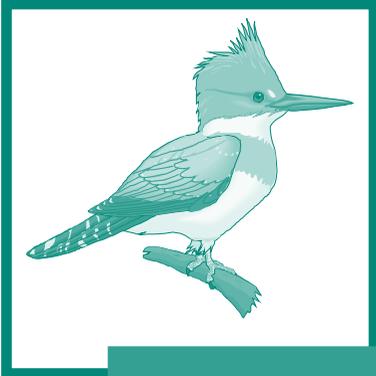
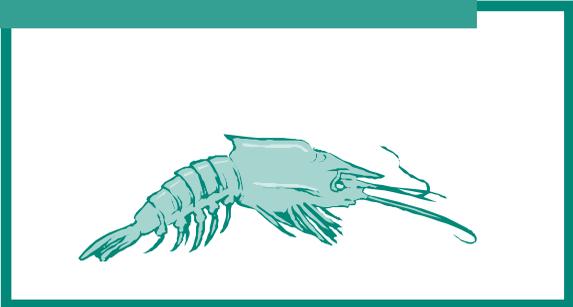
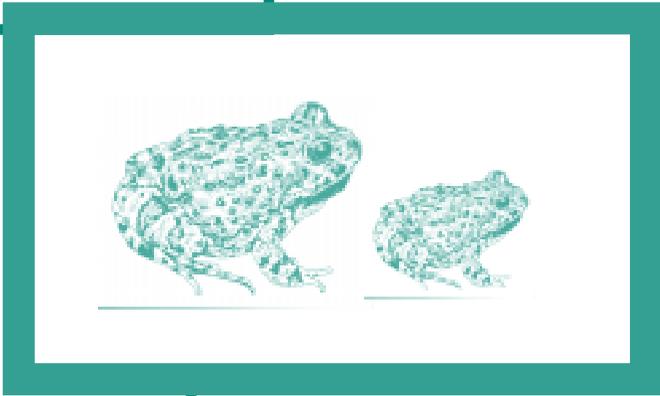




DEPARTMENT: AGRICULTURE



Wetland values and functions



*"Looking after our land so that our land can
look after us"*

2002

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Let us work together to ensure that
the ecological and socio-economic functions
of wetlands are sustained, now and in the future

Wetland values and functions

Wetlands range from springs, seeps, mires and bogs in the mountains, to midland marches and flood plains, to coastal lakes, mangrove swamps and estuaries. All wetlands are linked by rivers.

Water purification



- Plants and soils in wetlands play a significant role in purifying water.
- Many nutrients such as phosphorus and nitrogen, which are usually associated with agricultural runoff, are removed effectively by wetlands.
- High concentrations of these nutrients are therefore prevented from reaching groundwater supplies or other watersources that may be utilised for drinking purposes.
- Many wetland plants have the capacity to remove toxic substances such as pesticide residue, industrial effluent and seepage from mining activities.



Climate-change mitigation



- Wetlands protect coastal and inland areas against the effects of climatic changes such as increasing frequency of storms, changing rainfall patterns, rising sea levels and sea-surface temperatures.
- Wetlands have been identified as significant storehouses of carbon. Peatlands, such as those found in the Rietvlei Nature Reserve near Pretoria, are estimated to store more than 25 % of the soil carbon pool even though these areas cover only about 3 % of the world's total land area.
- Drainage, conversion of land to agricultural use and degradation of wetlands will release large quantities of carbon dioxide as well as other greenhouse gases contributing to global warming.

Sediment and nutrient retention and export

Wetlands tend to slow down the force of water, promoting the deposition of sediments carried in the water. This results in the blocking of waterways.

Nutrients such as phosphorus and nitrogen can, however, be deposited at the same time. These nutrients, which can come from agricultural sources, human waste or industrial effluent, may accumulate in the subsoil, be transformed



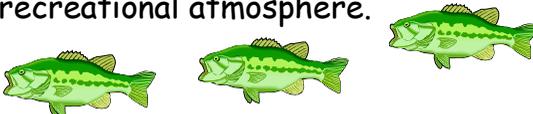
by chemical and biological processes or taken up by wetland vegetation which can then be harvested and removed effectively from the system.

