the largest female 19 metres). Their flippers are long (up to a third as long

[82] Best reports that, despite the ban placed on hunting by the League of Nations Convention and the South African Sea Fisheries Act, the Soviet Union is thought to have killed some 3200 right whales in the period to 1971, and South Africa herself is said to have made a number of undeclared catches in the 1950's (Best, P: **Whale Watching in South Africa - The Southern Right Whale**: *Mammal Research Institute of the University of Pretoria*. Pretoria, 1995)

Key:	*BR = Breeding resident	*BM = Breeding migrant	*N-BM = Non-breeding migrant
	(A) Afrikaans name	(X) Xhosa name	(G) German name

as their bodies), with serrated leading edges that have conspicuous, dark nodules. They feed exclusively on krill, and take most of their food during their stay in the Antarctic.

This species was hunted almost to the point of extinction, and it is only recently that they have been afforded protection. Replenishment can be expected to take years.

Bryde's Whale
Bryde se walvis
Balaenoptera edeni

This species may be migratory, but not much is known about its habits in this regard. Unlike other whales with baleen plates, some of the whales of the rorqual family feed primarily on schooling fish (including pilchards). The Bryde's whale is one of these. They can reach a length of 14 metres.

Blue Whale
Blou walvis
Balaenoptera musculus

As far as we know, the blue whale is the biggest mammal that has ever lived. A female caught off South Georgia (USA) measured 33.58 metres, and another, which was caught in the Antarctic, measured 27.6 metres and weighed 172.4 metric tonnes. They feed exclusively on krill, and eat only during the summer. In order to satisfy their needs, it is estimated that they need to take between 3.5 and 4 tonnes of krill per day. In the Southern Hemisphere they migrate to the Antarctic in summer, and north towards the tropics in winter.

There may once have been as many as 200 000 Blue whales, but they were fiercely hunted, to the point where there are only about 6 000 left today. They were afforded complete protection in 1965, and their numbers now appear to be on the increase.

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
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The Story of The Coelacanth

The story of the Coelacanth concerns one of South Africa's most famous scientific discoveries, and as such it is important to tourism as one of our many cultural and environmental attractions. And yet, until recently, and ironically, it was believed that the coelacanth was not even a South African Fish!

In December 1938, Captain Hendrik Goosen of the *Nerine*, a trawler belonging to the I&J fishing fleet, decided to shoot his trawl off the mouth of the Chalumna River, near East London. A cold water up welling had occurred, and this often brought unusual fishes to the surface. Amongst his catch were a number of unusual sharks, and a huge, bright blue fish that he had never seen before. It was still alive when it came on board, and, because it was too big to fit into the on-board aquarium, it was left on deck, where it survived for several hours. It was 150 cm long, and weighed 57.5 kg. Goosen was in the habit of keeping curious specimens for the East London Museum, and, when he got into port at East London, he immediately sent for the curatrix of the museum, Marjorie Courtney-Latimer. She realised that this was an unusual find, and sent a letter, together with a sketch of the fish, to the ichthyologist[83] Professor JLB Smith, who was holidaying at his home in Knysna. The letter only reached him on the 3rd of January, 1939, and, due to rains and other delays, it would be six weeks before Smith could finally get to East London to examine the fish. In the meantime, and despite Courtney-Latimer's best efforts, the soft (inner) parts of the fish had rotted and had to be discarded.

Before he even saw the fish, Smith was convinced that it must belong to a group known as the ***crossopterygians*** - primitive fishes that were thought to have become extinct more that 70 million years ago. When he was finally able to examine it and announce to the world that it was, in fact, a Coelacanth, the scientific community was stunned. He named his find ***Latimeria chalumnae*** after Marjorie Courtney-Latimer and the Chalumna River.

Smith became obsessed with finding a second specimen. The loss of the soft inner parts meant that he was unable to make a complete zoological description, and he wanted to know where these strange fish lived. He theorised that the East London fish was a stray, and that they usually lived further north. In his search he traveled widely along Africa's Eastern Coast, and in 1948, he distributed a leaflet offering a reward of £100 for the capture of a coelacanth. Some of these leaflets were eventually taken to the Comores by a Captain Eric Hunt. On the 20th of December, 1952, a second specimen was caught by a fisherman named Ahmed Houssein, about 200 metres off the island of Anjouan in the Comores. It was brought to Hunt, who knew from earlier discussions with the Smiths that preservation of the fish was of paramount importance. Hunt did what he could for the fish, and sent a telegram to Smith's faculty at the University of Grahamstown. But Smith was away - he was, in fact, sailing home aboard the *Dunnottar Castle* after completing his latest fish-collecting safari. It was only when he landed in Durban on December 24th that the news finally reached him.

Communications were slow in those days, and there were no scheduled flights between South Africa and the Comores, nor were any charter airplanes available. On Christmas Day, therefore, desperate not to lose the opportunity, Smith phoned the Prime Minister of South Africa - DF Malan - and convinced him to put a military Dakota at his disposal to fly to the Comores, collect the fish, and bring it to South Africa where he could work on it.

Smith finally landed in the Comores on December the 28th.

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[83] ***Ichthyology*** is the study of fishes.

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On first inspection, this second specimen appeared to be different to the first, and it was given a different zoological name: *Malania anjounae*. It did not have two dorsal fins, like *Latimeria* did. On closer investigation, however, it was found that the front fin had been lost (possibly due to injury when the specimen was quite young) and, in the end, this, second fish was placed in the same species as *Latimeria*.

During the flight back to Cape Town to show the fish to the Prime Minister, Smith convinced the pilot to fly low over Knysna where they 'dropped a bomb' on the Smith's house. The 'bomb' contained a letter to his son in which he described his experiences during the past few days. Once Malan had seen the fish, Smith returned to Grahamstown, where he spent months working on his complete description of the Coelacanth.

In her book *A Fish Caught in Time*[84], Samantha Weinberg relates an amusing incident relating to the flight of the Dakota.: the South African Airforce needed permission from the Mozambican authorities to mount a military flight across their air space and to refuel in Lourenço Marques. At 2 a.m. on the day of the flight, one of the officers in Durban called a government official in Lourenço Marques to make the request. Weinberg relates:

> '"Roger," said the LM man. "And what is the mission of this flight?"
> 'Durban "To get a fish."
> 'L.M.: "Have I heard you right? A F.I.S.H.?
> 'Durban "Yes, a fish."
> 'L.M.: "You mean a thing with scales?"
> 'Durban "Roger."
> 'L.M.: "Do you really think our Government is going to believe that? You must think our guys are stupid – can't you think of a better story for why you want to cross our territory in a military plane?"'

150 Coelacanths were caught of the Comoros during the following 15 years, but only French scientists were allowed to search for them. This restriction was lifted after the country gained its independence, and, in 1986 and again 1987, Professor Hans Fricke of Germany's Max Planck Institute, mounted diving expeditions using a self-built built submersible to film the Coelacanth in its natural habitat. Success came on the 41st dive of the second expedition, and it is one of the many ironies of the Coelacanth story that Ficke had already left for Germany when his colleague, Jürgen Schauer, took the vessel down without him and finally caught the fish on film[85].

Coelacanths Around the World

Coelacanths have since been discovered in Mozambique, Madagascar and Indonesia, and, like the Comoran fish, all have a story to tell.

Although the first Mozambican coelacanth was caught in 1972, it was the second catch, in 1991, that was of major importance to our knowledge of the fish's natural history.

Important coelacanths have an uncanny habit of turning up around Christmas time. The 1.79-metre, 98 kg fish had been caught by a Japanese fishing trawler and frozen on board before being handed over to Dr Augusto Cabral of the Museum of Natural History in Lourenço Marques. On Christmas Eve, the JLB Smith Institute of Ichthyology received a fax telling of the Coelacanth's capture and the director, Prof. Bruton, quickly arranged to visit the

[84] Weinberg, S.: **A Fish Caught in Time,** *Fourth Estate,* London, 1999

[85] This and subsequent expeditions taught us that coelacanths feed at night but prefer to hide in caves during the day

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museum in the company of Prof. Fricke.

Weinberg relates that 'Cabral assured them that it was definitely a coelacanth – only the second to have been trawled and, indeed, to have been found anywhere but the Comores. The bad news was that – in another uncanny mirror to the events of 1938 – lacking the facilities to keep it frozen, Dr Cabral had been forced to dissect the fish and discard its internal organs. The good news, however, was that he had found twenty-six perfectly preserved coelacanth pups inside, which he had managed to preserve.

'The Mozambique fish threw a slew of series and assumptions into the air. Not only did the place and method of its capture revive former conjectures that the coelacanth inhabited a much wider area – and that the East London specimen was not necessarily a stray – but it also threw oil into the simmering debate about the coelacanth's reproductive processes.

'Until that point, all coelacanth estimates of coelacanth population dynamics had been based on the American Museum's specimen[86], with its five embryos . Then along came the Mozambican fish, quintupling the potential birth rate; if coelacanths could produce up to twenty six young, then perhaps they weren't as endangered as we thought? It also destroyed, once and for all, Eugene Balon's theory of inter-uterine cannibalism[87].

'To the sceptics and pessimists of the coelacanth world, the Mozambique specimen wasn't such a big deal. Any live bearer – even one that produces twenty-six offspring – is a slow producer, and it was entirely possible, they argued, that, like the East London Fish, this coelacanth had also got caught in the southerly current and drifted from the Comoros to the waters off Pebane where it was caught.'

But the sceptics were wrong. In August 1993, a 32 kg specimen was caught in a shark net off the village of Anakaó on the south-west coast of Madagascar – 1 300 km south of Grand Comore, and another one was caught in the same place, and under similar circumstances, in 1997. The co-incidence was too great, and the fact that coelacanth's occurred over a greater geographical area than was originally believed, was now becoming commonly accepted.

On the 18th of September of that year – 1997 – Mark Erdmann, an American marine biologist based in Indonesia, saw a coelacanth on the cart of an old fisherman at the fish market in Bali. The old man was unable to give him accurate details as to where it had been caught, and, because he was obviously uncomfortable with all the attention that he and his find were attracting, Erdmann reluctantly stopped his line of questioning.

To his subsequent regret, Erdmann did not buy the specimen from the old man, and, like Smith before him, eventually put out a reward for the capture of a second specimen, which was caught off the island of Manado Tua by one Om Lameh, and brought – still alive – to Erdmann. Before it died, Erdmann placed it in the waters of the bay in front of his house and filmed it as it swam. Although the decision to kill the specimen and dissect it could not have been an easy one, Erdmann was secure in the knowledge that no coelacanth that has been caught alive has ever survived its ascent from the great depths at which it lives for more than a few hours[88].

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[86] Caught in 1962 in the Comores and known as Specimen Twenty Six

[87] Specimen Twenty-Six was dissected in 1975, and was found to contain five pups that were still attached to their yolk-sacs. However, as coelacanths were known to produce up to 200 eggs, Balon, of Guelph University in Canada, proposed the theory that they displayed the same habit of oophagy (inter-uterine cannibalism) as do the sharks. If this was the case, it would have seriously limited the coelacanth's reproductive capacity.

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South African Coelacanths

On 27 November 2000, a group of divers discovered and photographed coelacanths off Sodwana Bay, in South Africa's Greater St Lucia Wetland Park (northern KwaZulu-Natal) whilst diving to a depth of 104 metres: the specimens in the photographs were positively identified by Dr Phil Heemstra of the JLB Smith Institute of Ichthyology.

The discovery finally confirmed that the coelacanth was as South African a fish as any other on this coast. Importantly for its continued survival, however, the colony lives in a protected area – the Greater St Lucia Wetland Park was declared a World Heritage Site in December 1999. The country's Minister of Environment Affairs and Tourism, Mr. Valli Moosa, quickly reacted to the find by publishing emergency regulations to further protect the coelacanth: in South Africa, coelacanths may now not be disturbed or caught, and no attempt may be made to locate and/ or film them without a permit issued by the Minister.

Natural History of The Coelacanth[89]

The nickname for the Coelacanth - ***Old Four Legs*** - refers to its four unique limb-like fins (2 in the pectoral and 2 in the pelvic regions). These fins are not attached to the body in the way that we are used to seeing in fish, but are placed on well-developed *basal lobes*, which are muscular protrusions that are similar to limbs in mammals. These basal lobes can bend and rotate, allowing the Coelacanth to 'paddle' with its fins - in much the same way that we might paddle with oars!

The Coelacanth feeds mainly on fish, eels, skates, shark, squid and octopus.

There is no obvious difference in appearance between the male and female, except perhaps that the female is slightly more robust. The foetuses develop inside the mother and remain there until they are large enough to fend for themselves. One female that was caught contained 26 babies that were about to be born. They were between 308 and 358 mm long, and weighed between 410 and 502g.

Coelacanths live at depths of between 100 and 700 metres. Their habit of hiding in caves during the day may be a defense against their main predators - sharks. They are sociable, and will congregate together in their caves, possibly returning to the same 'home' cave day after day. They show no evidence of any aggressive behaviour.

Conservation of The Coelacanth

In 1987 Professor Mike Bruton[90] and three other Ichthyologists founded the Coelacanth Conservation Council, whose headquarters are in the Comoran capital of Moroni. Trade in the Coelacanth has been banned - it is now listed in Appendix 1 of the Convention on International Trade in Endangered Species (CITES).

The Garden Route's Coelacanth

The JLB Smith Institute of Ichthyology has developed a unique angling museum at the ***Old Gaol*** complex in ***Knysna***. A part of the museum is devoted to the Coelacanth, where you can

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[89] The word ***coelacanth*** means 'hollow space' (from the Greek *coel* - space, and *acanthus* - spine). The first Coelacanth to be described was a fossil - named *Coelacanthus*. It was described by the French scientist Louis Agassiz in his book *Poissons Fossiles* (The Fossil Fish). He gave it the name because of the characteristic, hollow spines that project from its vertebrae.

[90] Then Professor of Ichthyology at the JLB Smith Institute in Grahamstown

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see a preserved specimen and learn more about the history and natural history of this fascinating fish - a link between our modern world and the age of Dinosaurs.

The African Black Oystercatcher

The African Black Oystercatcher[91] is the third rarest oyster catcher in the world[92], and the second rarest of South Africa's coastal breeding birds[93]. There are less than 5 000 individuals, of which just more than half live on the Cape Coast between the Oliphants River and Mossel Bay (many on off-shore islands), and about 1000 live to the east of Mossel Bay.

Why Should Oystercatchers Be Conserved?

The African Black Oystercatcher is Africa's only breeding species of Oystercatcher.
Because they are so sensitive to any disturbance in their environment, their presence in - or absence from - a given area is a barometer of that area's general state of health. Conserving the Oystercatcher, then, will ultimately benefit the coastal environment as a whole.

With the growing number of bird-watchers that are attracted to the Garden Route, these rare and unusual birds have become an important tourist attraction. And whilst it is vital to conserve them for the role they play in the coastal ecosystem, their value to the tourism industry should not be overlooked.

Natural History

Oystercatchers are usually found in pairs or small groups on sandy or rocky shores, and occasionally on estuaries. They feed mainly on mussels and limpets, but will also take whelks, small crustaceans and various worms. They nest in summer on rocky or sandy beaches, often near the high water mark, and lay one or two eggs in a shallow scrape - there is no proper nest, although they do try to lay the eggs in a camouflaged position or in a raised place where they can see an approaching predator.

Unlike the juveniles of birds such as the plovers, young oystercatchers are not able to feed themselves when they hatch, and must be fed by their parents until well after fledging. In order to maintain the population size, each breeding pair would need to raise only one chick every three years. Under the present circumstances - especially on mainland beaches and rocky shores - this 'target' may be difficult to attain.

