managing watersheds wisely
Watersheds or catchment areas provide land use planners and decision-makers with a very useful ecological unit within which to manage land and water use, fire, invasive alien species, pollution and estuary function in an integrated manner. The C.A.P.E. Programme identified watershed management as a key component of the Strategy and supports efforts to integrate the diverse aspects of catchment management. For instance, C.A.P.E. Partners are actively involved in the establishment of Catchment Management Agencies, which are due to start taking over responsibility for the management of the five major catchment areas in the Cape Floristic Region.

With the recognition that large stands of woody alien plants significantly reduce the amount of water reaching streams, increase the severity of veld fires and pose a threat to biodiversity, the government stepped in and created poverty relief programmes such as Working for Water and Working on Fire. These programmes provide tens of thousands of unemployed people across the region with temporary employment and skills development opportunities. Volunteer groups have also made a significant contribution to the eradication of invasive alien plants on both private and public land. This chapter acknowledges the huge contribution the “fynmense” of the Cape have made in addressing this huge and multi-faceted threat.

CHAPTER 3

Managing watersheds wisely

3.1 Caring for rivers and wetlands

(i) Working for Wetlands

One of the strengths of the Working for Wetlands programme in the Cape Floristic Region (CFR) is its focus on trying to restore some of the natural functioning of river and wetland ecosystems, even within highly transformed urban environments. Whether projects have been initiated to address storm water management problems, blooms of toxic blue-green algae or general environmental degradation, the solution has been to restore habitats to a more natural state. Actual rehabilitation has included earthworks, removal of invasive species and reintroduction of locally indigenous plants. A variety of innovative job creation opportunities have been explored, from supplying a commercial paper manufacturer with cut Phragmites reeds, to the development of nurseries to supply the plants needed for rehabilitation projects.

Wildevoëlvlei—working for a healthy environment

One of the early Working for Wetlands projects was initiated in response to an outbreak of toxic blue-green algae in the Wildevoëlvlei Wetlands at Noordhoek. For some reason, the pond weed that normally grows in these wetlands died off and was no longer able to remove nutrients from the water. Toxic blue-green algae bloomed in response to the rise in nutrient levels, turning the wetland into a health hazard for people and animals.

Poverty relief funding from the Department of Environmental Affairs and Tourism enabled the City of Cape Town, SANParks, the Ukuvuka Campaign and WESSA Western Cape to undertake a massive project to clear invasive alien plants and make a start with the restoration of the wetlands. To address the blue-green algae problem, Working for Wetlands appointed teams to build “mesocosmes”, floating corral-like structures in which they could start poisoning the algae and reintroducing indigenous pond weed. Workers also removed swathes of Phragmites reeds and planted a variety of indigenous wetland plants to try to re-establish a more diverse plant community.
About 600 people from Masiphumelele township benefited from short-term employment and skills development opportunities. The Noordhoek Valley Training Centre, a campus of False Bay College, played a key role in supporting the skills development aspects of this project, from sewing skills needed to construct the mesocosms, to basket-making with the cut reeds. FebDev provided business skills development for emerging contractors. A number of these contractors have since started their own businesses and Working for Wetlands project manager Mandy Noffke continues to involve them where possible in a range of different jobs so that they can continue to learn different skills, from alien clearing and plant propagation to planting and maintenance of rehabilitation sites.

**Offering urban rivers a helping hand**

The City of Cape Town manages most of the river and wetland sites where Working for Wetlands Peninsula Project is operating. With its strong commitment to integrated environmental management, the City’s conservation officers are in the forefront of rehabilitation efforts, especially at wetland reserves like Rondevlei, Rietvlei and Zandvlei. By working closely with Working for Wetlands, the engineers are starting to view urban rivers as more than just canals for stormwater. They are helping to reshape river courses, excavate gently sloping river banks, and construct islands to create more diverse habitats. Working for Wetlands can then replant natural wetland vegetation, which helps to stabilise the banks and restore biodiversity. One of the ongoing challenges, however, is to ensure that City employees at all levels learn to manage these river and wetland corridors sustainably. The destruction of Red Data species by mowing teams, and damage to newly reshaped river banks by dredgers are unnecessary steps backward in an otherwise positive story of environmental improvement.

In the South Peninsula, Working for Wetlands has been assisting volunteer groups, a business partnership and nature conservation agencies with a number of restoration projects in the Sand River catchment. A vision is emerging of a “source to sea” rehabilitation and management programme incorporating existing initiatives in Tokai Forest and Die Oog (Chapter 2.3), the Keyser’s River in Retreat, and Zandvlei. These projects have been improving not only the ecological functioning of these systems but also their aesthetic, recreational and educational value. Two full-time river wardens are now employed by businesses along the Keyser’s River to improve and maintain this section of river. Access and safety have also been improved with the construction of pathways and lighting along a section of the Sand River.

**A network of nurseries**

Working for Wetlands in Cape Town is helping to rehabilitate urban wetlands and rivers, some of which have been so severely degraded by urbanisation that they can no longer regenerate naturally. Teams reintroduce lost plant species, creating “islands of diversity” in the seas of kikuyu grass and *Phragmites* or *Typha* reeds that fringe these depleted systems.

Pristine river environments in the Cape Floristic Region are characterised by a lack of alien vegetation along their banks and an absence of invasive alien fish in their waters.
A Story of New Beginnings

For two years, Richard Erskine was a supervisor with the Working for Water team responsible for clearing invasive alien plants, building rubble and other rubbish from the newly established Edith Stephens Wetland Park in Lansdowne Road. The pay wasn’t much but it was better than sitting at home in Manenberg where he had been since his previous employer had died, leaving him without his gardening job of 35 years.

