

# Maputaland Coast 1D

**T**he remote and beautiful Maputaland coast lies between Lake St Lucia and the South African border with Mozambique. Well known holiday destinations such as Cape Vidal, Sodwana Bay and Kosi Bay all fall within this coastal region.

The Maputaland coastline is dominated by wide, sandy beaches, interspersed with rocky outcrops that are sandwiched between an almost continuous barrier of forested dunes and the blue of the Indian Ocean. The Agulhas Current, usually a few kilometres offshore, brings warm tropical water southwards. It is this warming effect that allows many tropical species to survive this far south. Closer inshore, a northward moving counter-current is formed by local winds and wave refraction. This current brings sand northwards, thereby replenishing the beaches and building the huge coastal dunes that are characteristic of Maputaland.

The characteristic golden beaches of Maputaland are discoloured black, in places, indicating a high concentration of heavy minerals. Two small rivers enter the sea in this area, but, as neither of them carry much sediment, the sea is generally

clear. In the south, however, the large Umfolozi River carries a heavy sediment load into the sea, staining the water.

## Management

The entire coastline from Cape Vidal to the Mozambique border (145 km) lies within the St Lucia and Maputaland Marine Reserves, which are managed by the KwaZulu-Natal Wildlife. The St Lucia Marine Reserve extends from Cape Vidal to White Sands and has a "no-take" sanctuary area within its borders. The Maputaland Marine Reserve extends from White Sands to the Mozambique border and also has a sanctuary area. Outside the sanctuary areas, controlled game fishing is allowed by skiboat fishers and spearfishers, while rock and surf fishers may catch reef fish and game fish. In the Maputaland Marine Reserve, harvesting of intertidal invertebrates is only allowed by rural people living in the Kosi Bay area. No one else may harvest intertidal resources in this area.

## Popular dive site

The reefs north of Sodwana Bay are the most popular dive site in South Africa and over 100 000 dives are recorded on the reefs annually. Careful control of diver behaviour is necessary to ensure protection of the fragile corals.



Kosi Bay

## Proposed trans-border development

The Maputaland coastline, with its unique combination of natural riches and cultural wealth, is currently being investigated as part of the Lubombo Spatial Development Initiative (SDI). The SDI incorporates the whole coastline, from St Lucia to the Mozambique city of Maputo, and the adjacent coastal plain into a key area for development. Ecotourism will form an integral component of the SDI.

## Biodiversity

The Maputaland coastline can be divided into a number of discrete ecosystems:

**Coral Reefs** Offshore tropical corals have encrusted ancient sand dunes that were formed when the coastline lay further to the east, but which are now turned to stone and lie submerged in 5-25 m of water. The corals in the area, unlike the huge ancient coral reefs found in the tropics, are therefore a thin veneer covering the sandstone reefs. Both hard and soft corals occur in the area, but soft corals are dominant. The coral reef provides a habitat for thousands of different animals. Diverse fishes, echinoderms, crustaceans, snails, worms, sponges and other animals are found in association with the corals. Over 400 species of fish have been recorded in the area.

**Rocky Shores** The rock-pools that have been created in the sandstone platforms by the movement of the water, are habitats for a variety of marine life. Mussels, oysters, limpets, anemones, sea weeds and barnacles all attach themselves to the rocks to avoid being washed out to sea by the waves. Fish, crabs, snails, worms, sea urchins and sea stars hide in the pools. This area is a fascinating place to visit during low tide, when many animals are easily visible.

**Sandy Beaches** Although often considered to be merely a place to sunbathe or play beach games, sandy beaches are host to a variety of burrowing animals ranging from ghost crabs and mole crabs, to snails and tiny worms. Hundreds of minute animals, that are capable of living between the sand grains, are also found on the beaches. Each summer, hundreds of female loggerhead and leatherback turtles lay their eggs, at night, on these beaches. The eggs remain protected in their nests in the sand until the hatchlings are ready to emerge,

and face the gauntlet of predators as they scramble to the water's edge.