Oystercatchers are territorial and faithful to their mates, and some pairs have been recorded as using the same nesting sites for up to 20 years.

Threats to the Oystercatcher's Breeding Success

Because they nest in areas which are popular with man - and in summer when the beaches are most popular - the oystercatchers' young are placed at great risk. Many human activities

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[91]The zoological name of the Oystercatcher is ***Haematopus moquini***. It was first described to science in the mid 1800's by Bonaparte, who named it after the director of the botanical gardens in Toulouse (France) - one *Horace Benedict Alfred Moquin Tandon*.

[92]The world's rarest oystercatcher - and one of its rarest wading birds - is the ***Chatham Island Oystercatcher***, - only about 150 individuals exist. The second rarest is the ***Variable Oystercatcher***, of which only about 2 000 to 3 000 are left.

[93]The ***Damara Tern*** - *Sterna balaenarum* is another coastal breeding bird endemic to South Africa and Namibia. In South Africa it is considerably rarer than the oystercatcher, but the reverse is true in Namibia. Overall, however, the oystercatcher is the rarer of the two.

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contribute to this. Beach-goers walking their dogs, anglers, drivers of 4X4's and coastal development are all to blame for the high mortality rate.

When the Oystercatcher is disturbed, it may abandon the nest long enough for the eggs or chicks to die in the heat of the sun, or to be preyed upon by other birds (particularly by Kelp Gulls). The eggs and chicks are easily crushed by vehicles on the beach, and the helpless chick is no match for curious and uncontrolled dogs.

Hockey[94] says that '*there is an interesting and alarming correlation between a decrease in the breeding success of oystercatchers and an increase in the sales of 4X4 vehicles in South Africa*"

The Oystercatcher Conservation Programme

The Oystercatcher Conservation Programme is run by the Percy FitzPatrick Institute of African Ornithology, at the University of Cape Town. Participants in the Programme in the Southern Cape include Cape Nature Conservation (the Province's conservation authority), local authorities, non-government organisations (such as BirdLife Africa), private landowners and concerned individuals.

Besides scientific study of the birds, the Programme is involved in producing and distributing educational material, running an ongoing awareness programme in the media, and developing the eco-tourism potential of the African Black Oystercatcher.

The success of the Oystercatcher Conservation Programme depends heavily on the involvement of the public - especially for gathering information. If you would like to contribute to the programme, contact Prof. Phil Hockey by fax on (021) 650 3295, or e-mail ocp@botzoo.uct.ac.za

The MTN Cape Whale Route

We have seen that the presence of whales in our waters is an important tourist attraction for the Garden Route. The cell-phone company MTN are sponsoring a major drive to increase the awareness of the Region as an important whale- watching destination.

The Whale Watching Industry

It is estimated that US 500 million is spent annually on whale watching throughout the world. In 1996, South Africa's share of this amounted to only 0.5% of the total. The MTN Cape Whale Route aims to use the massive potential of this to provide meaningful community development in our area. Recognition of the Whale Route initiative has come from the Ministry of Industry, Agriculture, Planning and Tourism, as well as Regional Tourism Bodies and local fishing communities. This has pave the way for the whale watching industry in South Africa to grow into one of the country's most important tourism attractions. With superb land-based whale watching around our relatively protected bays (which are ideal calving and mating grounds - particularly for Southern Right Whales) the benefits for us in the Garden Route could be enormous.

The MTN Cape Whale Route includes 26 towns in the 900 kilometre stretch between Doring Bay on the West Coast, and Tsitsikamma on the South Cape Coast.

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[94]Hockey, P: **African Black Oystercatcher - Between the Tides** in Africa Birds and Birding Volume 2 Number 5; *Black Eagle Publishing*, Cape Town 1997

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Benefits for Local Communities

The Whale Route aims to promote economic empowerment and sustained financial independence among local communities through reconstruction and development. This includes several innovative, community-based eco-tourism initiatives. Local fishermen have been trained as seasonal whale guides, and entire fishing communities, which were previously dependent on seasonal fishing quotas, have been encouraged to become involved. Several small businesses and home industries have sprung to life in this way. At the ***Masimphulele Sewing Project*** in Noordhoek, a group of women who had been unemployed were trained in fabric painting, fabric printing and basic sewing techniques, and are now manufacturing whale curios on a commercial scale. The ***Melkhoutfontein community*** at Stilbaai have begun manufacturing hand-painted table cloths, whale curios and garments which have been enthusiastically received in the international market.

The committee of the MTN Cape Whale Route places great emphasis on education, and local communities are being taught about the value and opportunities that Whale Tourism can provide for them. During the 1996 season, researchers from the World Nature Fund counted 146 Southern Right whales (cows and calves) on our coast - against 100 the previous season. This increase will definitely have an impact on the number of whale tourist that will come to our area, and the effect should be strongly felt in the small coastal towns along the route.

An important part of the education initiative is the erection of information signs at popular whale-spotting sites along the 900 kilometres of the Route. They display vital information about Southern Right Whales for the information of tourists and locals alike.

Local and International Marketing

The MTN Cape Whale Route is running a powerful local and international marketing campaign. Through constant exposure in the media (including on the Internet), the supply of whale posters, maps and guides, and its ***Whale Host Programme***, the MTN Whale Route is quickly becoming known as the world's best land-based whale watching.

For many years Satour marketed the presence of *The Big Five*[95] as one of South Africa's main tourist attractions. Through the efforts of the Whale Route they have recently included the whales, and visitors are now encouraged to come and see ***The Big Six***.

The Whale Season

The wonderful thing about the South Cape Coast is that we have the opportunity of seeing whales and dolphins ***throughout the year***! Importantly, however, the big attraction on the Whale Route - the Southern Right Whale - comes to the South Cape Coast during ***winter***. This is important for the economy of this area, because tourism has traditionally been a summertime activity. With an increase in Whale Tourism, we can hope to see an increase in business in the (traditionally) quiet months. The knock-on effect should be to increase the number of employment opportunities in the region, and to increase their sustainability.

Information about where to spot whales can be obtained from ***Whale Route Hotline, (083 910 1028)*** which operates from June to December. This number can also be used for reporting whale sightings.

In Hermanus, which is said to be one of the best places for whale-watching, they have the world's only ***whale crier*** - Pieter Claasen. He, too is sponsored by MTN, and can be contacted on ***083 212 1074*** from June to November.

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[95] ***The Big Five*** are the elephants, lion, buffalo, cheetah and

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General Regulations Governing Our Coast

Marine Reserves
Only a few areas of the Garden Route's Coast are directly conserved by the authorities. These include

- the ***Goukamma Marine Reserve*** between Sedgefield and Buffalo Bay,
- parts of the ***Knysna Lagoon*** (the invertebrate reserve),
- the ***Robberg Marine Reserve*** at Plettenberg Bay, and
- the ***Tsitsikamma National Park***.

These ***general marine reserves*** are proclaimed by the Minister for the Environment, and, except where a species of marine life is specifically excluded, no marine organism may be disturbed, caught or killed in these areas.

General Regulations That Cover the Entire Coast
The following regulations, taken from the ***Sea Fisheries Act***, 1988 (Act No. 12 of 1988) apply to ***all areas*** of the coast - even those not within the marine reserves:

No-one may

- use any artificial breathing gear (except a snorkel) while spear-fishing;
- catch any fish with a gaff, spear, club, stick, stone (or other similar weapon): except in the case of *sole* - which may be caught with a spear in quantities of no more than five per day;
- catch any fish by jerking a hook (which is intended to impale the fish) in the sea - except in the case of *octopus, cuttlefish* and *squid*;
- use a cast-net in the hours between sunset and sunrise;
- disturb, catch or kill a dolphin, or be in possession of a dolphin, or any part of one, or any product derived from a dolphin. This rule *may be ignored* only when you are involved in a genuine attempt to save a stranded or beached dolphin;
- go within 300 metres of a whale, or disturb, catch or kill a whale (and if a whale surfaces within 300 metres of your boat, you are required to move away from the animal in order to comply with this law). This rule *may be ignored* only when you are involved in a genuine attempt to save a stranded or beached whale;
- disturb, catch or kill a great white shark, or buy or sell (or offer for sale) any product derived from the great white shark;
- damage, uproot or collect any live corral, sea fan or pansy (although you are allowed to collect them if they are *washed up* on the shore);
- remove more than 10kg of aquatic plants, 1kg of shells, or 50kg of shell-grit from the sea or sea-shore on any one day (you may only collect these for your personal use);
- grow (culture) any marine organism unless you are have a permit issued by the director-general of Sea Fisheries;
- catch any fish or collect any plants or other marine organisms for commercial use (i.e. for re-sale) unless you have a permit issued by the director-general of Sea Fisheries.

Restrictions on Popular Fish, Shellfish and Bait Organisms

Fish Species

Key:	*BR = Breeding resident	*BM = Breeding migrant	*N-BM = Non-breeding migrant
	(A) Afrikaans name	(X) Xhosa name	(G) German name

Line Fish have been divided into categories according to their ***vulnerability*** and their ***stock status*** (i.e. the number of fishes of that species though to exist on our coast). Fishes are measured in a straight line from the tip of the snout to the very end of the tail or caudal fin. Fishes smaller than the sizes on the list must be returned to the sea.

Critical List:
No one may be in possession of more than ***two*** of each of the following species:

Poenskop	50 cm
Seventy-four	40 cm (closed season from 1 September to 30 November)
Red Steenbras	40 cm (closed season from 1 September to 30 November)

Restricted List:
No one may be in possession of more than ***five*** of each of the following species:

Elf / Shad	30 cm (closed season from 1 September to 30 November)
Zebra	30 cm

Exploitable List
No one may be in possession of more than ***ten*** of each of the following species:

White Stumpnose	25 cm
Carpenter	25 cm
Hottentot	22 cm
Kob	40 cm
Santer / Soldier	30 cm
Sand Steenbras	
Cape Moony	
Red Tjor-Tjor	

Recreational List
No one may be in possession of a total of more than ***ten*** fish (including ***five*** of any one species) from the following list:

Blacktail/ Dassie	20 cm
Cape Stumpnose	20 cm
Leervis / Garrick	70 cm
Spotted Grunter	40 cm
White Steenbras	60 cm
Galjoen	35 cm (closed season from 15 October to 28 February)
Musselcracker	60 cm
Sharks and Rays	

Bait List
You may keep as many of the following species as you catch:

Strepie	Minimum size 15 cm
Mullet	
Pinky	
Steentjie	

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(A) Afrikaans name (X) Xhosa name (G) German name

Halfbeak
Cutlass Fish

Shellfish and Bait Organisms
Each person may collect the following on any one day:

Species	**Minimum Size**	**Bag Limit**
Alikreukel	6.35 cm	5
Oyster	5.10 cm	12
White Mussel	3.50 cm	50
Black Mussel	-	25
Clam	-	8
Periwinkle	-	50
Limpet	-	15
Octopus	-	2
Sea Crab	-	15
Mud Crab	114 mm measured across the broadest part of the back	
		2
Mole Crab	-	30
Bloodworm	-	5
Mud Prawn	-	50
Razor Clam / Pencil Bait		
	-	20
Red Bait	-	2 kg (without shell)
Polychaete worms: any sea worms, including coral, wonder, shingle, moonlight, pot, rock or flatworm	-	10

The breeding season for mud prawns is from November to January, and the exploitation of this species should be handled with care during this period.

You are not allowed to collect any crab that is in berry.

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

Part 10
Knysna's Natural Environment

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Knysna's Natural Environment

From the tourism industry's point of view, Knysna's biggest asset is surely the Knysna Lagoon. It is spectacularly beautiful[96], and it offers more opportunities for water sports than any other body of water in the Garden Route. It is one of the largest estuaries on South Africa's coast, and the CSIR's 1985 report on the lagoon states that:

> ***"Knysna lagoon is biologically the richest estuary in the Cape Province[97] and one of the largest. Since it is permanently open, and the volume of influent fresh water relatively small, salinities are stable and near to that of sea water. This stable environment accounts for the remarkable diversity of species recorded here, the highest of any South African estuary. As a result, residential and recreational developments are spreading rapidly and changing the natural and rural character of the area. This rapid development must not be allowed to affect the natural ecological processes that maintain the functioning of the lagoon, while the rural character and features which are so attractive should be maintained by carefully controlling any future development."[98]***

The Knysna Lagoon was proclaimed a ***National Lake Area*** on the 31st of December 1985, and is now managed by the ***National Parks Board of Trustees*** on behalf of the nation.

This section of the *Handbook* discusses some of the more important facts about the Lagoon.

The Geography of the Knysna Lagoon

Geology of The Knysna Area

Knysna lies in what geologists refer to as a ***drowned valley***.

Most of the underlying rock in this area is classified as belonging to ***The Table Mountain Group*** - mostly quartz sandstones which are believed to have formed due to enormous pressure under the sea. The cliffs and rocks at the ***Knysna Heads*** are a good example of these ***Table Mountain Rocks***.

Geologists have noticed traces of **ancient shorelines** in this area at between 5 and 60 metres above the present sea level. The rise and fall of the shorelines would have been influenced by the warming and cooling of the earth (ice-ages). The ***soils*** of the area strongly reflect this past history, as well as the history of climatic and vegetative changes:

- ***On the coastal belt***, soils tend to be of fine to medium sand which originated from the quartzites and sandstones of the Table Mountain Group, with additional aeolian (wind-blown) deposits originating from the old shore-lines;
- ***On the coastal platform*** (the relatively flat area that exists between the coast and the foothills), soils are largely formed by clay deposits, and

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96 Remember that ***scenic beauty*** is the ***biggest attraction*** for visitors to the Garden Route.

97 ***i.e. The Cape Province as it was known prior to 1994.***

98 ***JR Grindley Report No. 30: Knysna (CMS 13)*** *(Estuaries of The Cape: Synopsis of Available Information on Individual Systems). ECRU, National Research Institute For Oceanology: Council For Scientific and Industrial Research*. Stellenbosch, 1985

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- ***In the foothills*** of the mountains north of Knysna, the soil reflects the gravel and sand deposits that would have been laid down by ancient alluvial fans (formations created by heavy particles precipitating out of water).

The Catchment Area of the Knysna Lagoon

The Catchment area of the Knysna Lagoon is approximately 350 km^2

The Knysna River is the main source of fresh water running into the lagoon. From the Knysna Heads to its source, the river is about 64 kilometres in length. The river itself is fed by a number of tributaries:

The Swartkops River
The Steenbras River
The Gouna River
The Rooiels River
The Lelievlei River
The Witels River
The Palmiet River
The Dwars River
The Kruis River
The Oubos River and
The Lawnwood River.

The ***flow*** of the Knysna River into the lagoon is generally quite slow, and measurements taken during October 1974 show an average influx of 0.5 cubic metres per second at the Charlesford Weir (i.e. just above the level of influence of the tides).

The smaller rivers and streams that feed the Knysna Lagoon are:

The Bigeye (Hornlee) Stream
The Hunter's Home Stream
The Ouplaas Stream
The Salt River
The Eastford Stream
The Westford Stream, and
The Brenton Stream

The Knysna River Estuary

Size

The Knysna River Estuary is 1633 ha in size. It stretches from the mouth at The Knysna Heads[99] to just downstream of the rapids at Charlesford, on the Knysna River.

Navigability and Channel Depths

The Estuary has a navigable channel that is about 19 km long, and 2 km at its widest. The first 5 km (measured from the Heads) are navigable for deep-keel yachts and small ships. Above the railway bridge, small craft can travel for about a further 14km.