When Working for Wetlands established a small nursery at Edith Stephens, Richard jumped at the opportunity to start growing plants again and became part of the nursery team. A horticulturist provided some training and supervision but it soon became clear that all three nurseries needed a manager. Recognising his skills and experience, Working for Wetlands offered Richard the contract in 2004; that was the start of Richard’s business, “New Beginnings”.

“I feel great because I’ve been part of this project from day one,” says Richard. He is proud of the 20 certificates he was awarded during his time with Working for Water; among other things he is now a qualified health and safety officer, fire fighter, herbicide applicator and supervisor. This training, coupled with his gardening and supervisory experience, enables Richard to manage the nurseries confidently and to share his knowledge of propagation with the many people who now come to him for advice. And what of his hopes for the future? “We need to restore the whole of the Cape Peninsula to its former glory.” Richard and his nursery teams are doing their best to make this dream a reality.

Richard Erskine (right) previously supervised the Working for Water team that rehabilitated Edith Stephens Wetland Park. He now manages three Working for Wetlands nurseries in the City of Cape Town.

What have we learned?

- The technical aspects of poverty relief projects are relatively straightforward; it is the social aspects that are the most complex. Local politics can complicate the appointment of workers and extensive planning and adequate lead times are essential to avoid costly mistakes and delays.
- Levels of innovation and problem-solving among trainees are generally low; adequate on-site supervision is therefore essential.
- Poverty relief funding is just what it says—poverty relief; it is an attempt to provide temporary assistance and training opportunities for unemployed people who have few marketable skills and very poor prospects of employment. Because the daily wage is so low (approximately R40 per day), poverty relief projects suffer from a high turnover of workers. As soon as better opportunities turn up, people understandably move on.
When different organisations operating within the same geographical area offer differing rates of pay for poverty relief projects, this causes endless problems for managers and contributes to the closing down of some projects and competition between others. A standardised system would alleviate some of these social issues.

Working for Wetlands started off as a sister programme to Working for Water and was managed by DWAF, which focuses mainly on water conservation issues. The programme has since been taken over by SANBI, which has a biodiversity conservation mandate. This has served to strengthen the ecological restoration focus of Working for Wetlands.

(ii) The River Health Programme

“Water is Life!” We all know the slogan; but take a look at our streams and rivers and you have to ask why, in this water-scarce country, we seem intent on killing the very systems that are society’s life-line.

Cape Town’s polluted urban rivers feature periodically on prime-time TV news, with graphic pictures of festering canals, choked with rubbish, that are really no more than open sewers. Unaware that their health is at risk, children play in rivers where concentrations of faecal bacteria exceed international health and safety standards. Ironically, as we degrade river systems through over-abstraction of water, insensitive development, pollution and invasive alien plants and animals, these rivers become less and less able to satisfy our needs. They also become increasingly expensive to rehabilitate.

Looking after the quality and availability of South Africa’s fresh water resources is such a priority to government that in 1994, the year of the country’s first democratic elections, the River Health Programme (RHP) was established to monitor, assess and report on the health of rivers. The Department of Water Affairs and Forestry (DWAF) runs this national programme, in collaboration with the Department of Environmental Affairs and Tourism (DEAT) and the Water Research Commission (WRC).

Ongoing river monitoring

There is no shortage of ad hoc river monitoring projects in South Africa, but the RHP is significant because it provides a set of protocols and procedures that any organisation in the country can use. This enables diverse organisations to participate in an ongoing, systematic national monitoring programme and to contribute useful information to a growing database.

RHP researchers observe land uses in the catchment and assess the current ecological health of a site by surveying a range of indicators. They record their findings using a simple rating system (natural, unless rivers and streams are well cared for, they become unhealthy and pose a health risk.

What is river health?

A healthy river is one in which ecological conditions are as close as possible to their natural state. The river environment is undamaged, the water is clean, and indigenous plant and animal populations are present.

Unless rivers and streams are well cared for, they become unhealthy and pose a health risk.

Provincial champion Toni Belcher has managed the River Health Programme that has effectively mobilised a whole range of partner organisations for implementation.

There is a dramatic difference between rivers that are infested with aliens and those where clearing has been effective.

people making biodiversity work
The RHP in the Western Cape has produced several SoR reports on rivers in the province. Most recently, an SoR report was commissioned for greater Cape Town because of concerns about the impact on rivers of rapid urbanisation and ageing infrastructure. The report identified some horror stories as well as some reasons for hope. Water quality in the Kuils River, for example, can only be described as disgusting: six sewage works discharge treated wastewater into this river and its entire catchment, from source to mouth, is urbanised. The Sand River system, on the other hand, has great potential; although water quality varies greatly along its length, it could be rehabilitated and managed as an urban greenbelt.

The RHP presents its findings in the form of attractive, user-friendly State of Rivers (SoR) reports and posters that focus on particular catchments or regions. Designed to inform politicians, managers and residents, these reports describe the current situation, identify factors impacting on the river, predict trends in the condition of the river, and suggest what can be done to manage the catchment better.

The information gathered by the RHP is widely used, notably by environmental planners and officials responsible for managing freshwater resources, and by C.A.P.E. partners involved in fine-scale conservation planning. However, Toni Belcher believes that this information also needs to inspire and enable citizen action at a local level.

What have we learned?