**Dunes** The dunes can be divided into a number of distinct zones, based on the dominant vegetation. Plants in the fore-dunes are generally tough and can withstand the wind, salt and moving sand in the area. Further inland are barrier dunes, covered in dense scrub thickets. In the lee of the dunes the influence of the sea and the wind is reduced and huge dune forests reach 6-18 m in height.

**Lake Sibaya** This freshwater lake is situated behind the dunes, between Kosi Bay and Sodwana Bay. The lake has an average surface area of 70 km<sup>2</sup> and is about 13 m deep. Eighteen species of fish have been recorded in the lake, while 279 species of birds and 22 species of frogs have been recorded in the area. Eight reptile species live in the adjacent grasslands and savannah. Crocodiles and hippos are also common in and around the lake.

## Local people

For the future survival of nature reserves, it is vital that local people are able to see the benefits of eco-tourism. These benefits may be through the opportunity to harvest natural resources in conservation areas, job creation or through joint eco-tourism ventures between management agencies and local communities. In the northern areas of Maputaland, rural inhabitants gather mussels, limpets and redbait from the rocky shores and ghost crabs on the beaches. This collection of food is being monitored to try and ensure that it is sustainable.

## Tourism

This popular tourist destination attracts a wide variety of people. International tourists visit the area for its unique 'sense of place', beauty and diversity, while local tourists come to enjoy the fishing and diving. Billfish angling, snorkelling, rock and surf fishing and SCUBA diving, guided night drives to see nesting turtles, boat tours and hikes along the beach are just some of the popular tourist activities on offer along the Maputaland coastline.

*Author: Judy Mann-Lang September 2000*

**FURTHER INFORMATION:** • Bruton, M.N. & Cooper, K.H. 1980. *Studies on the Ecology of Maputaland*. Wildlife Society Publication  
• Mountain, A. 1990. *Paradise under Pressure*. Southern Book Publishers, Johannesburg.  
• The KwaZulu-Natal Nature Conservation Service P.O. Box 13053, Cascades, Pietermaritzburg 3200. Tel: (0331) 8451999

**RELATED FACTSHEETS:** • Kosi Bay • Coral Reefs • St. Lucia • Marine Reserves • Coastal Forests • Rock Pools on our East Coast  
• Traditional Fishing Methods • Mussel Harvesting • Turtles • Crabs



## West Coast 1D

**T**he west coast is a hot, dry section of coast that stretches for 650 km from the mouth of the Orange/Gariep River at Alexander Bay, to Bokpunt on the outskirts of Cape Town. South of the Olifants River, sandy beaches predominate and the coast is indented by several bays, including Saldanha Bay – the only deep-water bay in South Africa. Further north the coast is much straighter and rocky shores comprise 70% of the coastline.

### A semi desert

Rainfall is low on the west coast. Less than 100 mm falls annually along the Namaqualand coast (between the Orange and Olifants rivers). Further south the average rainfall figure is somewhat higher – between 100 mm and 400 mm per annum – but the scarcity of fresh water remains a major obstacle to the development of the west coast. As a result the region is sparsely populated, with an estimated 55 000 people living in small coastal towns such as Lambert's Bay, Saldanha, Port Nolloth and Alexander Bay. The deep-water port of Saldanha forms the centre of the Vredenburg-Saldanha-Langebaan complex, the largest settlement on the west coast.

### Rich ocean life

Life on the west coast is intricately linked to the ocean. The icy waters of the Benguela Current flow northwards along

these shores and wind-induced “upwelling” leads to the high biological productivity of the coastal waters. Upwelling is an oceanic process that takes place when strong, southerly winds blow surface water offshore, allowing cold, nutrient-rich water from the depths of the ocean to take its place. The importance of upwelling to the west coast can be explained fairly simply: in the sea, most biological production takes place in the upper layers of water because phytoplankton – the microscopic plants that form the basis of the food chain in the ocean – need light in order to grow. The strong upwelling along the west coast creates ideal conditions for the growth of phytoplankton because nutrient-rich water is brought to the surface where there is abundant sunlight. The phytoplankton that thrives in upwelled water supports enormous numbers of animals, but only a few different species. For instance, the Cape fur seal colony at Kleinsee is believed to be one of the largest seal colonies in the world.