The average depth of the channels is between 1.2 and 1.5 metres below mean sea level, with a maximum depth of about 16 metres below mean sea level.

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[99] The word ***Heads*** in the name ***Knysna Heads*** refers to the two ***headlands*** - or peninsulas - that enclose the river mouth and form the estuary.

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Tidal Influence
The tidal influence (***tidal reach***) stretches 17 km upstream from The Heads. The time-lag between low tide at The Heads and at Old Drift is about two hours at spring tide.

Islands in The Estuary
The Knysna Estuary has ***three main islands***:

- ***Thesen's Island*** (84 ha in size) where Thesen's Timber Factory, Tapas and the National Parks Board offices are situated;
- ***Leisure Island*** (82 hectares) which is today a residential suburb;
- ***Rex Island*** (Braamekraal) is largely a swampy, marshy area. It was the site of the old air strip. Dykes were constructed to prevent it from flooding, and parts of the salt marshes were filled in to increase its size.

Bridges and Causeways
The Estuary is crossed by the following ***main bridges and causeways***:

- the ***White Bridge*** and its causeway, which form part of the N2 near Belvedere;
- the ***Railway Bridges*** with their causeways, which run from the railway station across to Belvedere;
- the ***Thesen's Island Causeway***, and
- the ***Leisure Island Causeway***.

The causeways have had a marked influence on the lagoon. They tend to slow down the natural speed of the tides, which leads to ***siltation*** (when the speed of flow of a body of water is slowed down, the silt particles that it carries settle to the bottom).

The Knysna River Mouth
The Knysna River mouth is commonly known as ***The Heads***.

The mouth is about ***230 metres wide***

. The ***tidal rise and fall*** at spring tide is about 1.8 metres (this rise and fall is maintained as high up stream as Belvedere). The ***average tidal flow*** at the mouth is 1 000 cubic metres of water per second, with a maximum flow of 2 000 m^3/s. This means that the current runs at a speed of up to 1.27 metres per second.

How Man Uses The Knysna Lagoon

Tourism-Related Uses
For management purposes, the National Parks Board have divided the lagoon into different ***zones of use***. The following recreational and tourism-related activities are recognised:

- ***Zone 1: The Heads to the Railway Bridge***

  Ferries (commercial passenger boats)
  Private houseboats (that are not hired out to visitors)
  Commercial houseboats
  Power boats (speed boats with or without water skis)
  Large yachts
  Rowing boats
  Canoes

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Small sailing dinghies
Angling
Swimming (but not in the navigable channels)
Snorkeling (at the Pilot's Jetty and wrecks at the Heads)
Scuba Diving (at Thesen's Jetty and The Heads)
Commercial fishing charters (which are lagoon-based but fish out at sea)

- ***Zone 2: The Ashmead Channel***
  Power boating (power boats are allowed to travel at idling speed only in this area)
  Rowing
  Canoeing
  Windsurfing
  Small sailing dinghies
  Angling
  Swimming
  Snorkeling
- ***Zone 3: The Railway Bridge to The Point***
  Commercial house boats
  Private house boats
  Power boating (water skiing is, however, prohibited in this area)
  Rowing
  Canoeing
  Windsurfing
  Small sailing dinghies
  Angling (except around the oyster beds)
  Swimming
  Snorkeling
- ***Zone 4: The Point to the White Bridge***
  Water skiing
- ***Zone 5: Upstream of The White Bridge***
  Canoeing
  Rowing

Commercial (Non-Tourism) Uses
The only commercial activities that are not directly related to tourism but which are allowed on the lagoon are the oyster industry and small-scale commercial fishing (where the boats are lagoon-based, but fish out at sea).

Fishes of The Knysna Lagoon

The CSIR stated in their March 1985 report that more than 200 species of fish can be found in the Knysna Lagoon.

Fishes have differing levels of dependence on estuaries during their life cycles. These levels of dependency have been categorised as follows:

- ***Category 1*** fishes that live their entire lives in estuaries;
- ***Category 2*** fishes that depend on estuaries during the juvenile phase of their life-cycles;

Key:	*BR = Breeding resident	*BM = Breeding migrant	*N-BM = Non-breeding migrant
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- ***Category 3*** fishes that usually spend the juvenile phase in estuaries, although they may be found at sea;
- ***Category 4*** fishes that usually spend their juvenile phases at sea, although they may be found in estuaries;
- ***Category 5*** fishes that do not depend on estuaries at all: their juveniles will only occasionally stray into estuaries;
- ***Category 6*** fishes that are usually fresh water species whose juveniles only rarely stray into the estuarine environment.

The list of fishes given here represents only the more common species found in the Knysna Lagoon.

Category 1 fishes that live their entire lives in estuaries

Estuarine Round Herring
Rivier-rondeharing
Gilchristella aestuaria

Knysna Seahorse
Knysna seeperdjie
Hippocampus capensis

Knysna Sand Goby
Knysna sanddikkop
Psammogobius knysnaensis

Barehead Goby
Gobius nudiceps

Category 2 fishes that depend on estuaries during the juvenile phase of their life-cycles;

Eel
Anguilla mossambica

Ten Pounder
Tien-ponder, Springer
Elops machnata

Knysna Halfbeak
Knysna halfbek
Hyporhamphus knysnaensis

Garrick
Leervis
Lichia amia

White Steenbras
Witsteenbras
Lithognathus lithognathus

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Cape Moony
Kaapse Maanvis
Monodactylus falciformis

Flathead Mullet
Platkopharder
Mugil cephalus

Freshwater Mullet
Varswaterharder
Myxus capensis

Spotted Grunter
Spikkel knorder
Pomadasys commersonni

Cape Stumpnose
Kaapse Stompneus
Rhabdosargus holubi

Natal Stumpnose
Natalse Stompneus
Rhabdosargus sarba

Checked Goby
Stigmatogobius dewaali

Thornfish
Doringvis
Terapon jarbua

Category 3 fishes that usually spend their juvenile phases in estuaries, although they may be found at sea;

Cape Sole
Kaapse Tongvis
Heteromycteris capensis

Cape Silverside
Kaapse Spierinkie
Hepsetia breviceps

Striped Mullet
Streep-harder
Liza tricuspidens

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Serpent Eel
Sandslangetjie
Ophisurus serpens

Sand Sole
Swarthand tongvis
Solea bleekeri

Category 4 fishes that usually spend their juvenile phases at sea, although they may be found in estuaries;

Blaasop
Blaasop
Amblyrhynchotes honckenii

Kob
Kabeljou
Argyrosomus hololepidotus

Blacktail
Dassie
Diplodus sargus

Sea Barbel
Seebarber
Galeichthus feliceps

Spotted Halfbeak
Gevlekde Halfbek
Hemiramphus far

Southern Mullet
Suidelike Harder
Liza richardsoni

Baretail Flathead
Balkstert Platkop
Platycephalus indicus

Shad
Elf
Pomatomus saltatrix

White Stumpnose
Witstompneus
Rhabdosargus globiceps

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Strepie
Strepie
Sarpa salpa

Knysna Rockcod
Serranus knysnaensis

Longnose Pipefish
Langneus pypvis
Syngnathus acus

Bellybarred Pipefish
Syngnathus spicifer

Category 5 fishes that do not depend on estuaries at all: their juveniles will only occasionally stray into estuaries;

Chubby Clingfish
Apletodon pellegrini

Butterfly Fish
Chaetodon marleyi

Super Klipfish
Clinus sperciliosus

Conger Eel
Conger wilsoni

Galjoen
Coracinus capensis

Blue Stingray
Dasyatis pastinacus

Zebra
Diplodus cervinus

Porcupine Fish
Diodon hystrix

Cape Anchovy
Engraulis capensis

Backwater Butterfly Ray
Gymnura natalensis

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Sand Steenbras
Lithognathus mormyrus

Eagle Ray
Myliobatis aquila

Ragged Tooth Shark
Odontaspis taurus

Kappie Blenny
Omobranchus woodi

Varkie
Pomadasys olivaceum

Striped Catshark
Poroderma africanum

Lesser Guitarfish
Rhinobatus annulatus

South African Pilchard
Sardinops ocellatus

Hammerhead Shark
Hamerkop
Sphyrna zygaena

Steentjie
Spondyliosoma emarginatum

Lace Sole
Synaptura kleini

Black Spotted Electric Ray
Torpedo fuscomaculata

Painted Lizard Fish
Trachinocephalus myops

Bluefin Gurnard
Trigla kumu

Baardman

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Umbrina capensis

Fishing Regulations on The Knysna Lagoon

Because of the ***limited resources in the sea***, and the ***great demands*** that are made on them by man, it has become necessary to ***limit the amount of fishes*** that each person ***catches***. These limits are laid down in the ***Sea Fisheries Act*** (Act 12 of 1988), and ***apply*** to ***all surf anglers*** and ***spear fishermen*** and ***fishermen*** (excluding people fishing on registered fishing boats - they have different quotas).

The quantities (***bag limits***) indicated on the list below are allowed quantities per person per day.

Minimum sizes have been specified for certain species in order to ensure that sufficient adults of that species are left in the sea to continue the breeding process. Some species may not be taken during certain times of the year (usually coinciding with their breeding seasons). Where these minimum sizes and closed periods have been specified, they are also indicated on the list.

Fish Species

The Line Fish have been divided into categories according to their ***vulnerability*** and their ***stock status*** (i.e. the number of fishes of that species though to exist on our coast).

Fishes are measured in a straight line from the tip of the snout to the very end of the tail or caudal fin.

The ***Lake Areas Development Act*** (Act 39 of 1975) requires that fishing lines must be attended at all times, and that ***no more than two lines***, with ***no more than two hooks*** on each line, are ***allowed per fisherman***.

Spear fishing is prohibited in the area around the wreck of the Paquita on The Eastern Head.

Prohibited Species

No person may disturb or catch any

Knysna seahorse
Pipefish

Critical List:

No person may be in possession of any

Great White Shark

No person may be in possession of more than ***two*** of each of the following species:

Poenskop	Minimum size 50 cm
Seventy-four	40 cm (closed season 1 September to 30 November)
Red Steenbras	40 cm (closed season 1 September to 30 November)

Restricted List:

No person may be in possession of more than ***five*** of each of the following species:

Elf / Shad	Minimum size 30 cm (closed season 1 September to 30 November)
Zebra	30 cm

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

Exploitable List

No person may be in possession of more than ***ten*** of each of the following species:

White Stumpnose	Minimum size 25 cm
Carpenter	25 cm
Hottentot	22 cm
Kob	40 cm
Santer / Soldier	30 cm
Sand Steenbras	
Cape Moony	
Red Tjor-Tjor	

Recreational List

No person may be in possession of a total of more than ***ten*** fish (including ***five*** of any one species) from the following list:

Blacktail/ Dassie	Minimum size 20 cm
Cape Stumpnose	20 cm
Leervis / Garrick	70 cm
Spotted Grunter	40 cm
White Steenbras	60 cm
Galjoen	35 cm (closed season 15 October to 28 February)
Musselcracker	60 cm
Sharks and Rays	

Bait List

You may keep as many of the following species as you catch:

Strepie	Minimum size 15 cm
Mullet	
Pinky	
Steentjie	
Halfbeak	
Cutlass Fish	

Shellfish and Bait Organisms

An ***invertebrate reserve*** has been declared in the area between Thesen's Island and Leisure Island, and between Leisure Island and the main channel. No one is allowed to collect any bait in this area. In addition, no one is allowed to:

- use a spade or fork for collecting bait;
- use a trap or gaff for collecting crabs;
- disturb or catch any live Pansy shell;
- uproot, pick or collect any aquatic vegetation in the lagoon; or
- offer any bait or fish for sale.

The breeding season for prawns is from November to January, and the exploitation of this species should be handled with care during this period.

Each person may collect the following on any one day:

Species	**Minimum Size**	**Bag Limit**
Alikreukel	6.35 cm	5

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Oyster	5.10 cm	12
White Mussel	3.50 cm	50
Black Mussel	-	25
Clam	-	8
Periwinkle	-	50
Limpet	-	15
Octopus	-	2
Sea Crab	-	15
Mud Crab	114 mm measured across the broadest part of the back	2
Mole Crab	-	30
Bloodworm	-	5
Prawn	-	50
Razor Clam / Pencil Bait	-	20
Red Bait	-	2 kg (without shell)
Polychaete worms: any sea worms, including coral, wonder, shingle, moonlight, pot, rock or flatworm	-	10

The Knysna Sea Horse *Hippocampus capensis*

Like the Garden Route itself, the sea horse's greatest asset - its unusual beauty - is, sadly, its greatest weakness. The Knysna Sea Horse, which is one of the strangest fishes of the Knysna Lagoon, is a favourite with visitors and locals alike. An understanding of its uniqueness may help to ensure its continued existence.

From our earliest history, men and women have been fascinated by the sea horse. It features in the myths and legends of many cultures, and has been depicted in art, crafts and jewelry. During this century, however, fascination has lead to the threat of extinction: no longer content with the ***depiction*** of the animal, man has found it necessary to collect and keep it in captivity. This has been made possible by the invention (and increased safety and popularity) of scuba diving, as well as by the invention of the marine aquarium. Sea horses are in demand as aphrodisiacs in the east, and have been collected for the curio industry (where they have been dried and encased in resin to serve as key holders, paper weights, etc.).

The Genus *Hippocampus* - The Sea Horses

There are between thirty and forty known species of sea horse. All belong to the genus *Hippocampus*, and all have very similar breeding habits. The largest is the Eastern Pacific Sea Horse (*Hippocampus ingens*), which measures up to 40 cm, and the smallest is the New Caledonian Sea Horse (*Hippocampus bargibanti*), which is only 15 mm long. They are found in most of the shallow seas of the world, from Tasmania in the south to the English Channel in the north.

In South Africa, six species are recognised:

***Hippocampus capensis* - Knysna Sea Horse**
Restricted to Knysna, Keurbooms River, Swartvlei and Mossel Bay

***H. histrix* - Thorny Sea Horse**

***H. camelopardalis* - Giraffe Sea Horse**

***H. trimaculatus* - Longnose Sea Horse**

H. kudu

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H. whitei - **Crowned Sea Horse**

Unique Characteristics of the Genus *Hippocampus* - the Sea Horses

Sea horses are known as the ***chameleons of the sea*** because they are able to change colour to blend in with their surroundings in much the same way as chameleons do (and, like the chameleon, their eyes can move independently).

In all sea horses, the coronet-shaped formation on top of the head is distinctive and, like thumb prints in humans, can be used to identify individual specimens. The tail is strong and prehensile (specially adapted to seize and grasp), and a sea horse that has wound its tail around a holdfast (usually plant material, but also sponges, ropes, pilings or similar) can be almost impossible to dislodge. The dorsal fin (back fin) is used for propulsion through the water. The two pectoral fins look like ears, and are used to stabilize and steer. This unusual arrangement of their fins makes them slow swimmers, and sea horses rely on their ability to camouflage themselves so that they can escape detection by predators. Their skins are made up of hard, bony, spined plates (rather than scales) which provide added protection.

Enemies of the sea horses include crabs, larger fishes and man, and they are also susceptible to fungal, parasitic and bacterial ailments in the wild. Because sea horses tend to live at shallow depths, storms can contribute to their mortality rate by dislodging them from their holdfasts and throwing them up on the shore.

The Reproductive Process

Sea horses mate for life, and their reproductive habits are quite unusual: pregnancy occurs in the male! He has a brood pouch in his belly, and can easily be distinguished from the female because her belly is much slimmer than his (he looks like he has a beer boep!).