- In the Western Cape the RHP team works well because it is adequately resourced and very well managed by DWAF and the provincial RHP champion.
- By providing a standard set of protocols and procedures, the RHP is able to involve a large number of organisations in a nation-wide monitoring project.
- Using photographs, simple graphics and a qualitative rating scale makes the RHP findings accessible to a wide range of users.
- Each and every one of us both impacts on and benefits from rivers, so it is everyone’s responsibility to look after rivers. Information provided by the RHP helps us to do this monitoring project.
(iii) Western Cape Wetlands Forum

The Western Cape Wetlands Forum (WCWF) is a multi-stakeholder body that provides opportunities for the “... sharing of information and expertise regarding the protection, management and restoration of wetlands in the Western Cape Province”. It was initiated by the Working for Wetlands Programme, which needed informed guidance in its poverty alleviation projects, and has since grown to include a range of agencies and interest groups. The Forum aligns itself fully with the mission and vision of C.A.P.E., and is committed to providing appropriate input to C.A.P.E.’s task teams that deal with wetland issues.

The Forum is currently housed by SANBI’s Urban Conservation Programme based at Kirstenbosch. Via its membership, it can provide information, advice and networking opportunities with regard to Western Cape wetlands. This service is of particular value to consultants involved in environmental impact assessments that involve wetlands.

Anyone who shares a vision for the environmentally responsible management of wetlands, from individuals living near wetlands, to civil society organisations and government agencies, is welcome to join the Forum. An offshoot of this Forum has recently been established in the southern Cape.

(iv) Catchment Management Agencies—a new model for water management

What are CMAs?

The Department of Water Affairs and Forestry is currently both manager and arbiter of South Africa’s water resources. In an effort to separate these functions, the National Water Act (No. 36, 1998) provides for the establishment of Catchment Management Agencies (CMAs) that will take over responsibility for water resource management in South Africa, resulting in a leaner national department that will be responsible for policy development and oversight rather than implementation.

CMAs in the CFR

Five CMAs will be developed in the CFR:
- Breede River / Overberg
- Gouritz
- Olifants / Doring
- Berg (including Cape Town)
- Fish / Tsitsikamma

These CMAs should all have been established by 2009.

The 19 CMAs correspond to major catchment areas and their governing boards will comprise representatives of water user groups and interested parties in the catchment, including agriculture, industry, local government and environmental groups. Each CMA will develop a catchment management strategy and appoint staff to carry out its functions. Responsibilities will include water use control, licence allocations (e.g. afforestation, irrigation) and environmental management (e.g. aquatic requirements of water resources, pollution control, eradication of invasive alien organisms). Revenue to fund the CMAs will come from the water resource management charge that all water users currently pay to DWAF. Water users within a catchment will fund the functions of their CMA. Projects for the control of invasive alien plants (the Working for Water programme) will be co-funded by the CMA in addition to poverty relief funding from national government.

The River Health Programme has resulted in State-of-Rivers reports of all important catchment areas in the CFR.
The governing board of the first CMA is already appointed in the Inkomati water management area in Mpumalanga. The Breede-Overberg CMA in the Western Cape is already established and the governing board will be appointed in 2006. This is one of five CMAs in the CFR. Two of the others, the Gouritz CMA and the Olifants-Doring CMA, will be established by the latter half of 2006.

**CMAs and C.A.P.E.—partnerships for biodiversity**

DWAF is an active C.A.P.E. partner. Through involvement in a number of C.A.P.E. task teams, the department has become increasingly conscious of the relationship between its mandate to manage South Africa’s water resources, forests and plantations, and the need to conserve biodiversity. Due to the influence of C.A.P.E., biodiversity concerns will figure prominently in the strategies developed by CMAs in the CFR.

Willie Enright, Deputy Regional Director at DWAF, notes that the wealth of fine-scale biodiversity information available through C.A.P.E. will enable the CMAs to make more informed decisions about resource allocation and help them to plan proactively. For example, fine-scale biodiversity plans show where the threatened habitats are in a catchment; using these, the CMA can ensure that forestry and irrigation permits are not issued in areas where the biodiversity is under threat. Information on the water requirements of river ecosystems will enable CMAs to regulate the discharge of water from dams. Maps showing the distribution of invasive alien plants in the catchment and the critical biodiversity areas will enable Working for Water funding to be allocated more strategically.

Being a partner in the broader C.A.P.E. programme has enabled DWAF to identify priority areas for conservation action in the region. As CMAs are established to manage South Africa’s water resources, those in the CFR will be developing catchment management strategies with the assistance of C.A.P.E. that promote biodiversity conservation, setting a precedent that will inform CMAs elsewhere in the country.

Wille Enright has contributed consistently to the development of the Watersheds component of the C.A.P.E. programme.

Five Catchment Management Agencies will be established to manage water resources within the CFR. A close relationship between C.A.P.E. and these CMAs will strengthen biodiversity conservation in catchments.
(v) The Knysna Rastafarian Community Trail

“The river is life. But there is a problem—the river is polluted.” This is how residents of Rasta Square in Bongani Township in Knysna described the situation when they approached SANParks for advice on how to rehabilitate their local catchment. Fouled by seepage from pit latrines, choked by car wrecks and alien vegetation, the stream was by no means an asset to the community. The municipal cleansing department had lost interest in spending money on cleaning up the area, as the community had not supported previous attempts. Each time, within a few weeks, the valley looked like it had never been cleaned. But this time it was different; members of the community had taken the initiative and, what’s more, they weren’t asking for physical or material help, but only advice.

Inspired by the fact that they live in the heart of a National Park, this group of Rastafarians was convinced that they could develop sustainable livelihoods through rehabilitating their valley. Rather than launching into a once-off clean-up campaign, SANParks provided training in a variety of skills like path building and erosion control, and helped the group to develop their own business plan describing what they wanted to achieve. The plan unlocked funding and support from the municipality, which helped with the removal of the vehicle wrecks.