Given the vast numbers of marine plants and animals that thrive in the cold waters off the west coast, it is not surprising that this region is the centre of South Africa's fishing industry. In global terms, the South African fishing industry is small, contributing an estimated 0,5% to the country's Gross Domestic Product or GDP. But fishing is vitally important to the west coast; the region's economy is dominated by the highly industrialised hake, pilchard and rock lobster fisheries. Large stocks of west coast rock lobster (*Jasus lalandii*) not only provide seasonal employment for thousands of people, but they also attract tourists who visit the west coast to catch and enjoy this seafood delicacy.

*Known for its kelp forests, seals, gannets and penguins, the west coast is also an important fishing and diving area.*



## THE KELP COAST

Extensive kelp forests are a feature of the west coast. The large brown seaweeds that are known as kelp can grow up to 12 m tall and provide a protective canopy for other seaweeds and animals such as mussels, redbait, sea urchins and abalone. Beach cast kelp, which washes ashore after violent winter storms, also supports a fascinating array of life. Decaying kelp fronds attract bacteria that are in turn consumed by a variety of animals. Scavengers such as kelp flies and sand hoppers are preyed upon by plough snails while gulls and whitefronted plovers hover over the rotting piles or dart along the shoreline picking at the tiny creatures that live in the kelp.

## Spring flowers

Tourists are also captivated by another of the west coast's unique attractions – the annual blooming of spring flowers. After the winter rains the coastal landscape is flooded with colour as the wild flowers make their brief but spectacular annual display. Some of the flower species that grow along the west coast are so well adapted to the harsh, dry conditions of the region that they store large amounts of nutrients in their bulbs – so much so that if one removes the bulbs from the earth at an early flowering time, the flowers will continue to open for several months. Over 2 000 species of daisies and succulent vygies (mesembryanthemums) occur on the west coast. From this region come the geraniums (pelargoniums), sparaxis and freesias that are now grown all over the world.

Soil on the west coast is generally of a very poor quality and the potential for agriculture is limited. Perhaps as a result of there being limited opportunities for farming and industry, west coast folk have developed many unusual ways to make a living. For instance, mussels and oysters are farmed in the shelter of Saldanha Bay and the red seaweed, *Gracilaria*, is harvested along the west coast and exported to the Far East. A jelly called agar is extracted from the *Gracilaria* and used as a medium on which to culture fungi and bacteria for medical research.

## Diamonds

The northern town of Port Nolloth is the centre of South Africa's diamond-diving industry. Here diamonds are extracted from the ocean floor by divers who pull large suction pipes along the

rough seabed. Working in icy water, at depths of between three and 30 m, the divers suck up diamondiferous gravels which are later sorted in the hope of finding the precious stones. The origin of the west coast's alluvial diamonds is the Orange River. Volcanic activity and other continental upheavals once caused the Orange River to find its way to the coast along the present-day Buffels and Olifants river valleys. During this period in geological history, the sea level fluctuated widely and left the diamonds scattered between Sandwich Bay in Namibia and Doring Bay in the south, and from the marine sands 15 km inland to an equal distance out to sea. Today large sections of the west coast are inaccessible to the public because they have been tightly secured by the companies that mine alluvial diamonds in the region.

