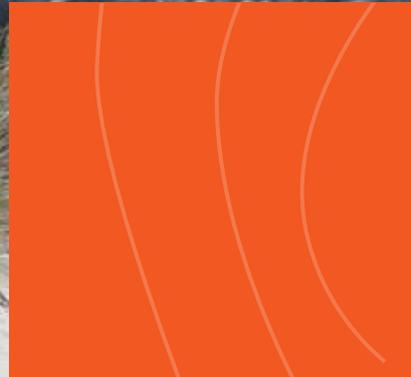
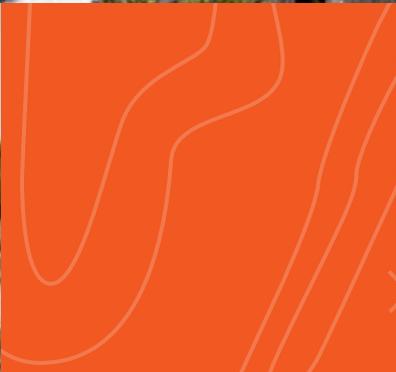




A Collective Effort 2010-12

A report on progress of the Natural
Resource Management Strategy for
Southern Tasmania 2010-15



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Resource Management Strategy for
Southern Tasmania 2010–15

This report was prepared by NRM South



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Acknowledgements

Many organisations provided information for this report and assisted with development of case studies. Their contribution is greatly appreciated.

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Front cover images: Tasmanian devil joey: DPIPWE; Fish farm at sunset: Tassal; Hiker overlooking surf: I. Brown; Volunteers on beach bank: J. Marsden-Smedley.

Disclaimer

In developing this report, every effort has been made to ensure that the information is correct and that the content reflects the progress on action aligned with the *Natural Resource Management Strategy for Southern Tasmania 2010–15*.

Further information

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Message from the Minister

It is my pleasure to introduce the first progress report on the *Natural Resource Management Strategy for Southern Tasmania 2010–15*. The title, *A Collective Effort 2010–12*, aptly reflects the reality that effective management of our rich and diverse natural resources involves whole-of-community action. It is up to us all to manage our precious resources – land, water, air, plants, animals and microorganisms and the system they form – for the benefit of the entire community.

The Strategy was developed in accordance with the *Tasmanian Natural Resource Management Act 2002* and provides a framework to guide programs and activities for natural resource management in the region. It is closely aligned with the principles of natural resource management set under the Act which encourage partnerships, community responsibility, integrated management, priority based and balanced decision making, and prevention rather than cure.

As illustrated in this report, many different stakeholders including government and non-government organisations, industry, land and water managers, as well as community groups are actively contributing to natural resource management in the Southern Region. Activities range in scale and scope from weed control, to revegetation, monitoring threatened species populations, soil management, awareness raising, field days and much more. Many of these build on past work, but there are also actions to meet new priorities identified in the Strategy, such as climate change.

It is particularly pleasing to see a high level of collaboration among organisations and groups. This partnership approach helps to ensure that the interests of key stakeholders are taken into account and maximises return on investment. I also commend the resourcefulness shown by the sector where organisations are seeking new ways to achieve better outcomes, often with limited funding.

NRM South has prepared this report as part of its responsibility to lead monitoring, evaluation, reporting and improvement of the Strategy. I would like to acknowledge NRM South and the many stakeholders who contributed for providing a valuable snapshot of the implementation of the Strategy.

A Collective Effort 2010–12 showcases and celebrates the many achievements in natural resource management from 2010–12. Of course, it is widely recognised that there are many challenges ahead to protect and enhance our natural resources for conservation, recreational and productive purposes. The outstanding work and collaborative approaches outlined in this report provides me with confidence that we have the skills and good will to rise to these challenges.

Brian Wightman

Tasmanian Minister for the Environment,
Parks and Heritage



Image: N. Fitzgerald

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The Natural Resource Management Strategy for Southern Tasmania 2010–15

The *Natural Resource Management Strategy for Southern Tasmania* (the Strategy) is a guide for natural resource management in Southern Tasmania (the Region) from 2010 to 2015. It builds on the previous *Southern Region Natural Resource Management Strategy* (2005) and incorporates research on emerging issues and changed environmental circumstances. The Strategy was developed through extensive consultation with stakeholders and in accordance with the *Tasmanian Natural Resource Management Act 2002* and subsequent amendments. It provides a strategic, integrated framework for natural resource management in the Region, focused on two objectives:

1. Protect and ensure wise use of the Region's natural assets
2. Enhance the resilience of local communities.

These objectives are supported by five strategies:

1. Maximise return for natural resource management investment
2. Increase community awareness of the Region's natural resource assets
3. Manage current and emerging threats to the Region's natural assets
4. Measure and report changes in natural resource condition
5. Increase stakeholders' capacity to use the Region's natural resources wisely.

This first report on progress towards implementation of the Strategy in the Region aims to give a broad overview of achievements under the five strategies by describing the range of activities across a number of organisations and businesses in the Region. The report presents information on natural resource management that is currently available and also identifies key issues and gaps in the monitoring and reporting on progress against the five strategies.

About this document

The information in this document was gathered through engagement with 34 of the key organisations involved in natural resource management in the Region, supplemented with a desktop survey of other published information. We received detailed responses from 25 organisations, which have been summarised in this report. This report is not an exhaustive review of all natural resource management activities in the Region. It provides insight into the wide range of action and progress in the Region and some understanding of how natural resource management is undertaken and results achieved.

The report is organised into sections that address the five strategies interspersed with more detailed case studies. The end of each section highlights areas for focus in the next two years, and the future focus section at the end of the document identifies gaps in implementation of the Strategy and actions to improve monitoring and evaluation of progress against the Strategy for the next two years.



At a glance

Return on natural resource management investment

Direct investment in natural resource management in the Region over the last two years is well in excess of \$100 million each year. Funds came from all three levels of government, business and philanthropy. Partnerships maximised return on investment by leveraging funds and in-kind contributions across organisations, as well as by making effective use of skills and non-financial resources. Volunteers make a significant contribution; estimates of the value of volunteer contributions were up to seven times the amount invested by funders.

Community awareness raising

The importance of community awareness and engagement has been recognised, with more than 30 full time equivalent staff reported to be working to raise awareness in the Region.

All sectors of the natural resource management community undertook activities to raise community awareness about natural resource management issues. Activities in 2010–12 were frequent, broad in scope, varied and had wide reach. Tens of thousands of people received information and inspiration about the importance of Tasmania's natural resource assets, the efforts that are being made to enhance our natural resources and ways that community members can use them responsibly.

Managing threats to the Region's natural assets

There are a number of existing and emerging threats to the state of the Region's natural resources, including those resulting from invasive species, cumulative land use and development, climate variability and the potential impacts of climate change. Since 2010, significant effort has been directed to understanding, mitigating and managing these threats.

There has been coordination of and investment in weed management to both protect biodiversity and also maintain productive agricultural systems.

The Southern Tasmanian Councils Authority, in collaboration with the Local Government Association of Tasmania and the Tasmanian Climate Change Office, coordinated work across municipalities to improve understanding, prediction and planning relating to climate change resulting in numerous actions to reduce greenhouse gas emissions. In addition, there has been considerable progress in understanding and managing threats to iconic species, habitats and water resources in the Region.



Assessing changes in resource condition is an enduring challenge.

Above: A volunteer recording invasive oyster numbers at Nubeena, Tasman Peninsula. Image: Southern Coastcare Association of Tasmania.

Measuring and reporting changes in natural resource condition

Natural resource monitoring is undertaken each year across the Region, with the scope ranging from site- to catchment-scale. Monitoring is undertaken by community groups, government agencies, businesses and coordinated multi-partner groups. Natural resource condition has been described in many areas providing a good baseline from which to measure changes.

In spite of the good work done, significant opportunity remains to improve the alignment of monitoring efforts and close gaps in their focus and coverage. The information collation process undertaken for this report was not directed to making an assessment of the comprehensiveness or adequacy of resource condition assessments or monitoring data.

Building capacity to use natural resources wisely

Since 2010, there have been concerted efforts by both government and non-government organisations to increase capacity for natural resource management within and among organisations, as well as in the wider community. Capacity development included a broad spectrum of activities, from Region-wide planning undertaken by councils, to training courses, workshops and field days, small grant programs funding on-ground action, and facilitated networking events. Subjects covered topics including weed identification, soil health, grasslands management, chemical handling and action planning, while mentoring and partnerships were key mechanisms for transferring skills and knowledge among organisations.