Having cleared the area of rubbish and alien plants, the task team decided to develop a footpath so that local residents and visitors could enjoy the area. They negotiated with municipal councillors, secured funding and invited people from the neighbourhood to apply for contracts. Managed by the task team, the people of the valley built their own trail, including an entrance, pine bridges and boardwalks. Elroy Block, one of the task team members, now takes tourists on guided trails, which provide insights into the Rastafarian way of life. The success of this phase of the project has attracted further funding: R500 000 has been provided to continue with rehabilitation of the area and to develop a multi-purpose community centre to serve as a meeting place, information centre and project hub.

The values and beliefs of the Rastafarian community have been the inspiration for this project. The task team has been motivated by its desire to rehabilitate the natural environment and to restore the dignity of people. Through the project they have explored what the term “sustainability” means to their community in practical terms. They have found that sharing a vision for the project, taking initiative, remaining committed and building on their successes have enabled the project to take root and flourish. Instead of waiting for others to do things for them, the task team has restored their river valley and created job opportunities for their community. And this has resulted in the most important outcome of the project: instilling pride in the community.

What have we learned?

- If a group wants to get something done, the members must share a vision of their ultimate goal—and stick to that vision.
- People have different views and expectations, so it is important to look for common ground when working on community projects.
- Money can create problems—whether you have no money, some money or plenty of money! Start with a vision, develop your plan and use the money as you have planned.
- Co-ordinating a project is like driving a bus—to keep going in your chosen direction you need one bus driver. When things are going well, other people will want to take over the driving!
- Don’t waste opportunities or wait for conditions to improve before you act. Recognise that this is the time and work with what you have now.
- Planning and doing are two different things. People need appropriate capacity-building opportunities if projects are to become sustainable. This should include both practical skills (e.g. path building) and administrative skills (e.g. budgeting).
- Nobody can control the flow of time. To be sustainable, a project needs to develop at its own pace and in its own time.

Elroy Block, one of the speakers at the C.A.P.E. Partners’ Conference in 2005, says: “Money isn't necessary to initiate projects. You need initiative to get projects off the ground. The worker becomes the father and the work his child.”
There are many impacts of alien invasive plants:

- Alien plants usually grow more vigorously, reproduce more rapidly and have fewer natural enemies than indigenous plants. Dense groves of a single species of alien plants threaten biodiversity by crowding out more diverse communities of indigenous plants and animals, including rare and locally unique species.

- Ecosystem goods and services like edible and medicinal species, grazing, tourism opportunities and natural pollination services are all threatened by alien invasions.

- Alien plants threaten agriculture by invading potentially productive grazing land and areas where wild flowers are harvested.

- Experiments have shown that alien trees use more water than fynbos; this reduces moisture in the soil and runoff to rivers especially in mountainous areas and on river banks, affecting plants, animals and people.

- Dense stands of wood alien shrubs and trees are highly flammable and increase the intensity of veld fires, the cost of fire control and the risk of damage to human life and property. Destruction of the vegetation and changes to the soil structure increase the risk of soil erosion after fire.

3.2 Dealing with invasive alien plants

Invasive alien plants pose one of the most serious threats to biodiversity in the CFR. Unchecked, alien plants spread rapidly and the greater the extent and severity of the infestation, the higher the cost of eradicating these plants. Government recognises the seriousness of the invasive alien plant problem and has put legislation, programmes and funding in place to facilitate alien clearing. A key approach has been to link alien clearing to poverty relief and skills development opportunities. In this section we reflect on the work of some of the key alien clearing initiatives in the region.

(i) We’re Working for Water

Addressing environmental degradation through poverty relief and social development projects is now a well-established model in South Africa. In 1995, however, when the Working for Water programme was launched, this was a novel idea inspired by the values of the new South Africa.

Through programmes like Working for Water, and more recently Working for Wetlands and Working on Fire, tens of thousands of people from the most economically depressed rural and urban areas have had the chance to earn a living and develop a range of skills through restoring local environments. Many have gone on to become independent contractors, managing their own teams and hiring out their services to the public and private sectors.

The Working for Water programme has made a conscious effort to benefit the most marginalised communities, setting targets for the employment of women (60%), youth (20%) and people with disabilities (2%). A range of life skills development opportunities and social services have been provided through these programmes; for example, with the help of the Department of Social Development, Working for Water has facilitated child care for the children of workers involved in alien clearing projects.

The Department of Water Affairs and Forestry (DWAF) administers this flagship programme in partnership with the Department of Environmental Affairs and Tourism and the National Department of Agriculture.

Are we making a difference?

Working for Water is currently involved in more than 300 alien clearing projects across South Africa, around 20% of these being in the CFR. Without this programme, it is estimated that plant invasions could have been up to 30% more extensive than they are today. But is there proof that removing invasive alien plants actually makes a difference to the amount of water reaching our rivers and dams? Indeed there is: the opposite table shows the average increase in stream flow measured after clearing of invasive alien plants from three sites in the Western Cape.

Conservative estimates suggest that the clearing of invasive alien plants by the Working for Water programme generates increased runoff of about 56 million m³ every year; this equates to the full sup-

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If alien plants were allowed to invade to their full extent, however, we would risk losing a further 334.5 million m$^3$ of water, which is equivalent to 16% of the registered water use in the Western Cape (blue bars).

In addition to increasing the supply of water, removing invasive alien plants results in huge benefits for biodiversity and creates employment opportunities for thousands of people. These are compelling reasons why government should continue to support the Working for Water programme.