## Wetlands and Birdlife

Despite the shortage of water on the west coast, several important rivers and wetlands drain the region. Most notable are the Orange, Olifants and Berg Rivers and the wetlands of Verlorenvlei, Rocher Pan and Langebaan Lagoon. Verlorenvlei is an important breeding ground for thousands of birds. During summer the vlei's population is swelled tenfold by the arrival of migratory waders from the northern hemisphere: turnstones, whimbrels, curlews, godwits and greenshanks, to name but a few. Langebaan Lagoon is similarly attractive to avian migrants from Arctic breeding grounds, offering as it does vast mudflats that ooze with countless molluscs and crustaceans. The mud at Langebaan is said to contain some 60 million bacteria in every cubic centimetre and is recognised as one of the most biologically productive areas in the world. The lagoon forms part of the West Coast National Park, a paradise for bird-watchers, nature lovers and watersport enthusiasts.

Resident seabirds such as Cape Cormorants, Cape Gannets and African Penguins all breed in colonies on the islands off the west coast. These are Malgas, Schaapen and Jutten islands, which are managed by South African National Parks, as well as Dassen Island, protected by Cape Nature Conservation. These islands are all out-of-bounds to human visitors. Bird Island at Lambert's Bay has a special viewing platform and throngs of ecotourists visit to view the seabirds.

Author: Claire Attwood September 2000

### FURTHER INFORMATION:

- Reynierse, C. (Ed). 1988. *Illustrated Guide to the South African Coast*. Automobile Association. The Motorist Publications (Pty) Ltd.
- Schrauwen, J. 1991. *West Coast A Circle of Seasons in South Africa*. Struik Winchester, Cape Town.

### RELATED FACTSHEETS:

- Garden Route • Wild Coast • Dwebe and Cwebe Nature Reserves • Upwelling • Langebaan Lagoon • Fishing Industry • Orange/Gariep River Mouth • Kelp Forests.



# Garden Route 1D

**S**queezed between the sheer slopes of the fynbos-covered Outeniqua mountains and a gigantic coastal shelf that juts into the sea, South Africa's legendary Garden Route is a rain-soaked wonderland of lakes, estuaries, dense forest and hidden beaches. Little wonder that it ranks as one of the country's most valuable tourist attractions.

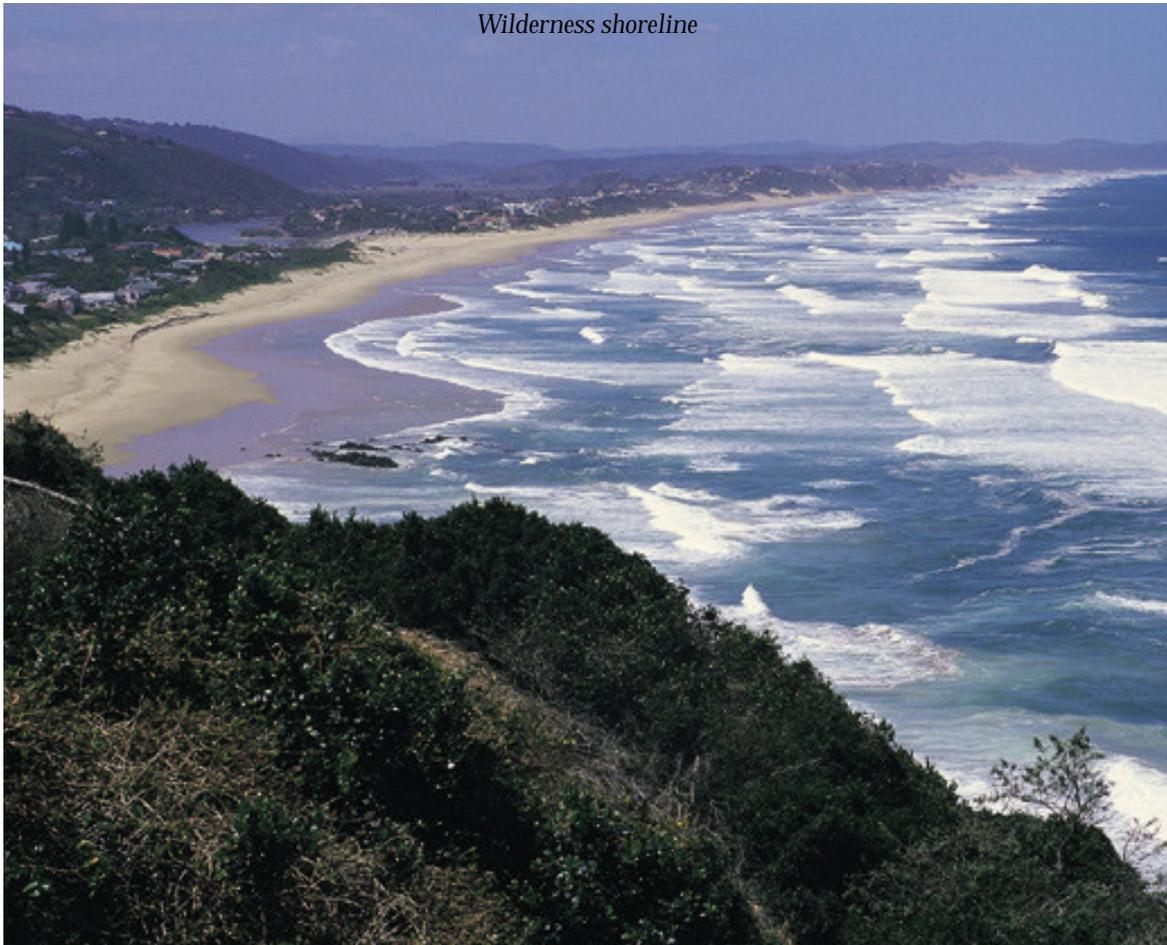
The Garden Route extends for 225 km, from the Gouritz River west of Mossel Bay, to the Blaauwkrantz River which marks the boundary between the Western and Eastern Cape provinces. The climate here is temperate and, although the Outeniquas bring year-round rainfall to the region, the wettest months are in spring and autumn. The coastal waters are warm, owing to the influence of the Agulhas Current, but average water temperatures of between 17°C and 23°C may be drastically reduced by the upwelling of cold water.