Sea horses become sexually mature at about 9 months old. When they are ready to mate, they perform a ritual that typically takes three days to complete. During the mating, the couple begin each morning by gripping onto the same holdfast and dancing around it in graceful display. They frequently leave the holdfast and swim in a tight parallel formation to another one, where they begin the dance again. On the third morning of the ritual, the female's ovipositor (the organ that she uses for placing her eggs in the male's pouch) begins to protrude from her body. The male indicates that he is ready to mate by arching and jack-knifing his body vigorously, thus compressing his pouch and pumping water in and out of it.

When both male and female are finally ready, they let go of their hold fast and swim slowly upwards as she places her ovipositor into his brood pouch to transfer her eggs. The entire clutch of eggs is transferred in one action, which typically takes about six seconds. After this, the ovipositor is withdrawn and the brood pouch is closed. The male sways gently for a short while to settle the eggs, and both he and the female settle to the bottom again and take up their positions with their tails wrapped around their hold fasts.

After this the female has no further contact with the young.

The male fertilises the eggs in the pouch, and the embryos develop there for (in the case of the Knysna Sea Horse) about 100 days[100]. The male goes though a difficult birth process that resembles labour, and may last up to two days. Between 30 and 120 babies are delivered.

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[100] The pregnancy is considered a true one because of the intimate association between the eggs and the lining of the males' pouch (its *epithelium*), as well as the presence of hormones in the male which stimulate the production of marsupial fluid which nourishes the embryos. in the pouch.

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They are between 9 and 10 mm in length, almost black[101] in colour and well developed when they are born. They receive no further care from the parents.

The adults usually begin mating again just hours after birthing is complete.

Feeding Habits

Sea horses feed on tiny crustaceans (zooplankton). Their mouths are toothless, and are used to suck in the prey, which can be up to 12 mm long and 2 mm wide. They usually feed from their positions on the holdfasts, but may swim after their prey if the need arises.

The Knysna Sea Horse

The largest Knysna sea horse on record was 100 mm long, and weighed 4.0 grams.

In the Knysna Lagoon, sea horses can be found wherever the lagoon grass is present. They have been recorded at depths of up to 15 metres.

Sea horses are entirely protected in the Knysna Lagoon, and it is an offence in the law to catch them or disturb them in any way.

The Oyster Industry in Knysna

Oysters have been a favourite of man's for thousands of years. The ancient Chinese are credited with being the first to cultivate them, and the Greeks were doing it 6 000 years ago. We know that the Romans were crazy about them - they were required eating at every reputable Roman orgy!

Today oysters are more popular than ever, and their cultivation in the Knysna Lagoon is both an important source of employment, and a major tourist attraction.

The Oysters of Southern Africa

Oysters are classed by zoologists as bivalves (each half of their double shells is known as a valve). They usually live in `colonies' on rocks along the sea shore, where many specimens are closely packed together. During the tidal period when they are under water, their shells open and they feed by filtering the water through their gills. When the tide ebbs again, the shells close. This traps enough water to prevent the oysters from drying out.

The oysters indigenous to the Southern Cape include:

- ***Red Oyster*** (*Ostrea atherstonii*), which is edible, but is usually eaten cooked, is found along the coast between Algoa Bay and False Bay;
- ***Weed Oyster*** (*Ostrea algoensis*), also found between Algoa Bay and False Bay;
- ***Pearl Oyster*** (*Pinctada capensis*), which produces true pearls, and is found between Algoa Bay and False Bay;
- ***Common Rock Oyster*** (*Crassostrea margaritacea*), which is edible, is usually eaten raw, and is found between the Transkei and False Bay;
- *Saccostrea cucullata*, which is similar in taste to the imported Pacific Oyster; and

Reproductive Cycle

Oysters reproduce by releasing eggs and sperm into the sea in a process known as `spawning'.

[101] The ability to change colour with the surroundings is developed only later, when the young are about 20 mm long.

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This occurs in the summer months. The average female oyster can produce up to 150 million eggs per season. After fertilization, the eggs develop to become larvae that can swim within about 20 hours. These larvae swim freely for about three weeks, feeding on plankton, bacteria and decaying organic matter. In the later stages of the larval period, a light- and gravity-sensitive `eyespot' (which is made up of fine hairs called cilia) develops, This eyespot is used to select a suitable place to settle. They develop a `foot' that they use to attach themselves to the substrate. When this happens, they become known as `spats', and begin to manufacture shell by binding calcium and carbonate which they get from the sea water.

History of Oyster Farming in Knysna

First experiments with cultivated oysters began in Knysna in 1946, and in 1948 the Knysna Oyster Company was formed as a joint venture between Thesen & Co. and the Fisheries Development Corporation. A Dutch oyster farmer was employed. He began by using the same methods as those developed in Holland, with oysters imported from Britain, Australia and Portugal. The octopuses, mussel crackers, oyster drills, starfishes, flatworms and blister worms that live in the Knysna Lagoon and prey on oysters doomed the experiment to failure. The Company then tried many different rack designs, different sites in the lagoon, and different species of oyster. All were equally unsuccessful until, during the 1970's, the Pacific Oyster (***Crassostrea gigas***) was found to be the perfect species for production in this lagoon. Their growth rate (they reach harvestable size at 18 months) and taste were found to be perfect for this market. Oyster beds were established in the area between Belvedere and The Point, and between Brenton-on-Lake and the railway bridge, and production began in earnest.

Modern Oyster Production

The Oyster industry in Knysna now employs about 120 people. It is served by two companies:

- ***The Knysna Oyster Company***, with offices on Thesen's Island, farms about 12 hectares of oysters in the lagoon, and
- ***The South Cape Oyster Company***, with offices in the Industrial Area, farms about 4 hectares.

Both companies use the ***intertidal rack system*** of oyster farming.

Spats are imported from hatcheries in Chile, the United Kingdom and Cape Town. They are about three months old when they arrive in Knysna, and are immediately placed in fine plastic mesh bags which are stacked on racks in the Lagoon. As they grow in size, they are thinned out and placed in bigger bags. The bags lie on the racks in the intertidal zone, where they are dry at low tide and submerged at high tide[102].

When the oysters are ready for harvesting, they are brought to the companies' factories, where they are kept in holding tanks. Here they are cleaned of mud and sediment with high pressure hoses, sorted and packed for transport.

Knysna's produces about 4 million oysters (300 tonnes) annually:

- ***The Knysna Oyster Company*** sells about 42% of its production in Johannesburg, 14.8% in Cape Town, and 3% in Durban. The balance is sold at the factory here in Knysna; This company also has a concession to collect and sell the indigenous common rock oyster (*Crassostrea margaritacea*), which is marketed as the ***coastal oyster***;

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[102] One benefit of the intertidal rack system is that exposure to the air at low tide prevents the oysters and racks from becoming fouled with marine growth.

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

- ***The South Cape Oyster Company*** concentrates on sales to the local market, which includes many of the restaurants and hotels in the Garden Route.

The National Parks Board has limited the area of lagoon available to the oyster companies to the present 16 hectares. Any future increase in production, therefore, will depend entirely on improved methods of farming.

It goes without saying that the continued health of the Knysna Lagoon is vital to the sustainability of this important industry.

Oysters and Tourism

Most ***restaurants*** and many ***bars*** in the Garden Route offer oysters on their menus, and the fact that they are harvested fresh each day from the lagoon is an important attraction for oyster lovers.

The ***Knysna Oyster Festival*** is a celebration of the `good life', and the oyster stands as a symbol of the pleasure that people gain from being on holiday and being able to treat themselves to something special and unusual. The idea behind the Festival is to use the oyster to market the town and bring visitors here during the winter months: traditionally the quieter months in the business calendar.

The Knysna Oyster Company has an ***oyster tasting tavern*** on Thesen's Island, where visitors can learn about the industry, and eat (or buy) its product. This is a popular attraction for tourists who are travelling individually, as well as with those on organised bus tours

The South Cape Oyster Company's waterfront oyster bar, the Oystercatcher, stands alongside the new town jetty at the Knysna Quays. It is used both as a tourist facility and for the loading and off-loading of oysters.

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Part 11
Plettenberg Bay's Natural Environment

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Plettenberg Bay's Natural Environment

From the tourism industry's point of view, Plettenberg Bays biggest asset is surely its natural beauty[103]. This section of the *Handbook* will examine some of those aspects of the environment that are unique to the Bay, and how they are used in tourism.

Climate of The Plettenberg Bay Area

The Garden Route between George and Tsitsikamma is unique in Africa, in that it is the only part of the Continent that receives all year rainfall. This is due as much to our position relative to the cold fronts that encircle the earth from west to east between about the 40th and 50th parallels, as it is to the existence of the mountains to the North of us.

The Tsitsikamma/Outeniqua Mountains are an important factor in the formation of orographic rainfall[104] on their seaward-side, and the rain-shadow on their inland side. The annual rainfall often exceeds 1 100mm per year (measured in the Mountains), with an average of between 8 and 12 rain days per month. Characteristically, the highest rainfall is recorded in March and November (early autumn and late spring)

Hail is rare in the immediate area of the Bay, but snow may be seen on the mountain peaks in late winter and early spring.

The prevailing winds are south-westerly in winter, and south-easterly in summer. Sea breezes in summer usually have the effect of tempering the heat, but occasional hot, dry winds (berg winds) may blow down from the continent, raising temperatures to as high as 38^0C.

Geology of The Plettenberg Bay Area

The area has three important formations which contributed towards its unique structure:

- the Outeniqua and Tsitsikamma mountains,
- the coastal plateau (the wavecut platform), and
- the erosion resistant rocks of the Robberg Peninsula

The Outeniqua and Tsitsikamma Mountain ranges were created during the Pre-Cretaceous Period (160 - 140 million years ago)[105]. They form part of the Cape Fold Belt, which tends to run west to east along the Southern African Coast. The position of these mountains affects the rainfall in the area, so that there are wetter conditions on the seaward side (the Garden Route has all-year round rainfall) than on the landward side (the Karroo's rainfall is so low that it is considered to be semi-desert).

The wave-cut platform is the plateau that runs between the mountains and the sea, at an average height of 100m above mean sea level. This platform was formed during the Tertiary period, when the sea washed up against the Outeniqua mountains[106]. As the sea level dropped,

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103 Remember that ***scenic beauty*** is the ***biggest attraction*** for visitors to the Garden Route.

104 Orographic rain is created when moist, maritime (sea) air moves in over the land (usually at night), meets the mountains and is forced to rise. In doing so, the moisture condenses and becomes heavier than the air, and must precipitate out (fall as rain onto the mountains themselves and onto the coastal plateau). The side of the mountains that is on the ***landward*** side does not benefit from this rainfall pattern, and is said to be in the ***rain shadow.***

105 Sciacca, PM *pers .comm.*

106 Constant rising and falling of the sea levels is a natural phenomenon. At the end of the last ice age (about

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the rivers that were formed to remove surface run-off cut steadily into the platform, and in turn created the characteristic deep river gorges of the area (such as at Kaaimans, Storms River, etc).

The hard, erosion resistant rocks of the Robberg Peninsula shield the bay from the prevailing westerly swell direction, and the presence of the Peninsula has, therefore, contributed to creating the characteristic *crenulated* (jagged-edged) shape of the Bay [107].

Soils of the Area

The ***soils*** of the area are influenced by the underlying rock structure, and strongly reflect the history of rising and falling shorelines, together with the history of climatic and vegetative changes.

- ***On the coastal belt***, soils tend to be of fine to medium sand which originated from the quartzites and sandstones of the Table Mountain Group, with additional aeolian (wind-blown) deposits originating from the old shore-lines;
- ***On the coastal platform*** (the relatively flat area that exists between the coast and the foothills), soils are largely formed by clay deposits, and
- ***In the foothills*** of the mountains north of Plettenberg Bay, the soil reflects the gravel and sand deposits that would have been laid down by ancient alluvial fans (formations created by heavy particles precipitating out of water).

The Keurbooms/ Bitou River System

The Keurbooms/Bitou River System is an important feature in the landscape of Plettenberg Bay, and has been the subject of a number of in-depth studies[108]. Because of its potential to tourism, the Keurbooms/Bitou River Estuary is of particular importance.

Characteristics of the Keurbooms/ Bitou River Estuary

Duvenage describes the Estuary as being made up of three main components:

- The Keurbooms River Estuary (7 km long, and running from the head of the Estuary at Whiskey Creek, to its confluence with the Bitou Estuary)
- The Bitou River Estuary (6.7 km long, and running from the head of the Estuary at Wittedrift, to its confluence with the Keurbooms Estuary)
- The Lagoon (3.5 km long, and running from the confluence of the Keurbooms and Bitou River Estuaries, towards the Lookout Rocks and parallel to the shore).

The lagoon is formed by a barrier of sand dunes, and is permanently connected to the sea by a tidal inlet (the mouth of the lagoon) that is about 200 metres wide, and 4.5 metres

16 000 years ago), Robberg was an isolated hill on a coastal plain, many kilometres from the sea. It was only with the melting of the polar ice caps that the sea began moving toward its present position.

[107] See also - *Introduction to the Marine Environment* above

[108] Duvenage, IR & Morant PD **Report No. 31: Keurbooms/Bitou System (CMS 19)** (Estuaries of The Cape: Synopsis of Available Information on Individual Systems). *ECRU, National Research Institute For Oceanology: Council For Scientific and Industrial Research*. Stellenbosch, 1985

Brownlie, S *et al.* **The Potential of Plettenberg Bay for Nature Conservation** *School of Environmental Studies, University of Cape Town,* Cape Town, 1982

Fromme, GAW **The Dynamics of the Keurbooms-Bitou Estuary** *Sediment Dynamics Division - Coastal Engineering and Hydraulics - National Research Institute for Oceanology - Council for Scientific and Industrial Research* Stellenbosch, 1985

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deep at spring high tide. The mouth is migratory (its position changes), usually in the following pattern:

- during one of the regular major floods the mouth pushes through (breaches) the sand spit at the north-eastern end of the lagoon;
- after breaching, the mouth gradually (and erratically) erodes on its south-western side and builds up on its north-eastern side, resulting in a migration towards the south-west. As the mouth approaches the south-western end of the lagoon, it travels more and more slowly, due to the size of the dunes and the increased amount of vegetation in that area;
- in time, the cycle begins again when another major flood causes a new breach at the north-eastern end of the lagoon.

At the time that the Dutch East India Company built its timber store (1787), the mouth lay almost at the Lookout Rocks, which was a deciding factor in positioning the store: to the Company, it meant that timber cut upstream could be floated down to the store - and so, it was hoped, create a considerable saving on transport and labour.

Siltation is particularly noticeable in the Keurbooms River Estuary. According to Duvenage, the Keurbooms Estuary is dominated by the flood tides, which cause marine sediments to move into the estuary. This is compounded by the lack of wave movement in the Estuary, which means that sediment that has been brought in on the flood tide is not picked up and removed by the water during the ebb-tides (the incoming tide moves at a higher velocity than the out-going tide).

Duvenage stated that at the time of writing his report (1984) siltation as a result of sediment brought down from the catchment area was almost insignificant (i.e. that there was minimal soil erosion upstream).

The Catchment Area of the Keurbooms/ Bitou System

The catchment area of the Keurbooms/Bitou System is given by Duvenage as being between 1 085 km^2 and 1 188 km^2.

The Keurbooms River's catchment area is estimated at around 859 km^2, and the Bitou at around 237 km^2

The Keurbooms River arises at Spitskop in the Outeniqua Mountains, and is about 70 km long. Its main tributary is the ***Palmiet River*** (which is 35 km long and joins the Keurbooms about 15 km from the Keurbooms River Mouth). Other tributaries include:

The Hartbees River
The Duiwelsgat River
The Klein River
The Diep River
The Witels River
The Kwai River
The Peters River
The Bos River and
The Kykoerie River.