Reporting against the Strategy

The Natural Resource Management Strategy for Southern Tasmania 2010–15 includes a commitment to report on implementation of the Strategy every two years. This first report, covering 2010–12, has identified a number of areas for further refinement to improve the mechanisms and content of future reporting.

1. Develop a consistent reporting framework across the natural resource management sector, including agreement on definitions, process, timelines and indicators to clarify how implementation of the Strategy will be measured.
2. Support the natural resource management community to establish record-keeping systems for reporting against the Strategy.
3. Improve management of data about natural resource management activities and their outcomes.
4. Establish means of consistently monitoring community awareness of natural resource management issues.
5. Increase the focus on obtaining resource condition data across the spectrum of natural resources.

The availability, accessibility and comprehensiveness of baseline and monitoring data continue to be issues for effective natural resource management. Progress has been made during 2010–12 in addressing these challenges, with development of baseline condition reports for a number of natural resource assets, improved coordination of monitoring of water resources, and new data storage and reporting. Addressing these enduring challenges to develop an information base suitable for the assessment of changes in resource condition over time will require concerted collaboration and effort across the sector.



Maximise return for natural resource management investment

Increasing competition for limited funding means that investment in natural resource management activity must be strategically managed to avoid waste and maximise community and environmental returns.

In 2010–12, NRM organisations have established new partnerships and developed innovative ways to harness and maximise value from limited funds.

Direct investment in natural resource management

Direct investment in natural resource management in the Region over the last two years is well in excess of \$100 million each year. This is a significant sum, yet still underestimates the actual dollar value invested in natural resource management activities for two reasons: it is based on information from a limited number of organisations involved in natural resource management in the Region and it does not include the enormous in-kind contribution of time, effort and materials provided by volunteers, community groups, private landholders and businesses, large and small.

Most of the direct investment in natural resource management funds on-ground activity with some organisations estimating that it accounts for up to 90 per cent of funding allocation. Funds also go towards supporting community groups, research, monitoring, planning and coordination.

Sources of funding

Funding for natural resource management comes from many sources. The Australian Government is a significant contributor, providing more than \$6 million to the Southern Region in 2010–11 through the Caring for our Country initiative. The Tasmanian Government funds on-ground natural resource management through core funding to various government agencies such as the Department of Primary Industries, Parks, Water and the Environment (DPIPWE). Councils are also at the forefront of local natural resource management with waste, water, environmental health, weed and bushland management at the core of their business. Ratepayers are councils' primary source of funding, however councils also attract funds from government grants, corporate partners and the regional NRM body.

Greening Australia and the Tasmanian Land Conservancy report an increase in philanthropic funding from individuals and corporations over the past two years, highlighting the increasing awareness of the importance of stewardship and responsible use of natural resources in the community. Major projects have benefited from corporate sponsorship from businesses such as Southern Water, Qantas, Woolworths, MyState and Hydro Tasmania, as well as numerous individual philanthropists.



Above: An Eaglehawk Neck Coastcare Group working bee. Image: J. Milne.

Community action was supported by small grants from the Australian Government, State Government, councils, Landcare Tasmania, Greening Australia, NRM South and the Southern Coastcare Association of Tasmania. Information provided by Tasmanian natural resource organisations indicates that over half a million dollars of devolved grant funding support was provided to some 113 groups and individuals to undertake natural resource management in the 2010–12 period. These figures do not include funding that the Australian Government provides directly to community groups.

The Tasmanian Land Conservancy has demonstrated the effectiveness of a particularly innovative and successful approach to funding natural resource management outcomes. Using a revolving fund to acquire property of high conservation value, the organisation applies conservation covenants before reselling the properties in order to release the capital for further acquisitions (see case study 2).

Partnerships maximise return

Partnerships increase the return on investment by linking groups with different expertise to maximise the effective use of skills, extending the scope and reach of a project while avoiding unnecessary duplication of activity. The Southern Region boasts many examples of such beneficial partnerships:

- The Derwent Estuary Program (see case study 8) draws on the resources of six councils, the Tasmanian Government, five industry partners, three research institutes and a large number of not-for-profit community groups and organisations. This has resulted in a long-term, integrated, whole-of-catchment monitoring, research and outreach program. More than \$100 million has been invested since 2000 in a variety of industry projects that benefit the estuary as a whole.
- Working with landholders and forestry contractors, Greening Australia, the Tasmanian Government and the University of Tasmania have established numerous permanent biodiverse carbon restoration research sites. Across the Region, over 120 000 native trees, shrubs and grasses have been planted on 100 hectares of degraded farmland, benefiting landholders, investors and the environment.

- Hydro Tasmania, Forestry Tasmania, the Tasmanian Parks and Wildlife Service, the Department of Primary Industries, Parks, Water and Environment and NRM South joined together to tackle biosecurity threats in the vulnerable Tasmanian Wilderness World Heritage Area. Together they have upgraded field hygiene procedures and delivered extensive training courses supported by a field manual, developed education materials and established field washdown stations to reduce the risks of pests and disease to frogs, native vegetation and waterways.

The value of volunteers

There are an estimated 140 community groups involved in natural resource management activities in the Region. They include agricultural production groups, Landcare, Coastcare, Wildcare, schools, wildlife rescue, 'Friends-of' and other community groups dedicated to the management and care of natural resources in the Region. Many operate with limited funds but make up for this with their passion and dedication. They are at the forefront of both delivering on-ground action and raising community awareness.

While it has proven difficult to quantify the economic value of these volunteer contributions in this reporting round some organisations have made good progress in tracking the value of volunteer labour (in particular, see case study 1). For example:

- Landcare Tasmania estimates that approximately \$500 000 worth of labour was contributed by volunteers to natural resource management in 2010–12, which represents a six-fold annual return on direct funding invested. This volunteering effort was identified as spread between the on-ground activities of the Landcare community and general committee and administrative volunteer contributions.
- The Tasmanian Land Conservancy estimates the value of volunteer labour at just under \$300 000 for the 2010–12 period.
- The Southern Coastcare Association of Tasmania is supported by a volunteer committee, whose annual in-kind contributions to run the organisation via monthly meetings, email communications and an annual AGM amounts to almost \$20 000 per annum (based on a \$30 per hour volunteer rate).



Future focus

This report has highlighted the work of several significant partnerships that have developed and/or strengthened in 2010–12. They demonstrate how collaborative activities take maximum advantage of synergies in natural resource management and benefit all partners in both tangible and intangible ways. Continued focus on encouraging and developing partnerships across organisations, levels of government and the community is warranted to further improve returns on natural resource management investment.



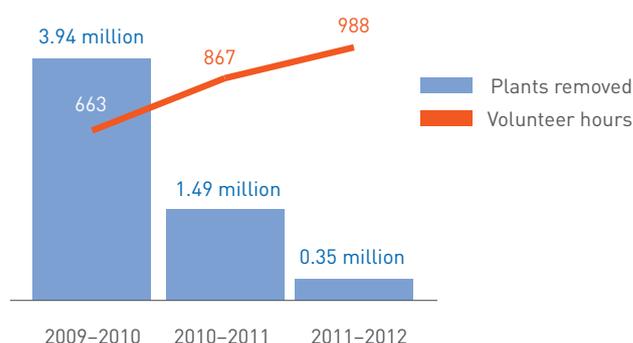
Measuring the impact of volunteers



Image: I. Brown.

By applying a systematic approach to collecting and reporting information on volunteer effort, Wildcare's Sea Spurge Remote Area Teams (SPRATS) are able to tell a comprehensive and convincing story about the remarkable impact of their weeding activities. In their first season in 2007, eight volunteers were confronted with beaches with as many as a million individual sea spurge (*Euphorbia paralias*) plants. Now, in 2013, some 10 groups and over 80 volunteers are scouring Tasmania's rugged and beautiful south-west in an informal competition to find the last individual sea spurge plant. Since 2007, volunteers have been trained to capture a variety of key facts and figures about the group's work. As a result, the program's founder, Jon Marsden-Smedley, is able to account for and convincingly demonstrate the rewards of seven years of effort.