The coastal waters of the Garden Route are productive and support a diversity of plant, animal and bird life. Nowhere is this abundance of marine life better displayed than within the

Tsitsikamma National Park, the western-most portion which forms part of the Garden Route region. The waters of Tsitsikamma have been protected by a marine reserve since 1975 and the park's rich intertidal zone bears testimony to this protection. The marine reserve plays an important role in sustaining South Africa's squid fishing industry which is based in Plettenberg Bay. This is one of the country's newer commercial fisheries, having started in the early 1980s, when squid became sought after as the restaurant delicacy, calamari. The fishery is based on the chokka or long-finned squid, *Loligo vulgaris reynaudii*, which is caught by handline, using a lure called a jig. Catches fluctuate between 2 000 t and 10 000 t per annum and the Tsitsikamma Marine Reserve encompasses an important squid spawning ground, affording protection to the squid when they are at their most vulnerable.

The Garden Route coastline comprises 44% rocky headlands, 18% wave-cut platforms and 38% sandy beaches, as well as five major bays: Visbaai, Vleesbaai, Mossel Bay, Buffalo Bay and Plettenberg Bay. At Mossel Bay the water in the sheltered little cove known as Munro's Bay may be as calm and gentle as an inland lake, which might explain why Portuguese navigator, Bartholomew Dias, chose to come ashore here some 500

*Wilderness shoreline*



years ago. It is claimed that the gnarled old Milkwood tree which stands near the Mossel Bay Museum is the same tree where Pedro d'Ataide posted South Africa's first letter in 1500. The Portuguese sailor placed a message in a seaman's boot and hung it from the 'Post Office Tree' which grew next to a small spring. He knew that it would be spotted by any other seaman making a landing there.