The Bitou River arises at Buffelsnek and is about 23 km long. Its tributaries include:

The Kleineiland River
The Petrus Brand River and
The Rondebos River

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How Man Uses The Keurbooms/ Bitou System

Most of the Keurbooms River catchment is made up of privately owned farms. Many of the farms in the upper reaches of the catchment area consist of natural vegetation (mostly mountain fynbos[109]) that is used for cattle and goat farming. In the middle reaches there are a certain amount of cultivated land and some orchards. Privately-owned indigenous forest is found in the lower reaches.

Most of the upper reaches of the Bitou River's catchment area is covered by indigenous forest managed by the state. The rest of the catchment is covered by private farms with indigenous forest, fynbos and cultivated lands.

Tourism-Related Uses of The Keurbooms/ Bitou System

The Cape Nature Conservation's ***Keurbooms River Nature Reserve*** (128.5 ha, established 1967) lies upstream of the N2 road bridge, and this authority is responsible for the control of recreational boating both above and below the bridge.

The Reserve offers accommodation and hiking, and water sports (including water skiing, angling and bait collecting[110]) are allowed.

Canoeing is a popular sport on the Keurbooms, and it is possible to paddle as high as Whiskey Creek. A Cape Nature Conservation overnight hut is available to canoeists by prior arrangement.

The **Keurbooms River Ferries** offer daily, scheduled sight-seeing trips upstream.

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109 See also *Part 3* of this ***Handbook*** - *Introduction to the Vegetation of the Garden Route*

110 For angling and bait collecting regulations, See *Part 8* of this ***Handbook*** - *Introduction to the Marine Environment*

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Fishes of The Keurbooms/ Bitou System
Duvenage lists the following fishes as being commonly found in the Keurbooms/Bitou System[111]:

Fresh Water Fishes

Eastern Cape redfin
Barbus afer

Slender redfin
Barbus tenuis

Cape kurper
Sandelia capensis

Cape galaxius
Galaxius zebratus

Brown trout
Salmo trutta

Longfin eel
Anguilla mossambica

Estuarine Fishes

Groovy mullet
Liza dumerili

Largescale mullet
Liza microlepis

Cape stumpnose
Rhabdosargus holubi

White steenbras
Lithognathus lithognathus

Southern mullet
Liza richardsonii

[111] For a fuller list of estuarine fishes of the Southern Cape, see - *Introduction to the Marine Environment* above

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The Piesang River System

Characteristics of the Piesang River Estuary

The Piesang River Estuary is about 2 km long, with the head of the estuary lying at the road bridge just below the golf club. A small lagoon is formed behind the sand bar at the Beacon Island, with a shallow channel running along the landward side of the rocks of the island. This channel closes during the drier months (usually in summer), and its shallowness makes the tidal exchange (the in- and out-flow of sea water as a result of rising and falling tides) very weak.

Like the Keurbooms/Bitou Estuary, the Piesang is subject to siltation as a result of marine deposits (sediment brought in to the lagoon by the flood tide is deposited, but cannot be picked up again and removed by the ebb tide because of its relatively slower velocity). The construction of the causeway to the Beacon Island Hotel has stabilised the sand dune on the southern side of the Piesang River Lagoon. This has been to the benefit of the estuary, because it has prevented any chance of wash-over of marine sand from the south.

In the Duvenage report (1984), siltation in the upper reaches of the Piesang River (i.e. from soil erosion) was considered to be minimal.

The Catchment Area of the Piesang River

The catchment are of the Piesang River is given by Duvenage as being between 35 km^2 and 40 km^2.

The Piesang River arises at Harkerville, and it is about 15 km long. It is served by several small tributaries.

How Man Uses The Piesang River

Most of the upper reaches of the Piesang River's catchment area is covered by the Harkerville State Forest. The rest of the catchment is covered by private farms with indigenous forest, plantations, fynbos and cultivated lands.

According to the Guide Plan[112], both banks of the river are set aside as nature reserve (except in the area at the River Club - immediately upstream of the bridge at Beau Rivage - which was originally zoned for recreation).

In the middle reaches, the river runs through wetland vegetation at the golf course, where the water is utilised for irrigation. In the lower reaches, the river runs through farmland and township development.

Tourism-Related Uses of The Piesang River

Because of its size, use of the Piesang River is limited mostly to canoeing.

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112 **Knysna, Wilderness, Plettenberg Bay Guide Plan** *Department of Constitutional Development and Planning*, South Africa, 1983

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Fishes of The Piesang River

Duvenage lists the following fishes as being commonly found in the Piesang River Estuary:

Sea barbel
Galeichthys feliceps

Groovy mullet
Liza dumerili

Cape stumpnose
Rhabdosargus holubi

Southern mullet
Liza richardsonii

Sand Sole
Solea bleekeri

Prison Goby
Caffrogobius multifasciatus

The Robberg Nature Reserve

The Robberg Peninsula is perhaps one of the most important natural features of the Plettenberg Bay area. It is highly visible from most vantage points along the Bay, and stands out as one of the biggest landmarks when the Bay is seen from the air. In 1997, Schneider[113] reported that over 80 000 people per year visit Robberg to walk its trails. This places it in a league with other important day-visitor attractions in the Garden Route such as Knysna's Featherbed Nature Reserve - with 140 000 visitors per year - and the Outeniqua Choo-Choo, with 96 000.

The Size and Management of Robberg Nature Reserve

The Robberg peninsula is 243 hectares in size[114]. It was declared a nature reserve in 1945 (although it had always been reserved as 'public ground'), and is today managed by Cape Nature Conservation.

The full name is ***Robberg Nature and Marine Reserve***. The Peninsula's first recorded name - *Cabo Delgado* (the Steep Cape) was given by Bartholomew Diaz when he made his voyage to discover the passage to India in 1488. Some time after the Cape was colonised by the Dutch, the Peninsula became known as *Robbe Berg* - Seal Mountain - obviously because of the resident seal population. This name was eventually shortened to the present, popular *Robberg*. In formal English usage (such as on navigational charts), it is known as *Cape Seal* (this is why the lighthouse at Robberg is known as the *Cape Seal Lighthouse).*

The Geology of Robberg

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113 Schneider, WL **Robberg Peninsula (with special reference to the Nelson's Bay Cave) - a Tourist's Guide** - unpublished paper for Satour Tourist Guides' Training, 1997

114 McLay, George **Reader's Digest Illustrated Guide to Southern Africa** (4th Edition) *The Reader's Digest Association South Africa (Pty) Ltd. In association with TV Bulpin* Cape Town, 1985

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The lowest visible layer of rock on Robberg is ***Table Mountain Sandstone***, which is easily seen on the first part of the path (between the information centre and The Gap). Weathered sandstone of this type is hard, even-grained and whitish grey (unweathered it is blueish-grey). This is also the oldest rock on the Peninsula, and, as part of the Cape System[115], is estimated to be about 350 million years old.

Above the sandstone is the ***Enon Conglomerate***, which was laid down about 120 million years ago. A broad band of it is visible on the North Side of the peninsula, near The Gap. It looks like somewhat like concrete - rounded and irregularly shaped pebbles cemented together. Rounded pebbles[116] were laid down in this area by fast-flowing rivers. As the strength of the streams was reduced, sand was deposited over the pebbles, filling the gaps between them. Later, silica permeated through the sand, cementing the particles together (silica is the mineral most commonly found in these rocks). As subsequent layers were laid down, the pressure placed on the lower layers compacted them.

The rocks of The Island were formed most recently of all. The are ***calcerous sandstones*** that were laid down within the last one million years. They were formed when the sea deposited sand on the rising land mass. Because they have not been subjected to the consolidating effect of factors such as pressure, these rocks are not very hard and are easily weathered. The honeycomb patterns that are visible in even the harder parts of these calcerous sandstones are caused by erosion as a result of wind-borne spay and sand.

The hard, erosion-resistant rocks of the Robberg Peninsula have had a formative influence on the shape of the Bay itself.[117]

It is important to remember that Robberg was not always surrounded by the sea. In the Tertiary Period, when the sea washed up against the Outeniqua Mountains, it would have been submerged. And in a period up to about 9 000 to 12 000 years ago, when the sea was more than 50 km away from the present shoreline and before it rose to its present level, Robberg was surrounded by grasslands.

The highest point on Robberg is the top of the hill about 800 metres west of the lighthouse - 148.5 metres above sea level.

The Vegetation of Robberg

In keeping with its exposed position, the plant life found on Robberg is typically coastal thicket and fynbos[118].

Birds and Mammals

Over 100 species of birds have been recorded at Robberg. Of special importance is the African Black Oystercatcher (there are a number of resident pairs).[119]

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115 The ***Cape System*** was formed 450 - 300 million years ago, and includes rocks such as sandstone and quartzite with occasional shale and tillite.

116 Because of the way in which the water moves them, rounded pebbles are formed in rivers, and flattened pebbles are formed in the sea.

117 For a description of the formation of half-heart bays (such as the one at Plett), see *Part 8* of the ***Handbook*** - *Introduction to the Marine Environment*.

118 For a more detailed discussion on the plant life of the area, see *Part 3* of the ***Handbook*** - *Introduction to the Vegetation of the Garden Route*.

119 See *Part 8* of the ***Handbook*** - *Introduction to the Marine Environment*.

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Land Mammals
The most commonly seen land mammals are dassies. Other species include

- grysbok
- duiker
- bushbuck
- Cape clawless otter
- mongoose

Marine Mammals
Robberg is one of the best places on our coast for land-based whale- and dolphin-watching. There is a small breeding colony of seals on the Peninsula.

The Robberg Trail
Only a very small portion of the Robberg Peninsula is accessible to vehicles. To appreciate the Reserve fully, it is necessary to walk the Robberg Trail.
Distance 11 kilometres (there is a short cut from Witsand to The Island which cuts the entire trail down by about two thirds)
Duration 4 hours[120]
Difficulty Moderately strenuous

The trail is well indicated with seal marks green perspex signs and with yellow footprints painted on the rocks. Portions of the trail are dangerous because of the sheer cliffs. These are well marked on the maps that are issued to trailists when they enter the Reserve. Where necessary, the Reserves management has erected board walks and fixed chains to make the walk safer.

Archaeological Sites at Robberg
There are about 19 caves on Robberg, many of which have some signs of habitation by primitive and ancient peoples. The most important of these is the Nelson's Bay Cave (which is described in full below - see ***Archaeological Sites Around Plett***). It is accessible to the visitor, and has been marked with interpretative signs.

Although it is not within the borders of the Reserve, the nearby Jerling property was the site of a temporary settlement in 1630, when survivors of the wreck of the *Sao Gonzales* spent about 8 months at the Bay. The exact position of the site was unknown until the Jerling family began excavating for the construction of a new house in 1979, and so uncovered the existence of the earlier settlement. Artefacts from the wreck were recovered from the site, and many have been preserved in the showcases in the entrance to the Plettenberg Bay Municipal Offices.[121]

Tsitsikamma National Park

One of the many things that makes the Garden Route unique in South Africa is the presence of two National Parks (Wilderness and Tsitsikamma) and a National Lake Area (Knysna) within a small geographical area. The Tsitsikamma National Park is an important asset for Plettenberg Bay: in 1997, it attracted 180 000 visitors, 25% of whom were international tourists, and many of whom would have had to pass through the Plettenberg Bay area on their

120 Paterson-Jones, C **Garden Route Walks** *Struik,* Cape Town, 1992

121 See *Part* 2 of the ***Handbook*** - *Chronological History of Plettenberg Bay*

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way to the Park. The trickle-down effect will have injected millions into the local economy.

The Historical Background to the Tsitsikamma National Park

The Tsitsikamma National Park was established as a direct result of the First World Conference on National Parks. During the Conference, which was held in Seattle in the USA in 1962, the maritime nations of the world were called upon to establish marine conservation areas.

The Tsitsikamma National Park was proclaimed on the 4th of December, 1964. It was the first maritime national park to be proclaimed on the Southern African sub-continent. At that time, it included 1 960 ha of land and 34 300 ha of ocean (the narrow coastal strip [about 500 metres] along an 80 km section of sea-shore stretching from west of Nature's Valley to east of the Storms River Mouth, and the area stretching 3 nautical miles [5.5 km] out to sea).

The de Vasselot Section of the National Park was proclaimed a Nature Reserve in 1974, and was managed by the Department of Environment Affairs. In 1987 it was transferred to the National Parks Board and incorporated into the Tsitsikamma National Park. This section comprises 2 560 ha.

The Soetkraal Section was leased from Rand Mines in 1991 for a period of thirty years. It covers 24 372 ha of land, including some 20 000 ha in the Langkloof Mountains.

With the incorporation of the 750 ha of the Perdevlakte Section, the Tsitsikamma National Park covers a total of 63 942 ha in size.

Marine Section	34 300 ha
Soetkraal Section	24 372 ha
de Vasselot Section	2 560 ha
Tsitsikamma Section	1 960 ha
Perdevlakte Section	750 ha
Total	**63 942 ha**

The Tsitsikamma's Unique Marine Resource

The marine environment of the Tsitsikamma National Park is of particular interest because it is an area where warmer and cooler waters meet. The warm Agulhas Current that runs generally southwards along the eastern seaboard of Southern Africa, swings away from the continent at Tsitsikamma. This has the effect of allowing patches of cooler water to penetrate closer to the shore, and creates an intermediate temperature zone in which species of fish and invertebrates associated with both tropical *and* cold waters can be found in *one* area. Besides being of environmental importance, this provides the park with an important tourist attraction, and underwater trails and scuba diving are provided for.

Vegetation of the Tsitsikamma National Park

The topography of the Tsitsikamma National Park includes many different features (mountains, coastal plateau, deep river gorges, etc) which contribute to the diversity of vegetation in the Park. The original Tsitsikamma Section is mostly covered with indigenous forests (the Afro-Montane Forests), but with the introduction of the de Vasselot and Soetkraal Sections, large tracts of fynbos have been included in the Park.

Mammals of the Tsitsikamma National Park

The Park is particularly well known for its resident population of Cape clawless otters, which have often been seen in the streams and pools surrounding the rest camp. Other terrestrial

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mammals which occur in the park include:

- leopard
- caracal
- honey badger
- large-spotted genet
- Cape clawless otter
- water mongoose
- Cape grey mongoose
- bushpig
- vervet monkey
- bushbuck
- blue duiker, and
- dassies[122]

The Otter Trail

Although it is considered to be strenuous, the Otter Trail is one of the country's best-loved hiking trails.

It is in the nature of hiking trails that number of trailists is limited in order to protect the environment and to make the experience of it most meaningful. A maximum of 12 people are allowed to start the Trail on any one day. The current occupancy rate on the Otter Trail is 97%, which translates to about 4 000 trailists per year.

Distance 41 kilometres : Day I 4.6 km
Day 2 7.9 km
Day 3 7.7 km
Day 4 13.8 km
Day 5 6.8 km

Duration 5 days (including 4 nights in huts along the way)

Difficulty Strenuous

The Otter Trail begins at the Storms River Mouth Rest Camp, and ends at Nature's Valley. Hikers follow orange otter signs painted on the rocks. The Trail follows the coast at times close to the sea, and at others inland. It crosses rivers and streams, and the crossing of the Bloukrans River on the fourth - and perhaps most difficult - day is considered one of the trickiest parts of the trail. It is necessary to plan the day's walking so that the Bloukrans is crossed at low tide. An escape route onto the National Road N2 has been provided if the River is impassable, but once the escape route is taken, there is no way back onto the trail.