The numbers speak for themselves — over 300 volunteers engaged, contributing in excess of 3500 person-days, 10 million sea spurge removed at over 560 sites and a kill rate of over 95% of adult plants at some sites resulting in \$1 300 000 of volunteer input for the approximately \$168 000 spent by state and federal government land management agencies. This capacity to provide clear evidence of the impact of their work has enabled the project to flourish to the point where the program has won awards and is now well supported by land managers, who know they receive approximately \$7.70 of volunteer value for every dollar spent supporting the program.



While volunteer effort increases, the number of plants removed decreases, clear evidence of the effectiveness of sea spurge removal by volunteers in remote south-west Tasmania.

Wildcare SPRATS provide a successful example of how efficient and effective volunteer-based environmental management approaches can be. The novel 'adventure-volunteering' approach of SPRATS effectively addresses the issues in natural resource management of diminishing resources, decreasing staff numbers and increasing management duties. In the space of seven years Wildcare SPRATS have tackled the once intractable problem of remote area weed infestation head-on and their sound monitoring and recording systems have provided a solid foundation for their significant success.



Innovative ways to make the NRM dollar stretch further



Image: Tasmanian Land Conservancy.

Effective natural resource management involves a balance between protection and wise use. Deciding not to use a resource to make money, however, can be an expensive proposition. Governments use public funds to set aside areas of high conservation value in parks and reserves. In this context, private land conservation is an important adjunct to government conservation efforts. Capable private land stewardship conserves the natural environment, providing benefits for future generations while enabling landowners to maintain market access and capitalise on new opportunities.

The Tasmanian Land Conservancy (TLC) uses a variety of mechanisms to protect areas of high conservation value on private land: through directly purchasing and managing land; working with landholders to establish protected areas on private land; and through an innovative approach to buying and on-selling land using revolving funds. Through the revolving fund mechanism TLC purchases a property, applies a conservation covenant to protect its natural values, and then sells it on to new owners who are committed to managing its values into the future. The approach not only reuses limited funds, but also builds a network of dedicated conservation-minded landowners.

The revolving fund activities receive income from a number of sources. The primary contributor was the Australian Government's Forest Conservation Fund. The fund invests in a range of developments on suitable properties, such as permits for building-site clearance, access road construction, boundary adjustment and subdivision, as well as some minor on-ground works that increase the chances of re-sale and cost recovery while maximising conservation outcomes. This adds value to the land and increases resale price. Profits are reused for purchase and protection of other properties.

During 2010–12, over 600 hectares of high conservation value land was added to the Region's protected areas using the revolving fund. This represents ten new conservation-minded land owners managing their private land under a conservation covenant.

Paul Quirk and his son, currently living in Sydney, bought 100 acres at Dunalley from the TLC. "I'm originally from Hobart and we love and appreciate the Tasmanian landscape. Buying land under conservation covenant is an opportunity to protect the land." He says that having land under conservation covenant involves responsibilities such as controlling weeds and respecting some restrictions on what activities are permitted on the land, however overall these are not onerous." Landowners who buy properties covered by conservation covenants are provided with support on conservation planning, monitoring and land management from the monitoring and stewardship team of DPIPWE's Private Land Conservation Program. The team assists with conservation planning, monitoring and advice about management. The Quirks get regular reports on the condition of their property, and also appreciate the sense of community engendered by the magazine and websites operated by the Private Land Conservation Program.

The Tasmanian Land Conservancy also offers an open invitation to landowners for support and advice. The recent fire at Dunalley swept through Paul Quirk's property, only hours after he'd left. He says, "Jim from the Tasmanian Land Conservancy went to inspect the property immediately after the fires went through. He sent photos through so we were informed about the extent of damage. We're lucky that the big trees were relatively undamaged."



Increase community awareness of the Region's natural resource assets

Effective management of natural resources requires whole-of-community action.

Developing a clear, shared awareness and understanding of the importance of natural resources for viable communities across all levels of government, business, industry and the general public is essential to successful NRM. In turn, natural resource managers need to understand what is important to the community and the barriers which exist to better natural resource management. The last two years have seen significant effort directed at identifying community interests and priorities, and developing targeted programs which increase knowledge of NRM assets, issues and opportunities.

How aware is the community?

Community engagement is fostered by promoting awareness of the link between the state of the Region's natural resource assets and viable communities and the actions that can be taken by individuals to protect those natural resources through on-ground activities and participation in natural resource management programs.

Many organisations in the Region include community awareness investigations in their annual and strategic planning work. For example, DPIPWE conducts visitor surveys in national parks, as well as more specific analyses, such as community attitude surveys as part of the fox eradication program. This work is aimed at informing community education and the development of awareness programs.

Recent community research has highlighted that there is growing awareness and understanding of how natural resource management underpins community wellbeing. A community survey undertaken by the Southern Tasmanian Councils Authority in 2011 found that the environment was top of mind for residents. The 1200 survey respondents were asked what they thought was the best thing about living in southern Tasmania that we should ensure is kept into the future. The three top answers were:

1. Lifestyle and liveability
2. Natural areas, untouched, beautiful
3. Environment, no pollution.

Several councils have undertaken detailed community surveys as part of their strategic planning and visioning exercises. Surveys by Huon Valley, Tasman and Glenorchy City Councils have all highlighted that residents are inspired by, care about and value their natural environment and resources.

Growing community awareness of local natural resource management projects was also evident in a community survey commissioned by NRM South in 2011. Approximately 40 per cent (of 200 survey respondents) of the general community were aware of natural resource management projects in their local area, up from 27 per cent in 2007. However, there were continuing gaps



in awareness, with community members primarily identifying coastal and forest management projects, and demonstrating considerably less knowledge of broader land management issues.

Focus group research by NRM South in 2011 showed the importance of local priorities for community volunteers. The research found that volunteers are mostly motivated by opportunities for social connection and to make tangible local changes. Generally there was low awareness and interest in regional or national NRM priorities.

Aboriginal land management knowledge and practices have been increasingly acknowledged by sections of the wider community. Aboriginal people have strong physical and spiritual links with country. Today's Aboriginal community is also developing knowledge and skills of contemporary land management practices, which are practised on properties such as Murrayfield on Bruny Island and in the Huon Valley by the South East Tasmanian Aboriginal Corporation.

Awareness raising activities in the Region

The importance of community awareness and engagement has been recognised, with more than 30 full time equivalent staff reported to be working to raise awareness in the Region. Even then, these numbers significantly underestimate the effort people make in raising awareness; some dedicated staff use their leisure activities to raise awareness outside work hours, and other staff who are not explicitly employed to raise awareness do so as part of their other duties. For example researchers often engage with community members as part of their research and council employees in rural areas are often asked for NRM advice by community members outside work. In addition, rangers, forestry workers, field workers and service staff at organisations such as Hydro Tasmania, DPIWPE and Forestry Tasmania frequently play a role in raising community awareness without it being an explicit requirement of their job.



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Some dedicated staff use their leisure activities to raise awareness outside work hours

Above: Water activities at Seafest, Triabunna. Image: Glamorgan Spring Bay Council.

All sectors of the natural resource management community were found to have undertaken activities to raise community awareness about natural resource management issues. Activities in 2010–12 were frequent, broad in scope, varied and had wide reach. They included stalls at festivals, agricultural shows and markets; visits to schools to discuss issues and plant trees; community activities to mark special days; conferences; field days and tours; workshops; celebratory events; seminars; community forums; media campaigns and advertising. Through these various means, tens of thousands of people received information and inspiration about the importance of Tasmania’s natural assets and resources and ways to use them responsibly.

Raising awareness about natural resources was a key feature in some schools in the Region, with children participating in the Southern Water/Greening Australia Water Warriors program and the Hydro Tasmania/Greening Australia Water for Life program. These two programs will be extended to all schools in the Region in 2013 at the new Sustainability Learning Centre in Hobart

(see case study 3). Over 5000 school children learned about sustainable forestry at Forestry Tasmania’s Forest Education Centre in 2011–12 and nine schools in Glenorchy City alone participated in tree planting activities on National Tree Day in 2011, involving 250 students in learning about the importance of trees for community health and sustainability.