Flood control

- Wetlands often play a crucial role in flood control. However, loss of floodplains to agriculture and human habitation has reduced this capacity.
- The construction of levees and dams on rivers to improve flood control has often had the reverse effect.
- Flood-plain restoration and the removal of impeding structures partly solved the problem in many countries.

Recreation and tourism

- The natural beauty of wetlands and its diversity of animal and plant life make them popular tourist attractions. Many of the finest sites are protected as National Parks or World Heritage Sites.
- Recreational uses such as fishing, hunting and boating, involve millions of people who spend billions of rands on these activities.
- Wetland areas are also ideal locations for involving the general public and schoolchildren in hands-on learning experiences and to raise awareness of environmental issues in an essentially recreational atmosphere.

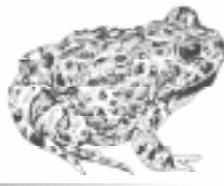


Cultural value

Although largely an unexplored, poorly-documented subject, wetlands are frequently of religious, historical, archaeological or other cultural significance at local or national level. For example, Lake Fundudzi in the Northern Province is of cultural significance to the Tshiavha clan as a place of worship and they believe that spirits of their ancestors inhabit the depths of the lake.

Reservoirs of biodiversity

- Freshwater wetlands contain more than 40 % of the world's plant species and 12 % of all animal species.
- Some wetlands contain significant numbers of endemic species.
- Coral reefs rival tropical rainforests in terms of biodiversity; they may contain up to 25 % of all marine species. Reefs hold an estimated 4 000 species of fish and 800 species of reef-building corals. The total number of species associated with reefs may be more than a million.
- Wetland biodiversity is a significant reservoir of genes that have a considerable economic potential in the pharmaceutical industry and in the production of commercial crop plants such as rice.



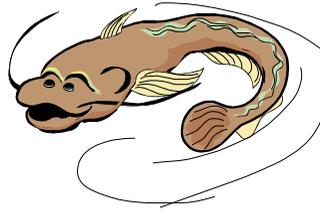
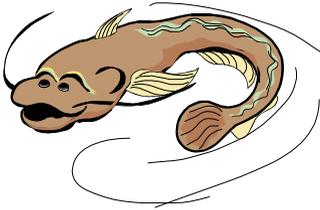
Shoreline stabilisation and storm protection

Coastal wetlands play a critical role in many parts of the world in protecting the land from storm surges and other weather events. They reduce wind, wave and current action. Coastal vegetation helps to hold sediment in place.



Wetland products

The list of products from wetlands exploited by humans is immense. This occurs at all levels, from a commercial scale to cottage industries and subsistence level. Fish species, shrimp, and other marine animals are dependent on coastal wetlands for at least part of their life cycle. Rice, a wetland plant, forms the staple diet of 3 billion people.



Contact numbers

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Free State	(051) 861 1382	(051) 861 2369
Northern Cape	(049) 842 1113	(049) 842 2769
Western Cape	(021) 808 5010	(021) 808 5000
Limpopo	(015) 291 3980	(015) 729 7028
Mpumalanga	(017) 819 2076	(017) 819 2072
North West	(053) 917 1809	(053) 917 2436
Gauteng	(011) 355 1900	(011) 333 0667
KwaZulu-Natal	(033) 355 9339	(033) 355 9330
Eastern Cape	(043) 683 1240	(043) 683 2890

For further information about rehabilitating
and managing methods, contact your local
agricultural extension officer
or
National Landcare Secretariat,
Private Bag X120, Pretoria

Tel (012) 319 7685 Fax (012) 329 5938

Web <http://www.nda.agric.za/docs/landcarepage/landcare.htm>

or

Resource Centre, Tel. (012) 319 7141/7085