Accommodation along the way is in log cabins, where beds, toilets and fire wood are provided. Hikers must carry all their own bedding and provisions with them.

Day Walks in the Tsitsikamma National Park

Storms River Mouth Trail

Begin At the restaurant in the Rest Camp at Storms River Mouth

Difficulty Moderate

This is the Park's most popular trail. I km from the start it crosses the river itself via a breath-taking swing bridge. There are a number of bays along the way where trailists may swim,. The trail passes a strandloper cave on the western bank of the

[122] Wagner, P **Die Otter-wandelpad en die Tsitsikammaseekus Nasionale Park** *Struik,* Kaapstad, 1988

Key:	*BR = Breeding resident	*BM = Breeding migrant	*N-BM = Non-breeding migrant
	(A) Afrikaans name	(X) Xhosa name	(G) German name

Storms River Gorge.

Loerie Trail

Begin Storms River Rest Camp
Distance 1 kilometre
Duration ½ hour
Difficulty Moderate

A forest walk that is particularly popular with birders.

Blue Duiker Trail

Begin Storms River Rest Camp
Distance 3 kilometre
Duration 1 ½ hour
Difficulty Moderately strenuous

A forest walk that is popular with birders (Wagner recommends that it is only for the adventuresome)

Waterfall Trail

Begin Storms River Rest Camp at the Oceanettes parking area.
Distance 6 kilometres
Duration 2 - 3 hours
Difficulty Moderately strenuous

The trail follows the first 3 km of the Otter Trail. Day walkers are required to turn back at the waterfall.

Kalanderkloof Trail

Begin Entrance to de Vasselot Camping Site
Duration 2 - 3 hours
Difficulty Moderate

This circular trail follows the Kalanderkloof to a look out point.

Groot River Trail

Begin Entrance to de Vasselot Camping Site
Duration 2 hours
Difficulty Moderate

This circular trail follows the Groot River to the Groot River Bridge and the River Mouth. The route follows the final part of the Otter Trail to a gate, where trailists must turn back and follow a road back to the camp.

Salt River Keurpad Walk

Begin Entrance to de Vasselot Camping Site
Duration 5 - 6 hours
Difficulty Strenuous. May be dangerous over rocks, and is only recommended for people who are fit.

This circular trail follows the Kalanderkloof path, but forks off to the Salt River Mouth and Nature's Valley.

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The Crags via Forest Hall Walk

Begin de Vasselot Camping Site

Duration 4 hours

This is not a circular route. The trail follows the route to the Salt River Mouth, and continues via a coastal path to the Brak River, Forest Hall, and the Post Office at The Crags.

Forest Hall/ the Forest Hall Route and Back

Begin Picnic area at the beginning of the Groot River Pass (R102)

Duration 6 hours

This circular trail follows the Keurpad Path and the Forest Hall Road to Forest Hall itself, then follows the Brak River and a Coastal Route to the Salt River Mouth.

Rest Camps & Tourist Facilities in the Tsitsikamma National Park

There are two rest camps offering various levels of accommodation in the Park:

de Vasselot Camp Site

On the banks of the Groot River, 1 km from Nature's Valley and 30 km from Plett.

Cabins 10 two-bed forest cabins with communal ablution facilities. The cabins are serviced daily, and each is equipped with a canoe

Camping 45 unserviced camp sites which are so positioned in the forest that each one is private There is also a larger area for groups who wish to camp.

Facilities A lapa is provided. There is no shop or restaurant at de Vasselot. Board sailing, canoeing and rowing are allowed on the river.

Storms River Mouth Rest Camp

On the Tsitsikamma Shore at the Storms River Mouth. 68 km from Plett.

Cabins All cottages, Oceanettes and huts are serviced daily:
Two-bed roomed family cottages with 4, 7 or 8 beds, bathroom and kitchen;
One-bed roomed cottages with 4 beds, bathroom and kitchen ;
Two-bed roomed Oceanettes with 4 beds, bathroom and kitchen;
One two-bed roomed Oceanette with 4 beds, bathroom and kitchen adapted for handicapped people.
Huts with two beds and communal ablution facilities

Camping Unserviced camp sites with communal ablution facilities.

Facilities Curio shop (which also sells basic commodities), *a la carte* restaurant and information centre. Residents' swimming pool, guided tours and film shows (in season). Angling is allowed in designated areas within the Park.

Archaeological Sites in Plett

The Southern Cape Coast is rich in caves and middens[123] that prove the existence of people in this area over the last 120 000 years. The two most important excavated sites in the Bay area

[123] A ***midden*** or kitchen midden is described in Webster's Universal Unabridged Dictionary as "*In Archaeology, a heap of refuse supposed to have accumulated around the dwelling of early man, consisting of shells, bones, bits of rude crockery, etc.*"

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are the ***Nelson's Bay Cave*** at Robberg, and the ***Matjes River Rock Shelter*** at Keurboomstrand.

Before 1964, investigation into archaeological sites in the area had often been haphazard, and many were undertaken for commercial gain. Storrar[124] wrote in 1982 that "*the Museum in Cape Town alone has nearly 50 skeletons from the Robberg area and a mass of other archaeological material, but unfortunately the crude methods of excavation ... employed* [prior to the first scientific excavation]*, and the lack of important details of context and chronology, seriously detract from its scientific value*."

Today, deposits in caves and rock shelters are protected by the National Monuments Act (Act 28 of 1969). It is illegal to destroy, damage, excavate, alter or remove any material from cave or rock shelter deposits without written permission from the National Monuments Council, and anyone found guilty of doing so can be fined up to R10 000, and/or imprisoned for up to two years. These stringent measures are necessary because once anything at all is removed or disturbed, its scientific value is destroyed forever.

Nelson's Bay Cave

The first scientific exploration of the middens at Robberg began in 1964 and lasted until 1971. It was undertaken by the Department of Archaeology at the University of Cape Town, working with the Universities of Louvain in Belgium, and Chicago in the USA. The site "*lies very close to the present sea shore and about 60 feet above the present sea level. The latter feature plus the indications of extensive and perhaps deep human occupation within the cave were primary factors in the selection of this site*."[125]

Six main periods were identified at the Cave (naturally the oldest period was excavated last as it was buried deepest in the cave):

From About 120 000 to About 50 000 Years Ago
The Middle Stone Age Occupation

The people who occupied the Cave during this period were *Homo sapiens* with physical features much the same as modern man. Seepage of water from a spring created damp conditions in this deep portion of the cave, causing the softer components of the midden - bone and shell - to decompose. Little is therefore known about the diet of these middle stone age inhabitants (although it is known from other sites that they would have collected shellfish and hunted animals). A number of crude quartzite and silcrete tools were recovered (older stone tools are cruder and larger than later examples).

From About 50 000 to About 18 000 Years Ago

The cave was uninhabited.

From About 18 000 to About 12 000 Years Ago

The change in sea level about 16 000 years ago is well demonstrated in this level. During this period, the area below the Cave was mostly grassland, and the inhabitants

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124 Storrar, P: **Portrait of Plettenberg Bay** *Centaur Publishers*, Cape Town 1982

125 Inskeep, RR: **University of Cape Town Excavations at Plettenberg Bay** in Scientific South Africa, Volume 2 Number 12, October 1965

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ate the flesh of springbok, and the (now extinct) giant buffalo, giant hartebeest and quagga.

The Nelson's Bay Cave was the first site where a particular type of small stone bladelet was found. The collection was classified as the ***Robberg Industry***, and the term is now used to describe similar collections from other sites.

From About 12 000 to About 8 000 Years Ago

During this period the sea continued to rise and came closer to the Cave. Deposits made at this time are therefore characterised by an increase in the amount of shellfish and marine birds and mammals. The change in the vegetation surrounding the cave is also reflected in the faunal (animal) remains as plains animals are replaced by those preferring bushier habitats. The most common tool found at this level was a flat-bladed, stone scraper. Tools of polished bone (such as 'fish gorges' - bone fragments pointed at both ends) were also found.

From About 8 000 to About 2 000 Years Ago

This period is characterised by sophisticated stone tools and polished bone tools, and by beads and pendants made from ostrich eggs and sea shells. The people lived on a mixed diet of fish, shellfish and mammals (bushbuck, oribi and buffalo).

During their first season of excavation, the archaeologists recovered the remains of an 11 year-old child, who had been buried in a near-foetal position, with a grinding stone placed over the left pelvis and a well-made, double-ended bone-point placed under the right pelvis. Radio-carbon tests on the ribs done at the University of Louvain dated the bones to 2700 years ago Inskeep said of the result that "*this is the first accurately-dated human burial to be recovered from South Africa*."

The inhabitants of the Cave at this time were direct ancestors of the San hunter-gatherers.

From About 2 000 to About 500 Years Ago

In the early part of this period, the Khoikoin peoples who inhabited the Cave began herding sheep and cattle and making and using pottery, which represented a major shift in their lifestyle. They used pottery for storing their milk, butter and fat, and also ate fish, shellfish and game animals as well as plant foods.

There is no indication from the excavations that the people in this cave had any contact with the first Europeans at the Bay (the survivors of the wreck of the Sao Gonzales in 1630). Artefacts (broken pieces of pottery - potsherds) from the wreck were found in another cave at Robberg, indicating that there might have been interaction between the groups (this is confirmed in the written record kept by one of the survivors - Friar Francisco dos Santos - whose original manuscript is preserved in the British Museum).

The public may visit Nelson's Bay Cave during Reserve opening times. Interpretative signs have been erected, and solar-powered lighting has been fitted in the first 'room.'

The Matjes River Rock Shelter

The Matjes River Rock Shelter lies on the western bank of the mouth of the Matjes River near

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Keurboomstrand. It was declared a National Monument in 1960.

The first excavations at the Shelter took place in 1928 and 1929, and were conducted by Prof. TF Dreyer of the Department of Zoology at the University of the Orange Free State. This was followed by excavations from 1952 to 1957 conducted by Dr AC Hoffman of the National Museum in Bloemfontein and Dr AJD Meiring of the State Museum in Windhoek. More recent work has been undertaken by Prof. HJ Deacon of the Department of Archaeology at the University of Stellenbosch.

The Matjes River Shelter was first inhabited some 12 000 years ago, and is important for a number of reasons:

The midden is about 10 metres deep and covers about 800 m^2. This makes it one of the largest in the world;

It was used as a burial site, and the remains of about 100 people (children as well as adults) have been found;

By examining the artefacts found in the shelter, scientists can learn about how middle stone age peoples lived and what they ate, and even how the climate, animal life and vegetation of the area has changed over the ages.

Archaeologists have recognised five distinct layers in the Shelter:

- ***Layer E*** - the lowest layer - contained only a limited number of shell fragments and other food remains.
- ***Layer D*** - contained many bone and stone tools and ornaments made of shells and ostrich eggs. Fish and game bones were found among the food remains. There were also a number of burials in this layer.
- ***Layer C*** - a painted burial stone found in this layer was dated at between 5 400 and 7 750 years old. This places it amongst the oldest *dated* rock paintings in Southern Africa. This relatively thin layer revealed many well-made tools, including stone arrow inserts, polished bone artefacts and tools made from ivory. Ornaments included buttons and pendants made from shells, and beads made from ostrich eggs. Burials in this layer were covered with a red ochre. Most of the shells found in this layer came from white mussels.
- ***Layer B*** - the presence of black mussel shells in this layer indicates that the shore close to the cave at that time was rocky (as opposed to sandy shores, where white mussels would have been collected). Amongst the tools found in this layer were polished bone needles, and a number of shell buttons were found. Human remains found in this layer were not as carefully buried as in Layer C.
- ***Layer A*** - the most recent - has been badly eroded. Beads, pendants and stone tools as well as potsherds and bone tools have, however, been recovered from this layer.

The Matjes River Rock Shelter may be visited, but is not always accessible at high tide.

Outdoor Sports and Adventure Tourism in Plett

There are many ways to enjoy the great beauty of Plettenberg Bay, and many business and associations that offer sports and adventure tourism to locals and visitors alike. The following list gives a broad overview of the options available. For detailed information, contact **Plettenberg Bay Tourism** – telephone 533 4065 - or the individual organisations.

Key:	*BR = Breeding resident	*BM = Breeding migrant	*N-BM = Non-breeding migrant
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Angling

Deep Sea fishing charters

Launching is from Central Beach and is controlled by the Ski Boat Association Telephone 533 2941

Light tackle: Keurbooms /Bitou River Estuary

Angling Club (information and boat hire), at Keurbooms Lagoon 535 9740
Aventura Eco, on the Keurbooms lagoon (boat hire) 535 9309
Plett Sports, Yellowwood Centre, Main Street 533 1230

Birding

Bitou Bird Adventures (Pieter Coetzee) 082 569 6274

Black Water Tubing

Storms River Adventures, Tsitsikamma 042 - 541 1836

Bowls

Plettenberg Bay Bowling Club, Challenge Road 533 31060

Bungi Jumping

Kiwi Extreme, Storms River Bridge, Tsitsikamma 083 264 5221

Canoeing

Aventura Eco, on the Keurbooms lagoon (canoe hire) 535 9309
Tsitsikamma National Park, at de Vasselot Rest Camp 042 - 541 1836

Deep-Sea Cruises

Dolphin Discovery Cruises 533 4963
Ocean Adventures 533 5083

Elephant Park

Knysna Elephant Park, near Kranshoek 532 7732

Forest Tours

Storms River Adventures (Woodcutter' Journey) at Tsitsikamma 042 - 541 1836

Golf

Goose Valley, on the N2
Plettenberg Bay Country Club, Piesang Valley Road
Rietvlei Mashie Course & golf driving range, on the N2 near Goose Valley

Hiking Guides

Dolphin Adventures (on most hiking trails) 083 590 3405

Hiking Trails

Blue Duiker Trail (Tsitsikamma National Park)

Begin Storms River Rest Camp (circular route)
Distance 3 kilometre
Duration 1 ½ hour
Difficulty Moderately strenuous

A forest walk that is popular with birders (Wagner recommends that it is only for the adventuresome)

Elephant Walk (Diepwalle State Forest)

Begin Diepwalle Forest Station (circular route)
Distance 18.2 km (can be divided into three shorter routes of 9 km, 8 km or 7km
Duration 7 hours or 2 - 3 hours

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Difficulty Moderate
The trail passes through tall indigenous forests and follows the route that the elephants would have used during their seasonal migrations.

Forest Hall/the Forest Hall Route and Back (Tsitsikamma National Park; 042 - 541 1607)

Begin Picnic area at the beginning of the Groot River Pass on the R102 (circular route)
Distance 18 kilometres
Duration 6 hours
Difficulty Strenuous
This trail follows the Keurpad Path and the Forest Hall Road to Forest Hall itself, then follows the Brak River and a Coastal Route to the Salt River Mouth.

Garden of Eden (near Harkerville) 382 5466

Begin Alongside the N2 near Harkerville (circular route)
Distance 1 km
Duration ½ hours
Difficulty Easy
About 600 metres of this trail has been decked over to make it ***accessible for wheel chairs***. The trail passes through tall indigenous forests.

Groot River Trail (Tsitsikamma National Park 042 - 541 1607)

Begin Entrance to de Vasselot Camping Site (circular route)
Duration 2 hours
This trail follows the Groot River to the Groot River Bridge and the River Mouth. The route follows the final part of the Otter Trail to a gate, where trailists must turn back and follow a road back to the camp.

Kalanderkloof Trail (Tsitsikamma National Park 042 - 541 1607)

Begin Entrance to de Vasselot Camping Site (circular route)
Duration 2 - 3 hours
This trail follows the Kalanderkloof to a look out point.