Open days run by Forestry Tasmania and Nyrstar attracted thousands of members of the general public to learn about how those organisations make use of the Region’s natural resources. Thousands more visited the Tahune Airwalk (over 140 000 in 2010–12), Maydena and the Forest and Heritage Centre, gaining insights into sustainable forestry practices. Zoos and wildlife parks also provided important information about the Region’s species and habitats, particularly the Tasmanian devil and facial tumour disease (see case study 6).

For information about workshops, training and field days, see the section Strategy 5 on capacity building.

Where can people go for information?

Most organisations involved in natural resource management in the Region maintain a website containing information on natural resource management in some form. Many have substantial resources available. For example:

- Many websites contain important information for community groups, such as the Landcare Tasmania website, which provides many natural resource management related publications, links and contact details of community groups involved in NRM in Tasmania.
- Hydro Tasmania provides information on environmental water management, renewable energy and sustainability.
- DPIPW hosts the Natural Values Atlas, which users can search for information on more than 20 000 plant and animal species and vegetation communities from Tasmania, and view maps showing their location and extent; find and download information about sites that are listed in the Tasmanian Geoconservation Database for their geology, geomorphology or soil conservation values; and access data about locations that have been altered to control, monitor, manage or maintain natural values (see case study 7).
- NRM South operates the Nature Hub website, which provides information, resources and a calendar of events for community members seeking information and opportunities for taking action.

In 2010–12, more than 200 separate publications about natural resource management issues were distributed to people and organisations across the Region. They included newsletters, magazines and articles, information pamphlets, fact sheets, reports, manuals, management plans, action plans, catchment plans and instructional videos.

Social media has become increasingly important as a means of communicating about natural resource issues and the use of social media has become a key feature of the overall communications strategy for many DPIPW projects:

- Since joining Facebook in December 2009, the Save the Tasmanian Devil program has accumulated nearly 8000 'likes'.
- 13 000 people access the Parks and Wildlife Facebook page every week.
- 9000 views of Parks and Wildlife Youtube videos have been recorded.

Other organisations such as Forestry Tasmania, the Tasmanian Land Conservancy and Kingborough Council have used social media to engage the community in news, events and activities, increasing the sense of a shared community of care and practice. Many other organisations in the Region have reported that they are either experimenting with, or considering using social media as a communication tool in the future.

Future focus

There are over 140 community groups actively engaged in caring for natural resources in the Southern Region. This report found that the volunteer sector contributes disproportionately to conservation and care of natural resources, given their resourcing. Community groups are largely coordinated, supported and encouraged by non-government organisations, which are also largely voluntary and rely on short-term grant funding. Improving funding security for the volunteer sector remains a critical issue to ensure its continued contribution.

There have been a number of localised and topic-specific surveys of community awareness related to natural resource management over the last two years. While these are designed to meet specific program purposes, a more general and broader survey with greater sample size towards the end of implementation of the Strategy (2014 or 2015) would be invaluable to measuring the effectiveness of the huge effort that has been and continues to be made to inform and engage the community in natural resource management. It is also evident that surveys have been administered in a variety of ways restricting the ability to compare and provide trends. If Region-wide natural resource management investment and prioritisation is to be influenced by survey results, collaborative efforts to gain this information would prove beneficial.

It is important to have a continued focus on working with the Aboriginal community to raise awareness of the cultural values of the Region's natural resources.



Tasmania's first Sustainability Learning Centre

School-based sustainability education experienced a step change in facilities and programs in November 2012, with the opening of Tasmania's first Sustainability Learning Centre.

The new centre is a purpose-built, innovative and visionary educational facility located within the Hobart College campus at Mt Nelson, amongst 65 hectares of bushland. The centre is a joint initiative between the Department of Education, Greening Australia, CSIRO Education, Independent Schools Tasmania and the Catholic Education Office. Its shared vision is to be a hub for social and environmental impact, offering hands-on discovery science and reflection space for students and their families, educators and scientists.

The centre provides education programs primarily for kindergarten through year 12 students in general sciences, and specialist programs in biodiversity, ecology, economic and environmental sustainability, climate change and conservation. CSIRO Education and Greening Australia's Tasmanian operations are based in the centre and the facility is becoming an important educational hub for natural resource management in Tasmania.

The building has been designed and constructed to meet the six green star environmental rating system. It provides state-of-the-art examples in best practice green building and will inspire students, local businesses and community members. An independent assessment of the centre's construction and its operation over 20 years estimates its carbon emissions to be 99 per cent less than a conventional building of the same size. The centre clearly demonstrates how a combination of low- and high-tech components, along with appropriate user behaviours, can significantly reduce a building's ecological footprint.



Images: Greening Australia.

The new centre has been made possible through a unique collaboration between the primary partners and Greening Australia's corporate sponsors and philanthropists, including Hydro Tasmania and Southern Water. An Australian Government grant and a cash contribution by Greening Australia provided the nearly \$3 million for its construction.

Greening Australia has increased its focus in the formal education sector over the past two years to complement its environmental restoration and rehabilitation planning and on-ground activities. Greening Australia now runs several sustainability education programs in the thematic areas of water, catchment management, climate change and biodiversity.



Educating the community through sustainable business practice

Innovative business practices and business role-modelling play a part in both increasing business sustainability and community education. In 2012, Tassal published its first annual Sustainability Report. The report outlines the company's best-practice approach to sustainability in matters such as the production of seafood, environmental management, community engagement, animal welfare, safety and staff wellbeing. The report serves as a formal communication tool for third party sustainability certification such as the Global Aquaculture Alliance Best Aquaculture Practices and Aquaculture Stewardship Council and allows Tassal to benchmark with best practice internationally.

The benefits of sustainability reporting are many and varied. In preparing its sustainability strategies, Tassal spent considerable time speaking with and listening to stakeholders through market polls, various customer feedback mechanisms and formal and informal investor and supplier discussions to identify the issues most important to them. This level of engagement and transparency works both ways: by informing the business about stakeholder expectations and by raising stakeholder awareness of natural resource management issues around salmon farming and processing in Tasmania.

The decision by the company to focus on sustainability and transparency has led to improved relationships with both customers and potential critics. Tassal has achieved significant growth since 2010, while at the same time maintaining a strong commitment to the environment and sustainable operations.

The business's focus on sustainability has also had a positive impact on employees, who have become more aware of sustainable behaviour and sustainability issues, and their importance to the company's social licence to operate. Environmental and social impact considerations are being built into the company's policies and procedures and, through its staff, are also reflected in the ethos of the company. Employees have embraced this approach to such a degree they are initiating sustainability measures and their pride in the company has strengthened, translating into improved staff retention.



Image: R. Jupe.

The benefits of sustainability reporting are many and varied. In preparing its sustainability strategies, Tassal spent considerable time speaking with and listening to stakeholders.

Relationships created through the external (to Tassal) Sustainability Report Advisory Committee (SRAC) resulted in several unexpected positive outcomes. For example, the Tassal and WWF-Australia partnership for sustainable aquaculture is a direct result of the relationships forged through the SRAC. The partnership aims to achieve ecologically sustainable aquaculture production, safeguard valuable marine ecosystems, ensure the long-term viability of seafood supply and help the businesses and local communities that depend on a healthy marine environment.

Sustainability reporting provides a public forum in which to commit to sustainable activities such as phasing out copper-based anti-foulant and reducing interactions with wildlife. This public commitment is also effective in driving investment and behaviour change, in particular in the environmental and sustainability areas.

In short, focusing on sustainability in natural resource use makes good business sense, especially in Tasmania where the purity of the air, water, land and produce are all strongly valued.



Manage current and emerging threats

Southern Tasmania is one of the most environmentally diverse areas in Australia. The natural assets of the Region are intrinsically important and the cornerstone of economic prosperity, social cohesion and environmental amenity.

There are a number of existing and emerging threats to the state of the Region's natural resources, including those resulting from invasive species, cumulative land use and development, climate variability and the potential impacts of climate change. Since 2010, significant effort has been made to understand, mitigate and manage these threats.

Invasive species

Invasive species (both plants and animals) pose a significant threat to southern Tasmania's biodiversity and agricultural industries.

There are seven Weeds of National Significance and 123 plants that are significant weeds either known or with potential to occur in the Region. Weeds are subject to intense management across the Region by the State Government, councils, community groups, corporations such as Hydro Tasmania and Southern Water, and individual landowners and farmers. Activity is guided by the Southern Tasmanian Weed Strategy 2011–16 and the weed strategies of individual councils and organisations. Collaborative, coordinated action is essential to managing weeds across all land tenures.

