Clearing water-thirsty alien plants

Biodiversity as a Resource for Delivering Water

South Africa has a wealth of natural resources that are key to our development as a nation. Our natural resources include our minerals, our soil, our water and our biodiversity — for example, fish stocks, medicinal plants and game. Natural resources are a form of capital, like infrastructure, land, labour or finance — we can see them as “natural capital”. As a nation, we need to invest in maintaining, restoring and building our natural capital — so that it can help support socio-economic development for all our people. Investing in looking after our biodiversity is a way of ensuring that it works for us, to fulfil our goals of:

- Creating work and sustainable livelihoods
- Achieving rural development, food security and land reform
- Delivering water for the nation’s needs
- Providing protection against climate change
- Creating a “quick fix”! No. Alien clearing is a complex process that needs to be carried out over many years (usually 5–10 years), and the land needs to be managed over a long period of time, and is continuous, not a “quick fix”. The success of alien clearing depends on the variety of methods used, including the use of biological control, the use of chemicals, and the follow-up. Clearing alien vegetation makes less water is taken up by indigenous plants along the banks than by the thirsty alien plants. In South Africa biocontrol is always practised in terms of strict safety protocols, and has been very effective in terms of reducing the area of certain alien noxious weeds a few kilometres through the use of the gall wasp making mechanical clearing water-wise and cheaper. Economies estimate that without biocontrol the country would have lost R48.2 billion per annum in terms of the services provided by ecosystems such as water, grazing and animal husbandry.

What does an alien clearing “quick fix” mean?

What is biocontrol of aliens?

Biological control or “biocontrol” is the use of living agents such as insects or fungus to slow down the growth of alien plants — usually by reducing the number of seed or destroying the parts of the plant. Biocontrol is often used together with mechanical clearing and the use of chemicals.

How does Alien Clearing Increase Water Supply?

Working for Water was established in 1995, using labour-intensive mechanical and chemical methods to remove alien plants from mountain catchments and river corridors. The programme creates temporary jobs and provides training to unemployed people, while also restoring the productivity of the land and the natural functioning of these ecosystems — the way that without biocontrol, the country would have lost R48.2 billion per annum in terms of the services provided by ecosystems such as water, grazing and animal husbandry.

A How does alien clearing increase water supply?

Clearing alien plants from river corridors increases the size of the rivers (and the water available in rivers) that can move along underground aquifers into rivers, lakes and wetlands or become available for irrigation using boreholes. Alien clearing is one part of government’s plan to increase water supply, which also includes managing demand and expanding infrastructure. How do alien plants affect rivers?

Clearly, alien plants are too water thirsty to do any good in natural ecosystems, so most governments would get rid of them. Nationally it is estimated the alien plants consume 3 300 million m3 of our precious water resources each year — the equivalent of 7% of the total natural river flow countrywide, or 26 large dams!

Clearing firebreaks prevents large fires that get out of control and threaten life and property. Alien vegetation often has a higher oil content and burns hotter and faster than indigenous vegetation. These fires leave very little behind, causing soil erosion when the rains come. Many alien plant seeds germinate after fires, causing erosion to spread faster than before and cost more to deal. Following fires over 40 000 ha in 2006 in the Western Cape, CapeNature estimated these additional costs at R17.5 million. If 95 000 ha infested with aliens burns in unplanned fires each year in South Africa, the additional cost to control these infestations would be R140 million annually.

What is Working for Water?

Working for Water is a series of books that answer Frequently Asked Questions about water-consuming alien vegetation and how it can be managed to maximise the amount of water available for people and ecosystems — the way that without biocontrol, the country would have lost R48.2 billion per annum in terms of the services provided by ecosystems such as water, grazing and animal husbandry.

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This series was developed for the Cape Action for People and the Environment (C.A.P.E.) partnership programme, with support from the South African National Biodiversity Institute (SANBI), the Wilderness Foundation and the Critical Ecosystem Partnership Fund.
Increasing water supply for development

South Africa is a water-scarce country and the supply of fresh water is a major constraint to future development, with demands likely to outstrip supplies by 2025. The country becomes warmer, and the western part becomes drier, with more sudden downpours, causing much of the rainwater to run off without being captured, and which can lead to drought or flooding.

Scientists predict that the climate change will worsen this situation, as the interior of the country becomes warmer and the western part becomes drier, with more intense and frequent fires. Rainfall patterns are expected to become less regular – with more sudden downpours, causing much of the rainwater to run off without being captured, and which can lead to drought or flooding.

To maximise the amount of water available and in quality, government has committed itself to managing river catchments in an effective and integrated way. Catchment Management Agencies and Water User Associations are being established to involve all role-players in this process, including emerging and commercial farmers, the Department of Water Affairs, the national and provincial Departments of Agriculture and the provincial conservation authorities. Two important aspects of catchment management are managing fires and clearing alien vegetation.

Working for Water

The phrase “Working for Water” is a Khoisan word meaning “place of much water.” The Tsitsikamma Area of the Garden Route National Park incorporates 80km of rocky coastline with coastal fynbos and spectacular sea landscapes, a remote mountainous region with secluded valleys covered in mountain fynbos and Afro- montane Forest, with deep river gorges leading down to the sea. The park also has a wide variety of bird, fish and other animals.

Working for Water in the Tsitsikamma Area

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