**Getting help from Working for Water**

Working for Water is a public sector programme funded almost entirely by government. It focuses on clearing invasive alien plants from areas identified as priorities in terms of water, biodiversity and the productive potential of untransformed agricultural land, such as land used for grazing and flower picking. Working for Water may partly fund alien

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**Increase in stream flow immediately after clearing of invasive alien plants**

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Vegetation cleared</th>
<th>Short-term stream flow increase (cubic metre/hectare of aliens cleared/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Du Toitskloof</td>
<td>Wattle &amp; Eucalyptus</td>
<td>9</td>
</tr>
<tr>
<td>Somerset West</td>
<td>Wattle &amp; Eucalyptus</td>
<td>12</td>
</tr>
<tr>
<td>Jonkershoek</td>
<td>Pine</td>
<td>31</td>
</tr>
</tbody>
</table>

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**Water yield**

This is the amount of water that can be collected and used in a catchment.

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The effects of clearing are dramatic, but fynbos vegetation recovers rapidly.
clearing on private or municipal land if this land is identified as a priority, but the land owner must agree to cover the costs of keeping the land clear of aliens after the initial clearing period. Private landowners who do not qualify for Working for Water assistance can obtain advice from the National Department of Agriculture or from their regional Working for Water office. They are able to draw from the growing pool of private alien clearing contractors, most of whom have been trained through involvement with Working for Water projects.

Founded on the principles of sustainable development, the Working for Water programme has successfully integrated environmental restoration, social development and poverty relief. Over the years, through turning this vision into reality, it has helped to transform not only the South African landscape, but also relationships between environmental agencies and local communities.

What have we learned?

- The Working for Water programme grew so fast that it became necessary to put in place norms and standards and assessment procedures in order to ensure effective project management across the board. The resulting Activity Sampling Programme has helped to improve productivity significantly in some areas.

- An effective national alien eradication strategy requires a multi-pronged approach. Working for Water encourages workers who have completed their contracts to set themselves up as independent contractors with their own alien eradication teams. However, relatively few private landowners are complying with alien clearing regulations, thus reducing the amount of work available. Advocacy and incentives are needed to encourage landowners to clear their land, providing work for alien clearing teams.

- Administrative systems and processes that suit the formal economy are not always appropriate when working with contractors from the informal sector. Rigid protocols reduce the responsiveness and effectiveness of some Working for Water projects. Delays in signing contracts or making funding available impact negatively on the appointment of workers and contractors and on the achievement of alien eradication targets.

- Post-clearing rehabilitation is needed in some areas, in particular areas that have been densely invaded for long periods, such as some river courses and coastal plains.

- An annual budget of R450 million may sound generous but it is not actually enough. Working for Water is not winning the war against invasive alien plants and needs to investigate additional sources of revenue, such as introducing levies for ecosystem services. In the CFR, for example, the current budget is R110 million per annum, whereas as much as R600 million may be needed.

- Working for Water is currently investigating the establishment of Value Added Industries, like building materials (e.g. wood composites), biofuels like charcoal and, on a smaller scale, the manufacture of wooden crafts and furniture. Pilot projects suggest that income from these industries could offset the cost of clearing rooikrans, Port Jackson and black wattle by 14–20%.

- Biological control is making a major contribution by dramatically slowing down the spread of the two most serious invasive alien species in the CFR: rooikrans and Port Jackson. This will significantly reduce the budget of R600 million required for both initial and follow-up clearing.

(ii) Addressing Invasive Alien Plants in the TMNP

In the early years of the Table Mountain National Park (TMNP), the clearing of invasive alien plants was funded by the Global Environmental Facility through the World Bank and was mainly outsourced to experienced contractors, in line with the donor’s competitive procurement arrangements. Once this fund-
ing ran out, the Park started sourcing funds from Working for Water. This heralded the start of what has since become an important focus of the TMNP: creating training and employment opportunities in the Park for unemployed residents of neighbouring townships and informal settlements (Chapter 2.2).

The transition from GEF to Expanded Public Works Programme funding brought with it many changes. The TMNP held open meetings for its existing contractors to explain that, while wages would be significantly lower, the new system would provide work and training for the most disadvantaged members of the community. Poverty relief projects set out very strict contract conditions, which have enabled the Park to insist on high standards of occupational health and safety and fair labour practice from contractors. When the Park started recruiting new contractors, the response was enormous; eventually 60 contractors were appointed from over 400 applicants. Since the initial training period, contractors have been assigned to different sections of the Park and compete among themselves for contracts. This element of competition motivates teams to produce high quality work.

Herman Junghauer who oversees alien clearing projects in the Park recognises the immense value of poverty relief programmes. As a self-confessed perfectionist, however, he is always looking for ways to improve the system. “We provide contractors with training in a host of areas, like occupational health and safety, first aid, business skills and personal finance,” he says “but even though we have an exit programme, I don’t think there is enough support for emergent contractors once they leave the poverty relief programmes.” Herman would like to see a contractors’ forum set up through which landowners could source newly established contractors.

For an organisation to sustain an effective alien clearing programme, it must invest in effective management capacity and have access to ongoing funding. In order to plan and manage a well-co-ordinated and integrated alien clearing strategy that involves different poverty relief programmes, the TMNP established an Invasive Species Control Unit. The unit draws up an Annual Plan of Operations (APO), which ensures a systematic approach to initial clearing plus adequate follow up. Working for Water provides funding in three-year cycles, which allows the Park to plan ahead. Being a flagship programme of government, it is likely that this source of funding will be sustainable. Herman finds this model much more satisfactory than once-off donations that tend to encourage large-scale initial clearing without adequate long-term follow up.

Being funded by the Department of Water Affairs and Forestry, the Working for Water programme focuses primarily on clearing invasive alien plants from catchment areas in order to increase water run-off to streams and rivers. The restoration of biodiversity is an important spin-off of alien clearing, but generally Working for Water teams do not actively rehabilitate indigenous vegetation after aliens have been removed. Herman sees post-clearing ecological restoration as the next important challenge for the TMNP. A new project funded by the Department of Environmental Affairs and Tourism to remove invasive alien plants from Robben Island and to restore the natural vegetation will provide an opportunity to explore rehabilitation methods that can then be applied on the Peninsula. Restoration projects that complement alien clearing, like erosion control, the development of indigenous nurseries, and replanting disturbed areas, can create additional job opportunities to further benefit neighbouring communities.