No new weed species were detected in Tasmania in 2011–12 and one new infestation of Texas needle grass was discovered and controlled at Rokeby in 2010–11. There are a large number of introduced animals in the Region, including marine pests (such as seastars and urchins), birds, insects and more well-known mammal species. Feral cats, dogs, rabbits, goats and foxes are managed through management plans implemented by State Government and councils.

Threatened species

There are 683 listed threatened species in Tasmania, the distribution and ecology of many of which is not adequately known. In 2010–11, two species' status was upgraded, three species were downgraded (including two that were rediscovered after being presumed extinct) and one species was removed from listing. Five threatened species declined in status in 2011–12, and three plant species were taken off the threatened list because of taxonomic reclassification.



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Community groups and landowners have played a large part in significant projects to protect threatened species and habitats.

Species are threatened by a wide range of processes and often the incremental impacts of a variety of threats including vegetation clearing, impacts of pests, weeds and diseases, degradation of water systems, inappropriate use of fire, illegal harvesting and the impacts of stock. Increasingly, management needs for terrestrial threatened species are being identified and addressed through landscape-level planning and management.

Over 50 per cent of land in the Southern Region is protected either by legislation or by contract in conservation reserves, under covenant (see case study 2) or heritage regime. Where threatened species occur in these areas, they are protected through management plans.

Voluntary management plans that incorporate protection of threatened species have also been developed, such as for grazing on Hydro Tasmania managed lands at Great Lake and the Lagoon of Islands.

Councils play an important role in protecting threatened species by assessing development applications and imposing conditions on development to conserve and protect natural values. The Southern Tasmanian Councils Authority has taken the lead on developing a comprehensive Regional Land Use Strategy, on behalf of the Tasmanian Planning Commission, that will guide coordinated, consistent and contemporary planning schemes for all councils in the Region based on a common approach to natural resource use and protection.

Diseases such as phytophthora and chytrid fungus have been the focus of a major campaign on biosecurity in the Tasmanian Wilderness World Heritage Area, involving a coalition of partners including DPIPW, E

Forestry Tasmania, Hydro Tasmania, NRM South, and the Tasmanian Parks and Wildlife Service and supported by a range of recreational groups.

Community groups and landowners have also played a large part in significant projects to protect threatened species and habitats through activities including monitoring, restoration of habitat, revegetation, mapping and research.

Climate change

In 2010, the Strategy identified climate change as one of the three major emerging threats to natural resources in southern Tasmania. Significant progress has been made in understanding and planning for potential climate change impacts in the Region in 2010–12. Climate change will continue to provide multiple risks and opportunities across the Region. Since the release of the Strategy, a major research project of the Tasmanian Government (Department of Premier and Cabinet) and the University of Tasmania (Antarctic Climate and Ecosystems Cooperative Research Centre), *Climate Futures for Tasmania*, has provided a detailed and robust regional assessment of likely changes in weather under high and low emissions scenarios. This has fed into



the Southern Tasmanian Councils Authority's Regional Councils Climate Change Adaptation Project (see case study 5).

All Southern Region councils have developed, or are developing, corporate climate change adaptation plans and monitor and manage their own energy use. All councils in the Region lend out Home Energy Assessment Toolkits free of charge to help householders reduce their energy footprint and provide other assistance such as facilitating the bulk purchase of solar hot water for residents and supporting research and projects to assist residents meet climate change challenges. For example, the Southern Midlands Council participated in a project funded by Landcare Australia to assist the farming sector of the municipality to adapt to the predicted drier, warmer environment. Council provided information, hosted seminars and ran field days on themes such as water efficiency, soil carbon and pasture cropping.

DPIPWE works to improve the capacity of farmers and fishers to manage climate change through the South East Australian Climate Change Project, which includes modelling of climate change scenarios and case studies for key species (abalone, rock lobster, blue grenadier and snapper), development of communications and extension of the Redmap program (community reporting of species range extensions). Through collaboration with the Tasmanian Institute of Agriculture and the Tasmanian Climate Change Office, DPIPWE contributes to the development and delivery of information designed to support farmers to develop and implement long-term plans that will position them to better manage the opportunities and threats likely to result from climate change.

The Tasmanian Coastal Adaptation Decision Pathways (TCAP) project aimed to significantly improve the ability of Tasmanian coastal communities and decision-makers to adapt to climate change. This project was a partnership between the Local Government Association of Tasmania, Tasmanian Climate Change Office (Department of Premier and Cabinet), Tasmanian Planning Commission, and four Tasmanian councils, including Clarence City Council and Kingborough Council from the Southern Region. The project explored the types of practical options available to councils and communities when tackling the localised effects of climate change.

Climate change provides opportunities as well as challenges. With the introduction of a carbon price, property owners and investors are taking advantage of Greening Australia's Biodiverse Carbon Program, in which marginal cleared agricultural lands are planted with diverse regionally native trees and shrubs to restore diversity and create native habitat corridors. One such site is at Meadowbank, where thousands of trees have been planted, benefiting the landowner, investors and,



Above: Tasmanian tree frog (*Litoria burrowsae*). Image: S. Cashins.

importantly, the environment by providing naturally regenerating habitat for native wildlife, enhancing on-farm productivity and protecting catchments by improving water quality and reducing soil erosion.

Water quality and flows

Water in the Southern Region is used for drinking, hydroelectric energy generation, irrigation, recreation, and town water supply, supports important ecosystems and provides habitat for species. While many catchments in the Region are in good condition threats to water quality and environmental flows exist in some catchments. These include climate change, blue-green algal blooms, contaminants, land use, hydro power production, aquaculture and recreational use. All catchments in the Region are covered by catchment management plans and water management plans.

Significant work to manage water quality and availability has been undertaken by councils, Hydro Tasmania, Southern Water and community groups. Hydro Tasmania is the largest water manager in Australia and has strict management guidelines to ensure the sustainable and

equitable use of water. In projects aimed at improving water quality and biodiversity values, Hydro Tasmania works to rehabilitate the Lagoon of Islands, cooperatively manage grazing in water catchments and monitor biodiversity values on Hydro-managed land and water.

Councils are at the forefront of harvesting and treating stormwater for re-use. Increasingly, councils are using water sensitive urban design principles to increase water retention and replenish groundwater supplies. Clarence City Council, in partnership with Warrane Polytechnic, the Tranmere/Clarence Plains Land and Coastcare Group and the Derwent Estuary Program, has developed water sensitive urban design projects on the Clarence Plains Rivulet and at Faggs Gully Creek, Geilston Bay. These projects aim to reduce erosion from storm events and treat stormwater through a series of rock-lined areas and pools where both mechanical and biological filtration occurs.

The \$20 million Derwent Park re-use project has been funded as a joint initiative of the Glenorchy City Council and the Australian Government's Water for the Future initiative through the National Urban Water and Desalination Plan. The project will capture and treat stormwater from the heavily urbanised Derwent Park catchment which will then be sold to the Nyrstar Hobart smelter to replace some of the potable water currently used for industrial processes. Some of the recycled water will also be used to irrigate local sports grounds and parks. In addition to the estimated 80 tonnes of stormwater pollutants removed by this system each year, the project will alleviate local flooding of roads, businesses and households.

Community groups have also been active throughout the Region undertaking important on-ground activities clearing weeds around creeks, replanting riparian vegetation and restoring habitat.

Soil

Healthy soil is fundamental to ecosystem function, landscape regeneration and sustainable food production. Soil erosion, soil structural decline and organic matter decline under cropping have been recognised as the major soil management problems for the State.

In the Southern Region, the Tasmanian Government's Wealth from Water program provided irrigators with information on soil, climate and enterprise suitability to help make informed business decisions. The program focused on 25 000 hectares of the Midlands Irrigation Scheme around Tunbridge, Woodbury, York Plains and Andover in the Southern Midlands. New digital soil attribute mapping was combined with local climate data and enterprise rules (i.e. the optimal climate and landscape characteristics for a crop) to produce enterprise suitability maps. The Tasmanian Institute of Agriculture worked with farmers, agricultural advisers, service providers, industry groups and natural resource

management groups to deliver targeted extension activities and information on irrigation technology and management, including information about managing the impacts of irrigation on soil texture and appropriate amounts of water in soil.