Kranshoek (Harkerville 382 5466)

Begin Kranshoek picnic site (circular route)
Distance 3 km or 9 km
Duration 2 hours or 5 hours
Difficulty Strenuous
The trail passes through fynbos, moist and dry forests and plantations. It is a coastal walk and is known for its particularly spectacular scenery.

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Loerie Trail (Tsitsikamma National Park 042 - 541 1607)

Begin Storms River Rest Camp (circular route)
Distance 1 kilometre
Duration ½ hour
Difficulty Moderate

A forest walk that is particularly popular with birders.

Milkwood Trail (Plettenberg Bay) 533 4065

Begin Municipal Nursery (circular route)
Distance 5 kilometres
Duration 2 hours
Difficulty Moderate

A trail through the town that passes through forest and crosses wetlands and beaches. Also visits historic sites and viewpoints (such as Signal Hill)

Otter Trail (South African National Parks 021 - 22 2810)

Distance 41 kilometres

Day I 4.6 km
Day 2 7.9 km
Day 3 7.7 km
Day 4 13.8 km
Day 5 6.8 km

Duration 5 days (including 4 nights in huts along the way)
Difficulty Strenuous

The Otter Trail begins at the Storms River Mouth Rest Camp, and ends at Nature's Valley. Hikers follow orange otter signs painted on the rocks. Accommodation along the way is in log cabins. , where beds, toilets and fire wood are provided.

Robberg Trail (Robberg Nature Reserve) 533 3424

Distance 11 kilometres. There is a short cut from Witsand to The Island which cuts the entire trail down by about two thirds (circular route)
Duration 4 hours
Difficulty Moderately strenuous

The trail is well indicated with seal marks green perspex signs and with yellow footprints painted on the rocks. Portions of the trail are dangerous because of the sheer cliffs. These are well marked on the maps that are issued to trailists when they enter the Reserve. Where necessary, the Reserve's management has erected board walks and fixed chains to make the walk safer.

Salt River/ Keurpad Walk (Tsitsikamma National Park 042 - 541 1607)

Begin Entrance to de Vasselot Camping Site (circular route)

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Distance 15 kilometres
Duration 5 - 6 hours
Difficulty Strenuous. May be dangerous over rocks, and is only recommended for people who are fit.

This trail follows the Kalanderkloof path, but forks off to the Salt River Mouth and Nature's Valley.

Storms River Mouth Trail (Tsitsikamma National Park 042 - 541 1607)
Begin At the restaurant in the Rest Camp at Storms River Mouth (circular route)
Distance 1 kilometre
Duration ½ hour
Difficulty Moderate
This is the Park's most popular short trail. I km from the start it crosses the river itself via a breath-taking swing bridge. There are a number of bays along the way where trailists may swim,. The trail passes a strandloper cave on the western bank of the Storms River Gorge.

Tsitsikamma Hiking Trail (on Safcol land at Tsitsikamma 042 - 910 393)
Begin Nature's Valley
Distance 63.5 km
Day 115 km
Day 214 km
Day 313 km
Day 414 km
Day 57.5 km
Duration 5 days
Difficulty Strenuous
Trailists usually spend the first night at the Kalander hut, and begin walking on the following morning. The route passes through forest and fynbos and ends at the Storms River Bridge. Overnight accommodation is in Forestry huts.

Waterfall Trail (Tsitsikamma National Park 042 - 541 1607)
Begin Storms River Rest Camp at the Oceanettes parking area (circular route)
Distance 6 kilometres
Duration 2 - 3 hours
Difficulty Moderately strenuous
The trail follows the first 3 km of the Otter Trail. Day walkers are required to turn back at the water

Wittedrift High School Nature Trail (Wittedrift 533 9731)
Begin Wittedrift High School (circular route)
Distance From 1 to 20 km
Duration 1 - 8 hours

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Difficulty Varies from easy to strenuous depending on the chosen route.
This is one of the few trails in the area where horses and dogs are welcome. An overnight hut is available and can be booked at the Wittedrift Butchery 9760.

Horse Riding

Equitrailing, at the Avontuur, Wittedrift turnoff
Southern Comfort, near Fisanthoek

Monkeyland

Monkeyland, near Forest Hall at the Crags 534 8906

Mountain Biking

Guided Mountain Bike Tours

Outeniqua Biking Trails, at Harkerville 532 7644

Mountain Bike Hire

Outeniqua Biking Trails, at Harkerville 532 7644

Mountain Bike Trails

Harkerville Blue Route (Garden of Eden; DWAF, Knysna 382 5466)

Begin Garden of Eden (circular route)
Distance 12 kilometres
Duration 1 ½ hours
Passes through fynbos, indigenous forest and plantation, as well as a small stand of coast redwoods that were planted as an experiment in 1927.

Harkerville Green Route (Garden of Eden; DWAF, Knysna 382 5466)
Begin Garden of Eden (circular route)
Distance 15 kilometres
Duration 2m ½ hours
Passes through fynbos, indigenous forest and plantation. There is a swimming hole on the route at Waterpad.

Harkerville Red Route (Garden of Eden; DWAF, Knysna 382 5466)
Begin Garden of Eden (circular route)
Distance 24 kilometres
Duration 3 - 5 hours
This is a strenuous route designed for fitter cyclists. It is a scenically magnificent route, and is known for its long stretches off-road track. Passes through fynbos, indigenous forest and plantation.

Harkerville Yellow Route (Garden of Eden; DWAF, Knysna 382 5466)
Begin Garden of Eden (circular route)
Distance 14 kilometres
Duration 1 ½ hours
Follows gravelled service roads through fynbos, indigenous forest and plantation. The only route at Harkerville that remains open when the conditions are wet.

Petrus-se-Brand Cycle Route (Diepwalle; DWAF, Knysna 382 5466)
Begin Diepwalle or Garden of Eden (this is not a circular route)
Distance 24 kilometres
Duration 1 ½ to 3 hours
Most riders follow the south-bound route (from Diepwalle to Garden of Eden) which is somewhat easier due to the fall in elevation. Fitter riders may wish to ride northwards. Passes through indigenous forest and fynbos. Drinking water is provided, and swimming is allowed in the Kleineiland River

Storms River Cycle Route (Tsitsikamma; DWAF, Knysna 382 5466)
Begin Storms River Village (circular route)
Distance 22 kilometres
Duration 3 to 4 hours
This is classified as an easy-grade route. Follows the old gravel road through the Storms River Gorge. Passes through indigenous forest and plantation.

River Cruises
Aventura Eco, on the Keurbooms lagoon (champagne cruises) 535 9309
Keurbooms River Ferries, on the Keurbooms River 083 254 3551
Sea Kayaking
Dolphin Adventures (from Hobie Beach) 083 590 3405
Scenic Flights
African Ramble Air Safaris, Plett Airport 083 375 6514
Scuba Diving
Diving International , Milkwood Centre, Hopwood Street 533 0381
Beyond the Beach Divers, Beacon Island Hotel, 533 1158
Snorkelling
Tsitsikamma Underwater Trail. Tsitsikamma National Park 042 - 541 1607
Surfing
Surf Reports, info & board hire
Ocean Life, Lookout Centre, Main Street 533 3253
Tennis
Plettenberg Bay Country Club, Piesang Valley Road 533 0527
Tours, Safaris and Photographic Safaris
Kingfisher Eco-Tours and Safaris 533 9719
Touchtree Images 083 260 2537
Water Skiing
Allowed on the Keurbooms River: Aventura Eco, 535 9309
Whale Watching

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Information

MTN Cape Whale Route Hotline 083 910 1028
The Whale Shop, Piesang Valley Road 533 3743
Local Whale Hotline: Dennis 533 3743

Land-based Whale Watching Sites

- Beachy Head Drive: there are two good sites on this road - the parking area next to N°1 Beachy Head Drive, and the park between Robberg 4 and 5
- Beacon Island
- Keurbooms Strand
- Kranshoek picnic site
- Lookout Rocks
- Lookout view site, Formosa Street (with interpretative sign)
- Nature's Valley
- Robberg Nature Reserve
- Robberg Beach
- Signal Hill
- Tsitsikamma National Park

Restaurant-based Whale Watching

If you want to eat or drink while you're watching the whales, visit restaurants such as these:

- Beacon Island Hotel
- Moby Dick's Seafood Bistro
- The Crows Nest Deck
- The Lookout Deck
- The Singing Kettle, Keurbooms Strand

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Part 12
Guiding Techniques

Key: *BR = Breeding resident (A) Afrikaans name | *BM = Breeding migrant (X) Xhosa name | *N-BM = Non-breeding migrant (G) German name

Guiding Techniques[126]

This section of the manual outlines the basic skills required by specialist guides, driver-guides and on-bus guides.

In recent years, various experienced Tourist Guides and officials of South African Tourism have established formalised guide training courses that provide accreditation and ensure a high standard of professionalism amongst guides. The following notes are based on these courses.

The Role of The Tourist Guide

Tourist guides are expected to promote South Africa, and the region, local area and specialties of the area in which they work.

The tourist or guest expects the guide to be a source of information, entertainment and assistance who will interpret the significance of what they see in both the human and natural environment.

In general, the tourist guide must:

- provide a professional service;
- present South Africa, and his or her specific area of the tourism industry;
- recognise guest interests and ensure that they enjoy themselves;
- provide interesting and factual information in a friendly and entertaining manner;
- enjoy what he or she does (whilst at the same time earning an income) so that this enjoyment is reflected in his or her work;
- behave with integrity; and
- handle people and situations objectively, with tact and in a friendly but efficient manner.

Communication

On the surface this appears to be an easy topic because we can all speak, and we therefore believe that we can communicate. But communication is in fact a far more complex process that is made up of two parts: verbal and non-verbal communication.

Verbal Communication:

Good speech conveys exactly what the speaker intends to convey, without attracting too much attention to the speaker. It involves all levels of being: physical, mental, emotional and spiritual - and it is something that *can* be learned. Training in speech, drama, etc. is to be recommended as speech is the principal instrument of communication and the major tool of the guiding trade.

The following guide-lines will assist in your speech training:

Breathing

[126] Material for this section supplied by and used with the kind permission of **Keith Burton** of Plettenberg Bay, who is a guide trainer accredited by South African Tourism.

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Proper breath control will prevent the voice from sounding weak, thin and strained.

Be sure to sit or stand up straight so that the diaphragm and ribs have enough room to expand (it is impossible to breathe properly from a hunched-up position).

Keep your shoulders and neck relaxed and remember that strain or tension are conveyed through your voice (consistent strain can also lead to complications that range from losing your voice to developing nodules on your vocal cords).

Practice breath control exercises such as this:

- breathe in for a slow count of four,
- hold for a count of two,
- breathe out slowly while intoning 'one, two, three...' etc., until you begin to feel the strain of running out of breath. It is the sustained control of the outgoing breath that is important.

Resonance

Here are two exercises for developing resonance (a strong, but not necessarily loud, ringing tone to the voice):

- hum as you breathe in and out. Be sure to feel that your lips are tingling, but that there is no strain at all on your vocal cords. Stop when you begin to feel strain, as you will do more harm than good.
- relax your jaw and let the mouth fall open as you intone 'maaam-maaam-maaam...' Again, you should stop once you begin to feel any strain.

Articulation

Clear speech that is easily understood by the listener is described as being 'well articulated.' To achieve this, you need to learn to control your tongue. Tongue twisters involving the tongue tip (she sells sea shells...,Twister Twistle was trying to whistle...,etc) are excellent. Remember that the lips help to shape the words. Work on exercise to develop flexibility of the lips.

It is importance that all these exercises should be done when you are in a relaxed state. They should be practised every day and continued even after you think you have mastered good speech.

Remember that as a tourist guide you have a captive audience. Your guests should not be submitted to a constant barrage of unpleasant sound because you have not taken the trouble to listen to what you sound like and to undergo thorough training in speech.

Non-Verbal Communication

Often referred to as 'body language,' non-verbal communication is a complex subject that affects the way we relate on a one-to-one basis, and can profoundly influence the way people from different cultures relate to one another. This is why really professional tourist guides study this subject in greater depth.

Each of us has our own movement patterns which are peculiar to ourselves and can reveal a great deal about our personality. These are often influenced by cultural characteristics such as spatial awareness. For example, Mediterranean people (who may stand quite close to you) have a different spatial awareness from Nordic people (who would generally stand further away).

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Be aware of this and learn to view your guests with this greater awareness. Look at their overall bearing - are the shoulders drooping? Is there something special in the way they walk? This will lead to a greater understanding of why a person moves in a particular way and could well help to avoid a conflict situation.

Understand national characteristics and behaviour and learn about cultural differences in greeting: for example, whether to shake hands - and how to do so (with a firm grip or loosely? – some people will assume that too hard a handshake is arrogant or even threatening). With some cultures a handshake may be inappropriate, and you may be required to bow, or simply to keep your distance etc. By observing these courtesies you will avoid giving offence.

If you are unsure of any of these protocols, it is acceptable (desirable) to ask what to do. Overseas tour groups will often be accompanied by a guide who will advise on how to proceed if you ask - politely – "how am I expected to greet your guests, please?"

Try to observe yourself in action - ideally with the help of a video camera so that you can study your own habits and idiosyncrasies. From this you can learn, for example, whether you fiddle with your pen or your hair, or whether you twitch your shoulders or mouth. Do you have any irritating little shadow gesture which could become a focal point and so detract from what you are trying to say? Do you have a repetitive manner of speaking (listen to your commentary on tape)? What do you look like? Do you have a pleasant countenance even at the end of a long day or are you inclined to show the strains and irritations? Work at overcoming this and always giving the appearance of being relaxed and in control.

Microphone Technique

Don't be frightened of public address systems – it's really quite simple to make the 'mike' an extension of yourself.

If possible, test the microphone and adjust the volume level before your guests take their seats in the room or on the vehicle. Tap the mike with your finger to check if it is turned on. *Never blow into a microphone!* It creates a dreadful noise for your listeners and the humidity of your breath could damage the microphone.

Hold the mike so that it rests on your chin. In this way the mike will move with you when you turn your head and your voice will pass over the sensitive area without exaggerating any plosive sounds ('p' - 'b' etc.);

Switch off the microphone when you are not using it or when you are speaking privately to someone – your guests won't want to hear these conversations!

Repeat questions that individual guests ask before you answer them over the mike. People seated at the back of the coach may not have heard the question and it is very frustrating to be told 'yes, but not very much now' when you have no idea what the speaker is referring to!

Suggestions For Improving Your Speech And Voice[127]:

Think Clearly And Purposefully Before You Speak This helps you know what you want

[127] In the sub-section **Suggestions For Improving Your Speech And Voice**, Burton quotes B L Grant, author of *A Tour-guide Manual for South Africa*

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to say and the way you want to say it. It is disturbing to have a guide who keeps tripping over words and sentences. Knowing what you want to say enables you to avoid bad speech habits as 'um's,' 'er's' and 'ah's'.

Build A Good Vocabulary This enables you to present what you have to say interestingly. Clear, colourful, concise speech is not boring. Avoid phrases such as 'sort of,' 'kind of' and 'you know.' When speaking to foreigners, speak more slowly and use clear, simple language.

Develop A Flexible Range Of Vocal Tone Your voice is affected by your attitudes, emotions and feelings, the voice becomes dull; when you re bored it lacks modulation and range; and when you become anxious it is strained, hard and incorrectly pitched.

You hold a group's attention by the tone of your voice and the manner in which you present what is to be said. Keep a smile in your voice as it helps you avoid harshness and mechanical drone. Keep your voice strong and audible - do not let it die away. However, do not boom at the people as they will withdraw mentally.