Many rivers criss-cross the Garden Route region, emptying into the sea at Little Brak, Great Brak, Wilderness, Knysna and Plettenberg Bay. At the mouth of the Knysna River, a pair of huge cliffs known as the Knysna Heads, flank a deep channel through which sea water pours in to flood the wide and picturesque Knysna lagoon. The waters of this lagoon are a popular playground for boaters, fishers and even scuba divers. They are also used for farming Pacific oysters, *Crassostrea gigas*. These oysters are cultivated throughout the world, primarily because they grow to edible size in only two years. At Knysna, the oysters are cultivated in mesh bags that are suspended from wooden rafts. The tides that ebb and flow through the Knysna Heads provide the oysters with a regular and rich source of food.

Swartvlei is the largest of six lakes that are strung out across the Garden Route region. The Touws River lagoon at Wilderness, Island Lake (or Lower Langvlei), Langvlei, Rondevlei, Swartvlei and Groenvlei constitute the Wilderness Lakes system. The lakes have existed in their present form for about 2 000 years, and are the result of several million

years of sea level change. Each change in sea level built up a line of dunes along this stretch of coast and the lakes were formed by various low-lying areas of land being blocked from the sea by the dunes. Langvlei is simply an inundated area caught between the dunes and Swartvlei is a drowned river valley. Groenvlei once formed part of Swartvlei, but is now a freshwater environment.

Only a tiny portion of South Africa is covered by indigenous forest and much of this occurs within the Garden Route region. The forests of the Tsitsikamma region are particularly diverse, with between 50 and 60 different species of tree occurring in a typical one hectare patch of forest. The largest and best known of these trees is the Outeniqua yellowwood, *Podocarpus falcatus*, which can grow to a height of 60 m. The most valuable forest species is the stinkwood, *Ocotea bullata*, whose dark grained timber is highly prized by furniture manufacturers.

Tourism and holiday related development and services are a major economic activity in the Garden Route and the region's permanent population of approximately 225 000 swells dramatically at certain times of the year. The Garden Route's popularity as a holiday destination has led to rapid, and sometimes inappropriate, property development. The current lack of an integrated development strategy could lead to the degradation of the scenic beauty that is one of the cornerstones of the Garden Route's vital tourism industry.

*Author: Claire Attwood September 2000*

#### FURTHER INFORMATION:

- Reynierse, C. (Ed). 1988. Illustrated Guide to the South African Coast. Automobile Association. The Motorist Publications (Pty) Ltd.

#### RELATED FACTSHEETS:

- West Coast • Wild Coast • Wetlands • Coastal Forests • Development along the Coast • Population around the Coast
- Mining the Sea • Tourism along the Coast • Estuary Management



# Wild Coast 1D

**T**he Wild Coast is an isolated and largely rural region, extending 270 km from the Great Kei River in the south to the boundary with KwaZulu-Natal in the north. Early shipwreck survivors encountered such rugged conditions along these shores that they named the region, the Wild Coast. Hundreds of years later the coastline remains wild, untouched by the rapid development that has transformed much of South Africa's coastal zone.

Many impressive rivers that rise in the Drakensberg empty into the sea along the Wild Coast. In the southernmost parts of the region, where low hills, sprinkled with traditional huts, roll down to a forest-fringed shoreline, the rivers tend to be mature and characterised by wide floodplains. But in the rugged north, where young rivers find their path to the sea blocked by massive cliffs, many, like the Mfihlelo, simply leap over the rocky crags and plunge into the surf below.

Rainfall along the Wild Coast is high; approximately 1000 mm falls here annually, predominantly in spring and autumn. About half the coastline comprises indigenous coastal forest, large parts of which remain undescribed by botanists. In fact,

many forest species that were previously unknown to science have been discovered in places such as Umtamvuna and Mkambati. About 900 forest and grassland species from the Wild Coast region have been identified as having commercial, traditional or homeopathic value.

The Wild Coast has numerous estuaries, bays and headlands. Rocky shores predominate here, taking the form of smooth wave-cut platforms, jagged, uneven surfaces or precipitous cliffs that drop into the ocean. Small sandy bays and long stretches of open beach are also found along the Wild Coast, often near the mouths of large rivers like the Qora, Mbashe and the Kei. Two distinct types of estuaries occur on the Wild Coast. The smaller rivers which drain the coastal forest have a protected catchment which ensures that their waters are clean, with little siltation. But the larger and longer rivers are fast flowing and, owing to poor farming practices in their catchment areas, often carry large silt loads.