In 2010–12 the Department of Primary Industries, Parks, Water and Environment was active in monitoring soil condition to:

- identify and prioritise soils and areas most at risk from declining soil health and erosion
- develop and test a methodology to allow the evaluation and future monitoring of soil condition
- provide baseline soil condition data for selected soils to facilitate reporting on soil condition, land use impacts and soil condition target setting
- develop critical soil condition thresholds.

During 2010–12, NRM South's Living Soils program provided farmers with practical information about soil health and supported the establishment of farm trials of low-input biological farming techniques aimed at improving soil and pasture health.

Future focus

There has been evidence of increasing strategic prioritisation of threat management. This is occurring in several ways, through the formation of an 'Invasive Species' Branch at DPIPWE in 2012, an increased focus on biosecurity and a whole-of-system approach – including landscape scale biodiversity planning – to address threats.

The first two years of the Strategy have seen excellent progress in research on predicted local impacts of climate change through the Tasmanian Climate Futures Project. Councils have responded swiftly by working together on a regional climate adaptation strategy as well as individual climate adaptation plans for each local government area. Corporate natural resource managers have clearly documented strategies and plans for the future under changing climatic conditions, however there are indications that the general public, while aware of the global issues, are still complacent about the potential local impacts. Much work remains to raise community awareness of the local risks and threats that may be expected from climate change and to support communities in adapting to those changes.



Councils at forefront of climate change adaptation



Image: N. Fitzgerald.

Councils are the closest level of government to the community. They have a critical role to work with and assist communities to adapt to the impacts of climate change at both a local and regional scale.

The Southern Tasmanian Councils Authority (STCA), with support from Hobart City Council, established the Regional Climate Change Initiative (RCCI) in 2009 to provide a source of climate change information and advice to its 12 member councils that was independent, objective, non-partisan, science-based and pragmatic. After receiving federal funding, STCA commenced in 2011 a 16 month Regional Councils Climate Change Adaptation Project, delivered in partnership with the Local Government Association of Tasmania and the Tasmanian Climate Change Office. The project aimed to increase the capability and resilience of southern Tasmanian councils to manage the risks of climate change at the corporate and regional level through the development of:

- Council (corporate) Climate Change Adaptation Plans
- a Regional Climate Change Adaptation Strategy
- a Climate Change Adaptation Toolkit for review of councils' adaptation plans.

Coordination of the program by STCA ensured that climate action was coordinated across the Region, delivered a consistent approach and developed the capacity of all 12 councils to adapt to climate change.

Climate change impacts such as sea level rise, increased temperature, bushfire, storm, flood and drought events, along with changes in the local climate will be profoundly experienced both locally and across municipal boundaries.

Climate change scenarios for the Region predict that there will be:

- an increase in annual temperature of 3°C experienced in the west coast of the Southern Region, the Derwent Valley, Huon and Central Highlands municipalities
- more heat waves (3 or more days above 28°C) in the Derwent Valley area
- an overall increase in warm spells across the Region
- moderate increases in rainfall in the East Coast, Tasman and Greater Hobart areas
- decreases by 6–10% in rainfall in the northern Central Highlands
- changes in the seasonality of rainfall with the inland areas of the Southern Region experiencing higher rainfall over winter and lower rainfall throughout summer and the northern Central Highlands experiencing decreased rainfall in all seasons.

The STCA Regional Climate Change Initiative works to build the capacity of councils and their communities to act, adapt and respond to climate change as well as identifying and implementing regional greenhouse gas reduction, adaptation, offset and behaviour-change projects.

Regional climate action by councils will enable them to provide a consistent and integrated response to climate adaptation in their communities and across the Region. In addition, collaboration and cooperation between councils enables them to leverage resources, share ideas, magnify action and advocacy and avoid duplication in the face of climate change.

CASE STUDY 6

Saving the devil from extinction

The iconic Tasmanian devil is at risk of extinction in the wild, with populations down by over 90 per cent in some areas. The devastation caused by the transmissible cancer, Devil Facial Tumour Disease (DFTD), is a difficult and complex problem. The disease is invariably fatal; as yet there is no cure and no way of diagnosing the disease before it affects the animals. However, despite these formidable challenges, considerable progress has been made in managing the impact of the disease on Tasmanian devils by the widely acclaimed Save the Tasmanian Devil Program.

The Program, which is jointly funded by the Tasmanian and Australian Governments, is managed by DPIPWE in cooperation with a wide range of national and international research collaborators, and wildlife parks and zoos. The success of the program to date can be attributed to its multi-pronged management and research strategy as well as an extremely effective public awareness and fundraising campaign. The Program's objectives are to:

- maintain the genetic diversity of the Tasmanian devil population
- maintain the Tasmanian devil population in the wild
- manage the ecological impacts of a reduced Tasmanian devil population across its natural range.

To this end, the Program and its partners focus on:

- Monitoring wild populations of devils to clarify disease distribution and impacts and to help determine conservation strategies.
- Using genetic techniques to characterise the disease and investigate potential field techniques to diagnose the disease in apparently healthy animals.
- Managing wild populations by investigating methods for managing the impact of the disease in the wild. An initial attempt to halt the disease by removing diseased animals from an isolated population was unsuccessful.



Image: DPIPWE.

The disease is invariably fatal, there is no cure and no way of diagnosing the disease before it affects the animals.

- Establishing an insurance population of healthy and genetically robust devils which may be re-introduced to the wild. The insurance population is managed by the Zoo and Aquarium Association and involves over 20 zoos and wildlife parks on both the Australian mainland and in Tasmania. By June 2012, the program had reached the goal of 500 disease-free Tasmanian devils representing over 98 per cent of the species genetic diversity.
- Educating the public about devils and the disease. The program developed a communications strategy which includes the production of education and information materials and maintains a presence on the internet and social media such as Facebook.
- Raising money through the Save the Tasmanian Devil Appeal. All funds raised by the appeal go to the educational and publicity activities of the appeal and research and management activities seeking a long-term solution to Devil Facial Tumour Disease with the aim of keeping Tasmanian devil populations sustainable in the wild.



Measure and report changes in natural resource condition

A review of the 2005 Strategy and stakeholder consultation during the development of the current Strategy highlighted a deficiency in the level of quantitative information about resource condition.

The Strategy identified a need to aggregate data and develop metrics that would support periodic and defensible reporting of changes in resource condition. In 2010–12 there has been substantial progress against this need but further attention is warranted.

Natural resource monitoring

Natural resource monitoring ranges in scope from site-to catchment-scale, and is conducted by community groups, government agencies, businesses and coordinated multi-partner groups.

Water resources in the Region were intensively monitored by multiple agencies. Hydro Tasmania monitored water levels and flows and lake levels; the partners in the Derwent Estuary Program, including coastal councils, monitored water quality in the estuary; and Southern Water monitored the quality of raw water, drinking water and wastewater, as well as the quality of receiving waters after sewage treatment. Yet a review of the greater Derwent catchment in 2011–12 found that data were incomplete and disparate and that there was a need to better coordinate monitoring and evaluation. The primary recommendation arising from the review was that a long-term, broad-scale monitoring program be instigated for the purpose of assessing health of the Derwent catchment and identifying emerging threats. A

multi-stakeholder approach, modelled on the Derwent Estuary Program (see case study 8), would provide an appropriate template for best-practice coordinated monitoring, data management, sharing and review.

The coordinated, extensive and comparatively well-resourced monitoring of Tasmanian devil abundance and distribution of Devil Facial Tumour Disease (see case study 6) has demonstrated the value of consistent repeated monitoring for the conservation of threatened species. It also demonstrates that the level of monitoring effort should be commensurate with the degree of risk, however too often such monitoring only commences after a species population has collapsed.

A project to assess the effectiveness of new biosecurity measures in the Tasmanian Wilderness World Heritage Area has established monitoring of the Tasmanian tree frog and the Tasmanian froglet populations as well as the presence of chytrid frog disease in sites within the wilderness area. Site-specific monitoring for many other species over the last two years has added important information about trends in abundance of such varied species as Forty-spotted pardalotes, eagles, Miena cider gums, handfish and penguins. However much of the data was not collected consistently nor comprehensively and conclusions about the status, distribution and ecology of some threatened species which are based on localised monitoring must be qualified.