The Table Mountain National Park is looking beyond alien clearing to the re-establishment of indigenous vegetation. Sometimes it’s an interesting operation!

A major project
Clearing invasive alien plants is a big budget project requiring significant co-ordination. During 2005, the TMNP planned to:

- Spend nearly R8.6 million on alien clearing.
- Clear over 16 000 ha.
- Provide nearly 60 000 person days worth of employment!
What have we learned?

- Some contractors find it very difficult to manage contract funds, and spend money earmarked for business expenses on private purchases. To address this problem, all TMNP contractors must appoint a book-keeper and the Park regularly audits their books. If a contractor continues to mismanage funds, that person is no longer given contracts.

- Poverty relief programmes are supposed to benefit the most needy members of a community, but in some cases contractors appoint friends or family members who may not fulfil this criterion. The TMNP is trying to address this by asking community leaders to help identify contractors and workers. Stricter criteria are needed to ensure that funding benefits those for whom it is intended.

- Contractors sometimes find it difficult to maintain their teams, as some workers fall away and need to be replaced. Appointing untrained workers is a problem, and the Park is working with community leaders to try to address this problem.

- Although allocation of Working for Water funding has become much more efficient with the introduction of three-year funding cycles, project managers still experience problems of breaks in funding availability between cycles. A system of bridging finance needs to be investigated to protect the vulnerable communities who rely on poverty relief projects.

- Currently, the biggest invasive alien plant problem in the TMNP is caused by neighbours who continue to grow invasive species and who dump garden refuse in the Park. The TMNP needs to explore opportunities to encourage greater co-operation.

(A) Minister of Water Affairs and Forestry, Kgalema Motlanthe became a powerful champion of the Working for Water programme. Passionate about the need to conserve and provide water, alleviate poverty and empower people, he quickly seized on the opportunity that biodiversity restoration could play in achieving these goals simultaneously. Under his leadership, South Africa demonstrated to the world that sustainable development is possible when biodiversity considerations are mainstreamed into social and economic development.

Effective implementation is founded upon good science, information and knowledge. A strength of the Working for Water programme has been the underlying understanding of how water supplies and biodiversity are affected by alien invasive species. This became the subject of a comprehensive scientific review in the South African Journal of Science.

(iii) Santam Cape Argus Ukuvuka Campaign

The devastating fires on the Cape Peninsula in January 2000 were unprecedented, not only in terms of their extent and the damage they caused but also in relation to the response they elicited. Within just ten days of the fires, funding had been committed and a business plan drawn up enabling the establishment a short-term, issue-focused partnership known as the Santam Cape Argus Ukuvuka Campaign.

Over four years (2000–2004) the project staff worked with numerous partners in the City of Cape Town, initiating projects and facilitating processes aimed at reducing the risks of both bush fires and fires in informal settlements. The project received a total of R63.5 million, with most support coming from the City of Cape Town, Santam and, in the form of campaign advertising, the Cape Argus newspaper.

The campaign faced numerous challenges, not least the need to work with and through multiple stakeholders during a period of massive restructuring of many of the partner organisations. Despite this, the campaign enjoyed a high level of commitment from competent staff and committee members. Being a small organisation, it was able to operate with minimal bureaucracy and make funding available relatively efficiently. It also provided a forum for diverse organisations to work together to address issues of common concern.

The Ukuvuka Campaign spent about 50% of its budget on alien clearing, resulting in around 5 000 ha being cleared during the four-year project period. Most of this took place within the TMNP, greatly enhancing the ability of the Park to meet its alien clearing targets. Alien clearing is an ongoing process, however, and Ukuvuka made sure that government agencies like the Public Works Department and the South African National Defence Force, which also benefited from funding, committed themselves to ongoing alien clearing on their land.

Ukuvuka, with its partner the Cape Argus, conducted a very high-profile fire awareness campaign. A survey conducted
towards the end of the campaign period revealed a high level of awareness about the need to remove invasive alien plants, and the motivation to do so, especially among residents living along the edge of the TMNP.

Following the Working for Water model, the Ukuvuka Campaign contributed to poverty alleviation and social development by employing and training workers and contractors to undertake various labour-intensive projects, from clearing aliens, controlling erosion and cutting fire breaks, to establishing indigenous plant nurseries to assist with rehabilitation.

By 2004, 25 contracting entities existed, employing 334 workers who had been involved in projects linked to the Ukuvuka Campaign.

A mid-term evaluation in 2003 revealed that the contractor system was not working optimally. A number of problems were identified, including a lack of management skills, poor supervision, low productivity, substance abuse and concerns that different contractors were paying their team members different rates. A

Sandra Fowkes

A description of the C.A.P.E. Programme would be incomplete without the wise words of Sandy Fowkes. Sandy managed the public participation programme when the C.A.P.E. Strategy was being formulated, and was largely responsible for getting all of the main players on board. Blessed with a talent for avoiding conflict and soothing bruised egos, Sandy managed the Strategy Workshop in 2000 and kept consultants and stakeholders on the high road of constructive debate. When it came to putting together the Ukuvuka campaign that represented a risky experiment to link the interests of powerful stakeholders to deal with a highly charged topic, Sandy was the obvious choice. She summed up the situation well, saying that “campaigns like Ukuvuka work well as semi-independent partnership projects. When it all goes wrong, the partners can blame the Campaign Manager, and when it all goes right, the partners can all take the credit”. Wise words indeed, and which inform many of the project implementation mechanisms in C.A.P.E. Take heed, you project co-ordinators!
Contractor Development Working Group was set up and a six-month Contractor Development Programme put in place to strengthen skills and build professionalism. Ukuvuka also provided interest-free loans to contractors starting up new businesses to enable them to purchase protective clothing and equipment. This additional support bore fruit; an indication of the determination of the contractors to manage their new businesses effectively was that all contractors working for the City of Cape Town and 90% of contractors working for TMNP paid back their loans within six months!

