Ecosystem State of Rivers of the Overberg Region

The Overberg region is situated at the southern tip of Africa and stretches from the Palmiet River at Grabouw in the west to the Breede River near Bredasdorp in the east. This region has a rich variety of rivers from fast-fl owing, low salinity, acidic rivers in the west, to slower fl owing, more turbid and saline rivers on the Agulhas Plains that are associated with a number of inland water bodies and wetlands.

The main land-use in the west is the cultivation of cereals (wheat and barley) and canola. Other land-use in this area includes livestock farming (sheep, cattle and ostriches), commercial forestry (pine plantations) and irrigated agriculture (fruits), especially in the Palmiet and Breede river catchments. The fruit farms in the Elgin Valley are the largest exporter of peaches, especially in the Palmiet and Breede river catchments. The fruit farms in the Elgin Valley are the largest exporter of peaches, nectarines and apricots.

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ANDERLUND STREAM

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THE AGULHAS BIODIVERSITY INITIATIVE

The Agulhas Plain (700,000 ha) is the largest habitat of lowland Fynbos and Renosterveld located in the Cape Floristic Region. The vegetation of this area has a high irreplaceability and vulnerability status. This area is particularly unique for its significant amount of wetlands that occur, including Soutendeklein, the second largest lagoon system in South Africa. Two Ramsar sites, De Hoop Wetland on the South Coast and De Netel estuary on the H向外nezughe River, provide important feeding grounds for several rare and threatened bird species.

The Agulhas Biodiversity Initiative is a joint partnership between South African National Parks, Cape Nature and Fynbos and Flora International as part of the Cape Action Plan for People and the Environment. The initiative was designed to address the main threats to these lowland habitats and improve the livelihoods of local communities. The main components are:

- conservation management in the productive landscape of the Agulhas Plain;
- sustainable harvesting of wildlife;
- development and implementation of nature-based tourism activities; and
- support actions for biodiversity conservation on the Agulhas Plains through a public awareness programme.

WHAT IS RIVER HEALTH?

River health provides goods and services (water supply, recreation, natural products, flood attenuation, natural resources, spiritual rituals) that are linked to healthy rivers. Healthy rivers provide goods and services (water supply, breakdown of pollutants, habitat for species, recreation, spiritual rituals) that are linked to healthy rivers.

River Health Categories

River Health Category | Ecological Perspective | Management Perspective
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Healthy | Healthy rivers provide goods and services (water supply, recreation, natural products, flood attenuation, natural resources, spiritual rituals) that are linked to healthy rivers. | Healthy river health provides goods and services (water supply, recreation, natural products, flood attenuation, natural resources, spiritual rituals) that are linked to healthy rivers.
Poor | Poor river health provides goods and services (water supply, recreation, natural products, flood attenuation, natural resources, spiritual rituals) that are linked to healthy rivers. | Poor river health provides goods and services (water supply, recreation, natural products, flood attenuation, natural resources, spiritual rituals) that are linked to healthy rivers.

Overall State of the Overberg Rivers

The rivers of the Overberg Region are generally in a fair ecological state, with only the upper reaches remaining in a good or natural state. Where good farming practices are not followed and where urban areas occur, the health of the rivers deteriorate into a poor state. Large livestock dams, particularly in the Palmiet River, have altered flow, while the excessive use of fertilizers has led to eutrophication and substantial modification in the river reaches (e.g. Sout River).

Reaches of rivers draining the Agulhas Plains, such as the upper Klip River, are impacted by alien vegetation (past, palm and river grass) that increase sediment load and decrease water quality. Areas with dense alien vegetation suffer from eutrophication and reduced oxygen levels, which negatively affect water quality and aquatic life. Alien species that occur in the Klip River include the banana plant (Musa sp.), which is a significant threat to the Klip River ecosystem.

Alien species infestation

Most of the rivers have been invaded by alien vegetation with the exception of the upper reaches of the Hermanus River and the upper reaches of the Porcupine River, which occur within protected areas. Reaches of the Klip River have also been protected from alien plant invasion where fences along the river have provided a buffer from livestock and farming disturbance.

One or more alien fish species (e.g. moonfish and spotted bass, bighead carp, rainbow trout, mosquito fish, tilapia and carp) were present at most sites surveyed. These species compete with the indigenous Cape galaxias, Cape karper and Houtman stoep minnow for food and habitat, or prey on them.

Natural Channel Impacts

Flood events during 2005 severely modified river channels, particularly altering the aquatic habitats of rivers in the eastern Overberg (substrates of the Newlands River). The dense growth of alien trees at most sites exacerbated the impact of the floods on the river channel and resulted in extensive scouring of the channel.

MAJOR IMPACTS

River Channel and Riverbank Modification

Flood protection measures and construction within the river channels have modified riverbanks (straightened channels and levees). This has resulted in habitat loss and change to the riparian zone and reduced aquatic species diversity.

Instream dams and water abstraction have modified river flows and altered downstream channel morphology. The attenuation of small floods by instream dams has dramatically reduced the impact on downstream reaches of the Sout River. The removal of upstream reservoirs reduces the availability of water, resulting in reduced water flows and altered downstream reaches.

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Management Actions

- Remove alien vegetation from the riparian zone and wetland areas. Snagging alien vegetation followed by follow-up operations.
- Re-establish these riparian zones with indigenous vegetation.
- Create a 30 metre buffer zone between agricultural lands and rivers.
- Ensure that environmental flow releases are made from dams.
- Introduce Fishing operations to reduce alien species to water bodies.
- Crack down on alien fish from highly sensitive river reaches.
- Restore the riverine ecosystems of alien fish from dams.
- Maintain the upper Klip and Newlands rivers sanitary areas for the indigenous, non-alien riverine species.
- Identify priorities for conservation of biodiversity within these rivers.

Indigenous Fish of the Overberg Region

Indigenous fish are found in the Overberg River. Cape galaxias, Cape karper and the ungyrocoptes proregulus (braccosoma) have been identified. Cape galaxias, Cape karper and Cape mesoeleus were common in the lower Heuningnes River. Cape mesoeleus were found at some lower sites, where instream dams and water bridges did not prevent the migration of estuarine fish.

The indigenous fish were impacted mostly by alien fish as good habitat availability is critical for these species, except where the floods in 2005 had caused major habitat changes.