The Tasmanian Government has taken a lead role in developing and maintaining systems to support monitoring of natural resource condition. Many organisations and projects have contributed data on threatened species to the Natural Values Atlas maintained by DPIPWE and use the Department's Conservation Information System to inform their planning (see case study 7).

Volunteers have proven to be an important hidden resource for natural resource monitoring. The Tasmanian Shoreline Monitoring and Archiving (TASMARC) Project aims to redress the lack of knowledge of the potential effects of sea level rise and storms on vulnerable coastlines. Surveys have been done by volunteers and council officers every two to three months since 2005. Fifteen Southern beaches were re-surveyed during 2010–12 providing important updates on changes in beach profile since baselines were established by surveys undertaken between 2005 and 2007.

Natural resource condition

The Strategy emphasises the importance of establishing a good baseline from which to measure changes. Condition reports have been undertaken that range in scale from catchment summaries, reporting on natural values, threats and Indigenous heritage in whole catchments, to vegetation condition reports in areas subject to council fire hazard reduction burns, and individual reserves on both public and private land.

In 2011, Kingborough Council partnered with the Derwent Estuary Program, NRM South, Southern Water, Huon Valley Council and Tassal to initiate the D'Entrecasteaux Channel and Lower Huon Estuary project in order to revisit and update the 1999 State of the D'Entrecasteaux Channel report. The project has undertaken a comprehensive desktop review of recent environmental reports to improve understanding of the condition of the waterways. The broader aim is to establish a long-term monitoring network and develop a management plan for the D'Entrecasteaux Channel and Lower Huon Estuary.

Individual landholders play an important part in documenting resource condition on their properties. Murrayfield, a sheep station on Bruny Island run by the Indigenous Land Corporation, monitors soil condition, has published a book on birds found on the station and has undertaken an assessment of the condition of Saltwater Creek which runs through the property. The station is also active in promoting research into Forty-spotted pardalotes, eagles and white gums. Recording the results of these initiatives provides important local baselines for resource condition.



Similarly, farmers participating in Greening Australia's biodiverse carbon renewal research and hosting field sites for experiments in different grazing management techniques all provide important information on soil condition that can be built up over time to develop a larger spatial picture of the condition of agricultural soils in the Region.

Future focus

The 2009 Tasmanian State of the Environment report identified issues relating to the coordination and quality of monitoring and evaluation efforts as well as information sharing and data accessibility among the organisations and individuals doing the data collection. Although good progress has been made to advance collaboration in data collection and management and to improve delivery and accessibility of comprehensive data on natural resources, continued efforts are warranted to facilitate better strategic decision-making and coordination of limited resources.

Addressing the enduring challenge of adequate information for assessing changes in resource condition will take concerted effort over a time scale of five to 10 years. Harnessing new technologies such as remote sensing through the Sense-T program will assist in filling the gaps.

Work is currently underway to develop a project proposal to better coordinate and maintain systems to provide marine values mapping around Tasmania through a partnership between the University of Tasmania's Institute of Marine and Antarctic Studies, the Department of Primary Industries, Parks, Water and Environment and NRM South.



Information sources for natural resource management



Image: N. Fitzgerald.

Finding and synthesising information to plan for conservation at a landscape scale has been significantly improved with the development and delivery of DPIPWE's Conservation Information System (CIS). The system utilises an easy-to-use, web-based interface to organise, analyse and display layers of spatial information that are central to conservation planning work undertaken within the Department and by other stakeholders such as local government and NRM professionals.

The CIS introduces two major innovations for conservation planning:

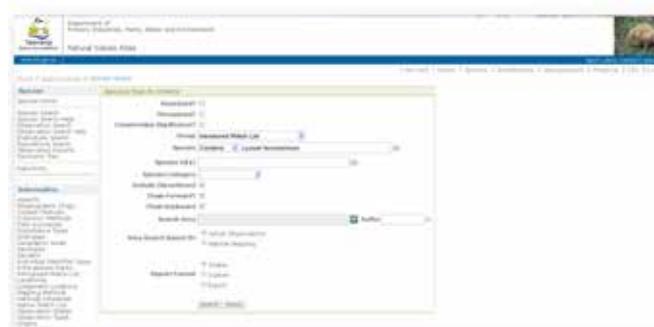
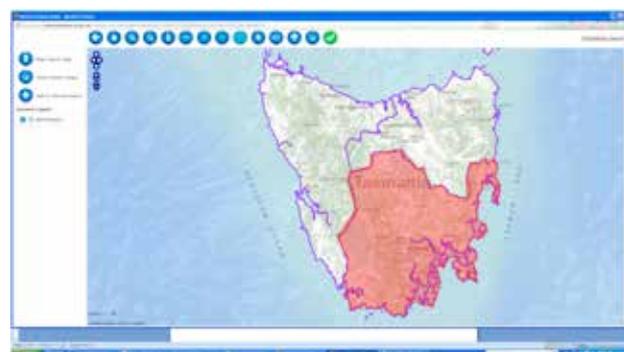
- It provides a single point of access for all the information related to key spatial layers required for conservation planning.
- It allows complex landscape analysis of multiple spatial layers by non-GIS users, who can define analyses to answer their own priorities and questions and also allows download of GIS data for direct manipulation by users.

The CIS currently contains seven value-added datasets that address key conservation planning issues related to the comprehensiveness and adequacy of the National Reserve System in Tasmania and assessing resilience of natural resources to climate change.

Key to the success of the Conservation Information System is its relevance to multiple stakeholders. Organisations such as the Parks and Wildlife Service and the Tasmanian Land Conservancy are able to use the CIS to prioritise their work effort and to make investment decisions.

A key strength of the CIS lies in its ability to evolve in response to the needs of the NRM community and already the developers have responded to requests for value-added layers showing key threatened species and threatened species habitats by developing a layer for the irreplaceability of priority plants.

The CIS is delivered through the Natural Values Atlas (NVA), which includes information about over 20 000 species of Tasmanian plants and animals, the distribution



Above: The DPIPWE Conservation Information System web interface.

of Tasmania's vegetation types and non-living natural resources. The application maintains species taxonomy, attributes and conservation values and provides access to images, related websites and management documents such as listing statements and recovery plans. Data are contributed by a variety of custodians, including the general public, and also feeds into Tasmania's State of the Environment and State of the Forests reporting.

The CIS, NVA and Land Information System Tasmania (the LIST) are key resources supporting natural resource management in Tasmania and are essential to delivering high-quality information that can be used for conservation decision-making, resource allocation and business development. Importantly, they also act as a curated repository of baseline information about natural resource condition in Tasmania.



Derwent Estuary Program



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Image: Derwent Estuary Program.

In 2010 the Derwent Estuary Program was awarded the prestigious national Riverprize for excellence in river management and monitoring.

Effective natural resource management requires an ongoing and reliable source of environmental data. The Derwent Estuary Program, a regional partnership incorporating the State Government, six councils, five industry partners, scientists from three research institutions and numerous community groups, has established a cooperative monitoring program among its partners and collaborators which has brought together a number of formerly independent monitoring programs. The benefits for the estuary and the partners are manifest. Not only are data consistent, comparable, coordinated and reliable, but the partners and the general community also gain a consolidated overview of the state of the estuary and the external factors impacting on individual sites, allowing for better management of complex and widespread natural resource issues.

The Derwent Estuary Program and its partners publish an annual report card with details of:

- weekly recreational water quality monitoring during summer
- monthly whole-of-estuary water quality monitoring
- biological surveys (little penguins and spotted handfish)
- heavy metal concentrations in fish and shellfish
- control and surveying of weeds including rice grass and karamu.

These results are used to support management decisions and raise awareness of issues in the estuary. In 2010 the Derwent Estuary Program was awarded the prestigious national *Riverprize* for excellence in river management and monitoring.

Over 40 per cent of Tasmania's population lives adjacent to the Derwent estuary, using the estuarine waters for recreation, boating, fishing, marine transport and industry. Waters further upstream supply most of the drinking water for Hobart and surrounds, and are a major source of hydroelectric power. Although there have been significant improvements in the treatment of sewage, industrial wastes and stormwater over the past decade, the Derwent remains a significantly impaired estuary. The strategic and coordinated management approach across all levels of government, industry and the community as embodied in the Derwent Estuary Program will continue to be a strong driver for achieving a cleaner and healthier estuary in the future.