Although short-term projects have their limitations, the Ukuvuka Campaign was able to focus on the issue at hand, mobilise expertise and resources efficiently and responsively, avoid some of the administrative processes of its institutional partners, and produce key outputs that have helped to translate laws and policies into practical action.

Campaign Manager Sandra Fowkes discusses progress with the then Minister of Water Affairs and Forestry, Ronnie Kasrils.

What have we learned?

- **Being a small, highly focused project, the Ukuvuka Campaign was able to respond rapidly to address short-term needs and catalyse key initiatives relating to alien clearing.**
- **Alien clearing should have been informed by a GIS database integrating all alien clearing information on the Cape Peninsula, but this was not available. Consequently it was not possible to plan effectively or accurately assess the impact of Ukuvuka’s interventions.**
- Implementing agencies battled to set up effective, integrated work programmes, making it difficult to provide alien clearing teams with regular work. The Ukuvuka Campaign therefore worked with the City of Cape Town and SANParks to set up systems to provide contractors with ongoing work and regular payment. Both the City and the Park appointed managers to co-ordinate alien clearing activities.
- **Regular, predictable work and efficient payment of contractors builds worker morale; administrative delays in providing work opportunities or paying contractors undermines enthusiasm and forces teams to seek work elsewhere.**
- **Paying workers involved in poverty relief projects different rates causes confusion and leads to disputes.**
- In order to monitor the effectiveness of interventions, you first need to set up systems to enable assessment. For example, the Ukuvuka Campaign could not accurately assess its impact on employment creation as it had no criteria against which to measure the readiness of contractors to operate in the open market. Furthermore,

Val Charlton

One of the enduring legacies of the Ukuvuka Campaign is the programme that has picked up many of its responsibilities, while expanding these countrywide, namely Working on Fire. And one of the most obvious reasons for its rapid success was the experience and tenacity of its manager, namely Val Charlton. Val managed a seamless transition to the new programme and set about building upon its public profile and management effectiveness through a well co-ordinated programme. Key to this has been an effective communication campaign that has used the summer fires of 2005/6 to draw attention not only to the risk to life and property, but the underlying risk to biodiversity when fires are too frequent or too intense as a result of increased fuel loads. A major challenge is to maintain institutional readiness when there is no immediate fire danger. A few years of lowered risk and complacency sets in. This has set the stage for a re-examination of the ecological effects of fire and the arrangements that need to be maintained to deal with the incidence of fire rationally and objectively. Val has her work cut out for her!
workers were not monitored to see how many managed to establish their own businesses after their training.

- Legislative requirements to clear alien vegetation help to motivate private landowners to clear their land, but this is undermined when enforcement is ineffective. Using some of its funding to employ legal experts enabled Ukuvuka to start prosecuting negligent landowners and setting necessary precedents; however, this proved to be a very slow process.

- Short-term campaigns may be good at initiating programmes but they have to rely on institutional partners to maintain and develop these programmes once the campaign comes to an end. It is important to develop exit strategies to institutionalise key initiatives before the end of the campaign.

(iv) P.R.O.T.E.A.—Poverty Relief in the Overstrand through Treatment and Eradication of Aliens

An inspiring example of an alien clearing programme in the CFR is the appropriately named P.R.O.T.E.A. project. In 2000 Craig Spencer, an environmental officer at the Overstrand Municipality, drew up a 10-year plan to remove invasive alien plants from the Hangklip-Kleinmond area of the Kogelberg Biosphere Reserve. With seed funding of R141 000 from the Table Mountain Fund, this three-year pilot project soon attracted the support of Working for Water, the local authority and private landowners. Today Working for Water provides a R5 million annual budget for invasive alien clearing in the Overstrand Municipality and employs over 200 previously disadvantaged individuals. The original 10-year plan for alien eradication has evolved into at least a 20-year plan for the entire municipality.

Some time ago, the P.R.O.T.E.A. project came up with a novel idea to encourage private landowners to remove invasive alien species from their properties. They put up a map of the municipality in a local shopping centre where they could record progress made with the alien clearing project. As an area was cleared, they shaded in that section of the map. Properties of landowners who refused to co-operate were also marked on the map—in red! Now landowners who have cleared their properties are starting to put pressure on their non-compliant neighbours because they don’t want seed drifting over the fence and causing their alien problem to recur.

Monique van Wyk has been co-ordinating P.R.O.T.E.A. since 2001 and her enthusiasm for the project is infectious. Like many other Working for Water project managers she is realistic about the day-to-day challenges but tremendously positive about the benefits of the programme and the way in which it has developed. “If you start as a project manager with Working for Water today, you get a full toolbox!” she says, “Everything you need is on a CD Rom and you can just get on with the job.” She lists the institution of accredited training, the development of an exit strategy for contractors, and the introduction of a three-year project cycle as ways in which Working for Water has adapted and improved.

Monique is looking forward to an exciting new stage in the P.R.O.T.E.A. project: the establishment of value-added industries. Funding from Working for Water has enabled the Overstrand Municipality to draw up a 20-year alien clearing plan for the municipality, which provides employment for over 200 previously disadvantaged individuals.
for Water project cycle to start clearing invasive aliens in the area east of Stanford; Working for Water will appoint new contractors to set up secondary industries, like producing firewood, mulch and wooden items like outdoor furniture. Monique hopes that this project will address two of her concerns: the need to provide training opportunities in a broader range of skills, and the removal of cut wood from properties, which will reduce fuel loads linked to the risk of fire.