If you feel your voice is dull or too soft, practice saying the alphabet, or counting loudly in front of a mirror in different ways, e.g. sadly, happily, in a high pitch and a low pitch, softly and loudly. Imagine you are talking to people in a small room or in a large room. This will help you gain control of voice volume and tone. Humming also helps to develop voice volume. The lips should tingle if it is done correctly.

Develop An Awareness And Feeling For The Rhythm Of Speech. Good speech has a rhythm which makes the meaning clear and listening easy. Develop an easy flow of language. Remember to complete sentences. Vary your pace from time to time. Use pauses for effect, to draw attention to a point or to give people an opportunity to ask questions. Change your pitch with a change of thought.

Watch Your Pronunciation. Most people have an accent, but try to make yours not too noticeable. Try to pronounce the words of the language that you are using correctly.

Important Guiding Techniques.

Before Meeting Your Guests ensure that you arrive at your starting point early enough for last minute reparations such as checking your P.A. system or, if you are to give printed hand-outs to the group, that you have sufficient stock, etc.

If you are using a vehicle, make sure that it is clean and fuelled up and that the passengers doors are open and, at night, that interior lights are turned on before your guests arrive.

When Your Guest Arrive: ask for the Tour Manager (tour guide, teacher, group leader, etc.) and introduce yourself. Ask how many guests there are, and greet them as soon as possible

Relax Your Guests by giving them a brief summary of the activities that are planned for them, and that that you will be looking after them for the duration of their stay. Be cheerful and reassuring.

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Recognise interests: Try to establish if any members of the group have special interests. If you are sensitive about it, it's often possible to give these interests special attention without boring the rest of the group. In fact, they can add a new dimension to your tour.

As a driver/guide in a micro-bus: Learn to project your voice to that it bounces off the windscreen. *Never turn around to speak to your passengers whilst you are driving.* Besides being very dangerous, this tends to terrify your guests! Be sure that those seated in the back can hear what you are saying. Use a clip-on microphone if possible. Always see that your passengers are seated and the doors closed before taking your driving seat.

As a step-on guide in a coach or micro-bus: when you step on to a coach you become part of a team: there may be a tour leader (tour manager or teacher) as well as a tour guide and a driver. Your job is to *work together with these people* in order to present your specialty to their group.

Accompany your tour: except during periods when the itinerary indicates an 'at leisure,' you should always accompany your group. At attractions that provide them, ensure that that the group is in the capable hands of a specialist guide.

Briefing and debriefing: Make sure that your tour programme will work - if not discuss it with the tour coordinator. At a museum, for instance, you may realise that the plan allows a long time for serving refreshments but too short a time for viewing exhibits. Resolving such things beforehand will prevent them from becoming problems during the tour.

Report any compliments, incidents or problems to your manager immediately after each tour

Be flexible: Tour programmes should always be followed strictly because detours or major alterations can affect the time that your guests arrive at their next stop, but you should remain as flexible as you can within the time allowed.

If your tour is unavoidably delayed or extended, make sure that those whom the change will affect (such as the people at the guests' next destination) know what time to expect the group. If possible, offer the tour manager the use of a phone or offer to makes the calls yourself.

Relationships.

As a guide you should build friendly and co-operative relationships with your guests, with other guides, and with the drivers and tour manager that you meet. This is essential for a smooth and enjoyable tour. Remember, too, that you will deal with many of these people over and over again.

You should also make friends with managers and staff at local hotels, guest houses, restaurants and special attractions. They can be very important in convincing their guests to come on your tours. This will increase both your company's turnover and your earning potential.

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Handling Problems

Complaints should be handled sensitively, remembering at all times that you should never become defensive. Never say "it's not my fault" or "it's not my job." Complaints must never be taken as personal attacks on yourself or on your employers: they show that your guest is not happy with the goods or services that have been provided, and your job is to make your guest happy.

It's best to view a complaint as an opportunity to improve your level of service.

Unhappy guests will leave and may influence their friends to stay away from your company (town, nature reserve, entertainment centre, etc.). Happy guests, on the other hand, will definitely recommend you to their friends, which will increase the Park's visitor numbers and therefore your earning capacity.

This is the simple secret to good guiding, good service and good business!

Remember that adversity often draws people together, and, if you use your initiative, you can use a potentially damaging situation to create real friendships with your guests.

The 'bottom line' is that friendships serve to increase visitor numbers– and, as a result, your own earning capacity.

Complaints Regarding Another Member of Staff: Listen to the complaint - do not take sides. If the complaint requires further action, convey the facts to your manager.

Complaints Regarding Your Attraction: If you feel that you wish to complain about service, food or any other problems, do so discreetly so as not to run down the establishment in front of your guests. They are often unaware that anything is out of the ordinary.

It is important to satisfy all reasonable requests or complaints to the best of your ability, or to call for assistance from your manager as soon as possible.

Use tact and imagination to give your client the best possible service.

Sickness or Accidents: Do whatever you can to make the victim comfortable but remember that, unless you have done an accredited First Aid course, you should not move or attempt revival techniques on people who have collapsed or have been seriously injured (this is especially true for neck and back injury victims).

Call for help from your safety officer or your manager as soon as possible. If necessary, call for an ambulance or paramedics.

Disabled Guests: remember that disabled people can usually do everything you can do – they often just do things differently. Treat disabled people with the same courtesy that you would everybody else, whilst offering help with access, to lift a wheel chair over steps, etc.

Here are some guidelines that may be useful:

- The blind 'look' with their hands, so, within reason, you may encourage blind guests to feel exhibits that sighted people may be barred from touching.
- Guide dogs are highly trained working animals, and should not be petted whilst they are working (i.e. when the owner is holding the dog's harness).
- Unless you are asked to do so, you should not shout at people who are

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hard of hearing. Many deaf people can 'lip read' and your shouting won't get through their deafness: all it does is to distort your mouth and make you even more difficult to understand!

Senior citizens and the infirm: be patient with older people and the infirm, as they may take longer to move around than the rest of your group. Remember that they have visited you in order to enjoy themselves - just like everybody else - and that it is your job to make their visit a happy one.

In The Event Of An Accident Involving Vehicles: ***Stop your vehicle immediately***: Ascertain the nature and extent of any injury sustained by anyone. *If people or animals have been injured, call for help immediately.*

- Ascertain the damage to vehicles, make notes of the time and date the accident has occurred.
- Take details - name and address, telephone numbers, registration numbers, and details of the other party's insurer
- Collect names and addresses of witnesses.
- You have twenty four hours to report the accident to the Police station and render any additional information that may be required.
- You may not, except on the instructions of a Medical Practitioner, consume any intoxicating liquor before reporting the accident.
- You may move your vehicle if no passengers have been injured. If anyone *has* been injured you must not move the vehicle until the Police give you permission to do so. If the vehicle is obstructing the free flow of traffic you may move it providing you mark the exact place where the vehicle came to a stop.
- If you are involved in an accident, you should never admit that you are at fault.
- Call your manager as soon as possible.

Client Aggression: You may occasionally have to deal with aggression associated with drunkenness. This must be handled firmly – especially if there is a threat to yourself, other guests or property.

Warn the offending party that you intend to ask them to leave the tour unless they behave correctly. This should be done quietly and firmly, and without causing embarrassment (which will happen if you make loud comments in earshot of other people).

If the problem persists, call for assistance from a security officer, your manager or the police.

Never place yourself in any danger, and always call for help if you are unsure of whether danger exists.

Intruders or 'hangers on': Be polite and tactful when advising outsiders that you are conducting a private tour for a group of visitors.

Breakdowns: if your vehicle breaks down, and if you are unable to effect immediate repairs, call for assistance from your manager so that the tour can get underway again as

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quickly as possible. Never swear at the vehicle and don't make a fuss – these things happen and, if you are calm and accepting whilst being efficient about resolving the situation, your guests will usually be calm and accepting, too.

Emergency Action In Case Of A Death On Tour: The sudden death of a passenger could be a guide's worst nightmare.

- The first things to do are to advise your manager, a doctor and the police. You may also need to call for an ambulance.
- If the deceased is a foreign visitor, you manager will need to contact his or her embassy or consulate.
- If you feel there is a threat of theft, remove any jewelry from the deceased and place them in safe custody. If you do this, make a list of the items you remove in front of a witness, and record the witnesses name and address.
- Once the body has been taken to a hospital, a doctor will declare the person dead (remember that this is not a death certificate, which will be issued at the mortuary, after a state pathologist has examined body).
- As the guide, you may be required to identify the deceased at the mortuary.
- If the body has to be removed to another country the Department of National Health will issue a permit for its removal.

Whilst this is not a pleasant subject, it is vital for guides to know what should be done so that you won't panic if the situation arises.

Code Of Guiding Practice

Guests interests are paramount: Whilst on tour, the tourist guide is always on duty. Therefore, everything you do must be in the interest of your guests.

Gratuities: (Tips) are a bonus and *not a right*. They should be accepted with dignity and thanks. When working with a driver, ensure that he or she receives 50% of joint gratuities, and if you are responsible for paying gratuities, don't forget to do so: and don't short pay!.

Drinking, Smoking, 'Off' Jokes and Bad Language: no tourist guide may consume any intoxicating liquor or narcotic whilst on duty. Smoking should be confined to rest stops and you should never smoke when driving or guiding.

Beware of 'off' jokes, bad taste, or religious, ethnic or cross-cultural jokes.

The professional tourist guide is serious about his or her commitment to tourism, is a person who cares and who accepts that the guest is paramount and entitled to the very best attention and service.

A professional tourist guide will be:

- careful
- thoughtful
- courteous
- enthusiastic
- knowledgeable
- an on-going learner

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- a leader
- a problem solver
- respectful
- happily remembered

Some Tips For Running A Successful Tour

Your tourist guide's badge is only the first step to becoming a good and respected guide. Here are some useful tips to help you on your way:

Review your notes before each tour and always be on the alert for new and interesting information.

Your guests want facts that are presented in an interesting and entertaining way. Ensure, therefore, that you speak clearly and without haste so that every word can be understood.

Be friendly and patient – this is what your guests have paid for!

Check for any items left behind by your guests at the end of each leg of the tour, and return them as quickly as you can.

Drive with consideration for your passengers, the vehicle, and other road users. Respect speed limits and other laws of the road.

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A tourist guide must

- Wear the current South African Tourism tourist guides' badge.
- Be suitably dressed while on duty.
- Not solicit gratuities or commissions.
- Be punctual and reliable.
- Act in a responsible way.
- Represent the country objectively.
- Be diplomatic at all times.
- Be loyal to the community or organisation that he or she represents.
- Carry out the programme to the best of his or her ability.
- Consume no alcohol or drugs whilst on duty.
- Act in a professional manner at all times.

First Aid

Tourist guides registered with South African Tourism are required to attend a basic first aid course offered by recognised training organisations such as Red Cross, St Johns, SA Noodhulpliga, etc. You should ask your manager if you wish to attend such a course.

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[128] **This bibliography should be read as follows:**
Author's Name/s: Book's (Or Magazine Article's) Title *Publisher's Name*, Place of Publication & Date of Publication
Where individual articles have been sourced from magazines, the publication's name has been underlined.

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Useful Addresses

Regional Tourism Organisation

Regional Services Council, Tourism Department
P O Box 1514 George 6530
54 York Street, George
044 - 873 6314/55 **Fax** 044 – 884 0688
E-mail tourism@scdc.co.za
www.gardenroute.org.za

Municipal Tourism Bureaux in the Garden Route

Heidelberg Tourism Bureau
Private Bag X12 Heidelberg 6665
028 - 722 1917 **Fax** 028 - 722 1157
E-mail hbmun@malan.co.za

Riversdale Tourism Bureau
P O Box 29 Riversdale 6770
028 - 713 2418 **Fax** 028 - 713 3146

Stilbaai Tourism Bureau
P O Box 245 Stilbaai 6674
028 - 754 2602 **Fax** 028 - 754 2549
E-mail info.sb@gardenet.co.za
www.stilbaai.co.za

Albertinia Tourism Bureau
P O Box 59 Albertinia 6695
028 - 735 1000 **Fax** 028 - 735 2055

Mossel Bay Tourism Bureau
P O Box 1556 Mossel Bay 6500
044 - 691 2202 **Fax** 044 - 691 3077
www.gardenroute.net/mby/

Great Brak River Tourism Bureau
P O Box 20 Great Brak River 6525
044 - 620 3338 **Fax** 044 - 620 3176

George Tourism Bureau
P O Box 1109 George 6530

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044 - 810 9295 **Fax** 044 - 873 5228
www.georgetourism.co.za

Wilderness Tourism Bureau
P O Box 188 Wilderness 6560
Leila's Lane, Wilderness behind Karos Hotel)
044 - 877 0045 **Fax** 044 - 877 0045
www.weta.co.za

Sedgefield Tourism Bureau
P O Box 882, Sedgefield 6573
Railway Station, Sedgefield Behind Forest Lodge)
044 - 343 2658 **Fax** 044 - 343 2658
www.sedgebiz.co.za

Knysna Tourism Bureau
P O Box 87, Knysna 6570
Main Street, Knysna
044 - 382 5510 **Fax** 044 - 382 1646
E-mail knysna.tourism@pixie.co.za
www.knysna-info.co.za

Plettenberg Bay Tourism Bureau
P O Box 894 Plettenberg Bay 6600
044 - 5333 4065 **Fax** 044 - 533 4066
E-mail plet.tourism@pixie.co.za
www.plettenbergbay.co.za

Non-Government Organisations

MTN Cape Whale Route
P O Box 797 Howard Place 7450
082 401 7347 **Fax** 021 - 401 7303
http://www.mtn.co.za/whaleroute/_

MTN Whale Hotline for info on whale sightings & reporting whale sightings)
083 910 1028

National Parks, Nature Reserves & Conservation Organisations

Wilderness National Park

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P O Box 35 Wilderness 6560
Rondevlei, District Sedgefield
Fax 044 - 343 1302 **Fax** 044 - 343 2331

Knysna National Lake Area
Thesen's Jetty, Thesen's Island
044 - 382 095 **Fax** 044 - 382 5801

Tsitsikamma National Park
P O Storms River 6308
Storms River Mouth
042 - 541 1629

Cape Nature Conservation
Private Bag X6546 George 6530
York Park Building, York Street
044 - 874 2160 **Fax** 044 - 874 1567
E-mail cnc.coast@pixie.co.za
www.capenature.org.za

Goukamma Nature Reserve
Private Bag X646 George 6530
Groenvlei 044 - 343 2160

Robberg Nature Reserve
Private Bag X6546 George 6530
044 - 533 3424

Wildlife Society, **Bird Clubs, etc.**
George Branch 044 - 874 6719
Sedgefield Branch 044 - 343 1737
The Lakes Bird Club 044 - 343 2164

Oystercatcher Conservation Programme
Percy FitzPatrick Institute of African Ornithology
University of Cape Town, Rondebosch 7701
021 - 650 3293 Fax 021 - 650 3295
E-mail ocp@botzoo.uct.ac.za

Private Nature Reserves That Are Open to the Public
these reserves charge entrance fees)

Knysna
Buffalo Valley Game Farm 044 - 382 2481
Featherbed Nature Reserve 044 - 382 1693
Pledge Nature Reserve 044 - 382 1610

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

Plettenberg Bay

Monkeyland Primate Sanctuary 044 – 534 8906

Buffalo Hills Game Reserve & Private Lodge 044 - 535 9739

Key: *BR = Breeding resident *BM = Breeding migrant *N-BM = Non-breeding migrant
(A) Afrikaans name (X) Xhosa name (G) German name

Index

Including English, Afrikaans, Xhosa & Scientific names
Scientific names in *Italics*; Ships' names underlined

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