The coastal waters of the Wild Coast mark the transition between the temperate Cape and the subtropical waters of KwaZulu-Natal. As a result, a diverse array of fish and invertebrates occur here. The warm Agulhas current sweeps down the east coast of Africa and tropical fishes from the north move into Wild Coast waters, particularly during the summer months. The irregular, north-flowing counter-current brings with it fishes from the Cape. Most noteworthy are the

*Hole-in-the-Wall, Port St Johns*



sardines which pass the wild coast on their annual migration, bringing with them game fish, sharks and eager fishers.

Large mangrove communities occur at six estuaries on the Wild Coast and the mangrove forest at Kobonqaba, just north of the Kei River, is the southern-most mangrove community in Africa. Mangroves are the only trees that are adapted to grow in salty water. They have evolved special aerial roots, called pneumatophores, which rise out of the mud in order to provide oxygen during high tide. Three species of mangrove are found on the Wild Coast: the white mangrove *Avicennia marina*, red mangrove, *Rhizophora mucronata* and black mangrove *Bruguiera gymnorrhiza*.

Five marine and nature reserves cover almost twenty percent of the Wild Coast. The 3 500 ha Dwesa reserve comprises coastal forest, open grassland, winding rivers and a diverse coastline. On the northern banks of the Mbashe River is Dwesa's sister reserve, the 2 200 ha Cwebe conservation area. The Hluleka Nature Reserve takes its name from the river on which it is situated and the Mkambati reserve forms part of the popular Wild Coast hiking trail. Although currently administered as a reserve, Silaka has yet to be established in terms of law. Many of these forests are under the jurisdiction of the Department of Water Affairs and Forestry and the remaining coastal land falls under communal tribal tenure.

The inaccessibility of the Wild Coast has contributed to it remaining largely undeveloped. Only two towns in the region are served by a tar road and most economic activities take place some distance from the coast. Approximately one

million, predominantly isiXhosa speaking people, live in the nine magisterial districts of the Wild Coast. Small holiday resorts have been established at places like Trennerys, Mazeppa Bay, Hole in the Wall and Coffee Bay and about 8 000 people reside in the main coastal town of Port St John's.

The Wild Coast is dominated by rural subsistence activities and is largely under-developed due to limited economic opportunities and poor infrastructure. As a result, the region makes only a small contribution to the economy of the Eastern Cape Province. Poverty indices show that the people of the Wild Coast are among the most impoverished in South Africa. Many depend on the coast for their subsistence, with linefish and inter-tidal organisms providing an important source of protein for rural communities.

The scenic beauty of the Wild Coast, coupled with its rich cultural heritage, make this region ideal for the development of a strong tourism industry. In fact, tourism has been identified as one of the cornerstones of the proposed Wild Coast Spatial Development Initiative. But, the virtual collapse of local administration, the pollution of coastal waters and the environmental impacts of slash and burn farming practices are some of the major issues that will have to be tackled by this initiative. The challenge will be to bring about much needed investment and development that will benefit local communities and the region as a whole, without compromising the rich natural resource base.

Author: Claire Attwood September 2000



#### FURTHER INFORMATION:

- Reynierse, C. (Ed). 1988. Illustrated Guide to the South African Coast. Automobile Association. The Motorist Publications (Pty) Ltd.
- Butchart, D. 1989. A Guide to the Coast and Nature Reserves of Transkei. Published by the Wildlife and Environment Society of South Africa.

**RELATED FACTSHEETS:** • Dwesa and Cwebe Nature Reserves • Garden Route • West Coast • Mussel Harvesting • Sea Shells • Tourism along the Coast • Recreational Angling • Mangrove Swamps • Population around the Coast • Myths and Legends