(v) Adopt-a-Plot: Co-ordinating the efforts of volunteers

Lovers of the fynbos have long been passionate about eradicating invasive alien plants. Many a volunteer hack group patrols the CFR with a “seek and destroy” glint in the eye. With tasks ranging from chain saw massacres of towering pine trees to applying herbicide and pulling young seedlings, this is fun in the sun for the whole family!

Some hackers have become legends in their own time. Alf Morris, one of the stars of the TMNP’s video Hoerikwaggo: People of the Mountain, has been a regular hacker for 20 years. Being an octogenarian isn’t stopping him either. When he isn’t sawing down aliens, you will find him planting and tending silvertree seedlings to grace the slopes of Silvermine. Alf is a member of the Friends of Silvermine Nature Area. Since 1992 the Friends have co-ordinated an Adopt-a-Plot programme, which has enabled individuals, families and school groups to make a meaningful contribution to restoring the natural vegetation of the Silvermine section of the TMNP. The project started small with only one or two plots; today there are more than 30.

What have we learned?

- Particularly in small towns and rural areas, you need to train contractors in a wide range of skills because there is not enough work to sustain many people with similar skills.
- Project managers need to plan work programmes to ensure that teams have work throughout the year.
- Developing the competence and confidence of emerging contractors to quote for an alien clearing contract requires guidance and practice; competing with fellow trainees for contracts before competing on the open market provides these opportunities.
- In rural areas, daily wages for seasonal work on farms exceed poverty relief grants; this can destabilise alien clearing teams and force contractors to take on unskilled casual labour.
- The Conservation of Agricultural Resources Act (CARA) is not the only legislation that compels landowners to remove invasive alien plants; you can also invoke the Veld and Forest Fire Act, the National Environmental Management Act, the Water Act and even Common Law relating to neighbours and nuisance. The latter states that a land owner may not use his/her land in a way that impacts negatively on a neighbour’s property. The neighbour may approach the court to compel the land owner to remove the source of the nuisance, which might be an alien tree shedding seeds.

What have we learned?

- Effective co-ordination of voluntary alien clearing efforts relies on having a champion responsible for each area.
- Good communication between conservation authorities and volunteer groups greatly enhances the effectiveness of alien clearing efforts.
- Alien clearing is a dynamic process; co-ordinators must be able to respond to changes in alien plant populations and the availability of champions and helpers.
- Long-winded reporting systems don’t work. A more efficient spreadsheet system would facilitate monitoring and record keeping.
- The regeneration of fynbos after alien clearing is astounding! Development is NOT the only alternative for badly invaded veld.

The Noordhoek-Kommetjie wetlands are an essential link in consolidating the Table Mountain National Park. Wetland restoration there has created many job opportunities.

Coastal and estuary wetlands are severely threatened by burgeoning development in the southern Cape.

Employment policies in the Working for Water have ensured equal opportunities for both men and women to develop skills and improved livelihoods.
Co-ordinator Sandy Barnes recalls that the Adopt-a-Plot programme originated when the Friends decided to approach WWF-SA for funding to support their alien clearing efforts. Having to put together a funding proposal motivated the Friends to come up with a system that would enable them to use the money most effectively: Adopt-a-Plot was the result. They used the funding to buy equipment and herbicides, which are shared by hack groups that meet on different weekends. In the case of chainsaw operators, the Friends bought equipment to suit the individuals who play this more specialised role. Some of the chainsaw operators now assist Friends groups in other areas to remove large trees. These volunteers are so skilled that they have helped SANParks to fell some particularly large pines that contractors were unwilling to tackle.

Although volunteer groups and management authorities sometimes find it difficult to work together, Sandy is delighted with the relationship the Friends have with the TMNP. She puts it down to two things: firstly, all the area managers they have worked with keep them informed of developments and involve them in decision-making; secondly, the Friends see their role as primarily supportive rather than critical. If the Friends notice that something needs to be done, rather than complain, they ask what they can do to help. Positive relationships like this allow volunteer groups to contribute meaningfully to overall conservation management plans.

**Sandberg Fynbos Reserve**

With the cost of clearing invasive alien plants currently at about R6 000 per ha, private landowners who are unable to get help from programmes like Working for Water face an expensive challenge. William Stafford and Gerhard van Deventer have found a creative way to address this problem at Sandberg Fynbos Reserve, a 650 ha private nature reserve near the village of Elim on the Agulhas Plain. Historically, agriculture devastated vast swathes of lowland fynbos and renosterveld in this area; today alien *Acacia* and *Eucalyptus* trees threaten what’s left.

International volunteers from the British Trust for Conservation Volunteers and Canada World Youth also spend time at Sandberg, hacking in the mornings and hiking and exploring in the afternoons. Sometimes a volunteer with a particular interest will tackle a special project, like drawing up a bird list for the reserve. Some groups volunteer for up to three weeks; having a team involved for this long makes it possible to address the invasive alien problem more strategically.

Sandberg Fynbos Reserve aims to protect and repopulate endangered indigenous flora, strengthen public awareness of fynbos, promote and practice permaculture and sustainable living, and attract ecotourism.

Schools from the Agulhas Plain are starting to find Sandberg a special place to experience and learn about the environment. After removing invasive aliens, they find out how their efforts are helping to restore biodiversity by taking part in an ongoing project to monitor vegetation in a cleared area. What’s special about Sandberg is that the people who spend time there don’t only work hard; they also have enormous fun with friends. People leave having deepened their relationships with both people and nature.