Increase stakeholders' capacity to use the Region's natural resources wisely

The capacity to use natural resources wisely depends on stakeholders having access to information and opportunity to build knowledge and skills to protect and realise the full benefits of sustainable use of these assets.

Since 2010, there have been collective efforts by government and non-government organisations to increase capacity for natural resource management within and among organisations as well as in the wider community. In the Southern Region, we are fortunate to have a highly skilled and knowledgeable population in matters concerning NRM and opportunities to share this and new knowledge are increasing across the Region.

Strategies and plans coordinate action

One indicator of regional capacity is the formation of well developed strategies and management plans. Strategies and plans should incorporate the best available knowledge to coordinate best-practice management activity.

The period 2010–12 saw the development of a number of key strategic documents guiding natural resource management activity in the Southern Region. These included the Southern Tasmanian Weed Strategy 2011–16 and the Southern Tasmanian Regional Land Use Strategy. Councils also maintained and updated vegetation

management plans, weed management plans, bushfire management plans and catchment management plans, all of which represent a valuable store of information about a diversity of natural resource management issues to guide stakeholders' actions.

Extension officers act as conduits for information and networking

Local natural resource management extension officers are proving to be highly effective in transferring information on new sustainable practices to landholders and communities across the Region, as well as gaining a closer understanding of local community needs. Five local facilitators supported by NRM South and a number of councils met a growing demand for services in 2010–12, providing training and support to individuals and community groups across southern Tasmania, as well as supporting access to funding resources (see case study 9).



Image: N. Fitzgerald.

Landcare Tasmania and the Southern Coastcare Association of Tasmania are both small, largely voluntary organisations that act as conduits for information and knowledge about NRM issues and work to coordinate and train large numbers of volunteers in natural resource protection and management. In 2010–12 they both ran a variety of training courses, networking events and other capacity-raising activities such as small grant programs with minimal resources but with impressive impact (see case study 10).

Financial security is a key issue for these community-based organisations as they are predominantly financed through short-term grants, which creates significant challenges for developing and managing long-term NRM programs and projects.

Training, field days and workshops teach practical skills

Workshops and field days are popular and effective ways to increase both engagement in, and knowledge about, practical natural resource management. Hundreds of training workshops and field days have been run by various organisations in the Region over the last two years. Training has been delivered on a vast array of issues including weed identification, weed hygiene, soil health, grasslands and grazing management, pasture cropping, compost teas, bushcare policy and procedures, first aid, chemical handling, brushcutting, chainsaw use, home energy efficiency, browsing animal control, use of the Natural Values Atlas, animal welfare standards, biosecurity, and action planning. This extension work has delivered natural resource management skills and knowledge to thousands of landholders, farmers, care groups, work for the dole participants, prison inmates and members of the broader community.

School programs such as Water Warriors and Water for Life, bush classrooms and school participation in activities such as tree planting on National Tree Day, cleaning up rubbish on Keep Australia Clean Day, and coastcare activities in National Coastcare Week are critically important in both raising the capacity of the next generation for wise use of natural resources and

influencing behaviour of the parents and friends of participants.

In-house training has also been conducted to develop the knowledge and capacity of staff in councils, Hydro Tasmania, Southern Water, Forestry Tasmania and DPIPW. Topics included chemical handling, roadside vegetation management, recycling, weed identification, control and hygiene, managing trees on development sites, holistic management, mechanisms to minimise the spread of pathogens in the World Heritage Area, environmental dispute resolution, climate change, environmental plans and procedures, environmental management system awareness and risk management.

Other initiatives to raise capacity in 2010–12 included participation in conferences and formal and informal networking opportunities, secondments, seminars and co-location of employees (such as embedding extension officers in council offices; see case study 9). Mentoring and partnerships were a key means of transferring skills and knowledge among organisations. One example is Greening Australia's partnerships with Hydro Tasmania, Southern Water, Transend and Hobart Quarries, which result in both parties learning about best practice natural resource management as well as constraints to effective implementation. Similarly, the experience gained from the Derwent Estuary Program in establishing cooperative monitoring and a shared management vision is now being applied to the D'Entrecasteaux Channel and Lower Huon Estuary project.

Future focus

There has been a significant investment in capacity building for those involved in NRM in southern Tasmania and this warrants ongoing effort. An ongoing investment in facilitators and extension officers is vital for continued progress. Collaborative initiatives can assist to meet these needs, while also maximising the efficient use of resources.

Local networks key to landholder engagement

Local networks and trusting relationships are the foundation to building landholder capacity in natural resource management. For this reason, over the past four years NRM South has invested in a network of facilitators located across the Region, a move which is delivering tangible positive results.

Supported through the Australian Government's Caring for our Country, the network of five Local Area Facilitators undertook a vast range of activities in 2010–12, ranging from supporting farmer networking groups, to organising workshops, coordinating on-ground works to protect threatened vegetation communities and encouraging landholders to adopt practice change. They are well positioned to better understand landholders' needs and to be able to identify farmer "champions" who are leading innovation in sustainable land management in the Region. The facilitators work closely with NRM South's Regional Landcare Facilitator to deliver information, training and support in new sustainable land management techniques, such as improving pasture and soil health and reducing input costs.

The facilitators' connection with local communities is enhanced by being hosted in local government or catchment management groups. In many cases the roles are co-funded with local government, which allows leveraging of investment and the development of greater efficiencies in delivery through collaboration with local government officers, state government and other natural resource management organisations working in the community.

During 2010–12 NRM South had Local Area Facilitators based at:

- Glamorgan Spring Bay Council
- Kingborough Council
- Huon Valley Council
- Sorell Council
- Derwent Catchment NRM.



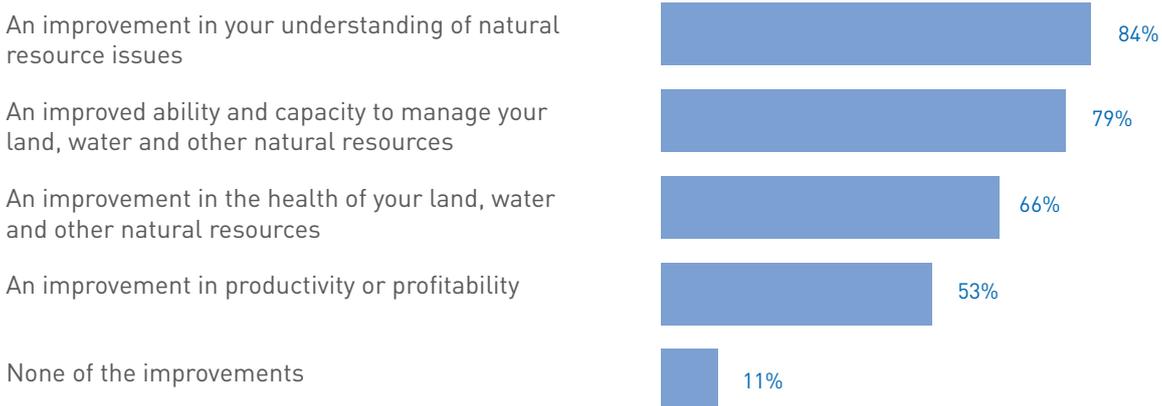
The key to the program's success is the facilitators' focus on building long-term, trusted relationships in local communities and by providing ongoing support through one-on-one site visits, leading or participating in farmer groups as well as providing information tools and referral services. NRM South's facilitators have also supported farmers to undertake low-risk trials of new land management practices. With support and guidance, willing participants learn new methods and obtain evidence to help them decide whether to adopt new practices on their land.

From 2010–12, NRM South worked with hundreds of landholders to improve the sustainable management of close to 28 000 hectares of land in the Region. A survey of 150 rural landholders in mid-2011 highlighted the significant impact and benefit that farmers perceived from the Local Area Facilitator extension model, allied with the Regional Landcare Facilitator program. More than three-quarters of those who had worked with NRM South said they had greater capacity to manage their natural resources and more than half said there had been an improvement in productivity or profitability. Furthermore, four out of every five landholders working with NRM South reported that they had introduced new practices or invested additional resources in their property as a result of their involvement.



Landholder engagement and capacity building

Question: Has your involvement with NRM South led to improved understanding of NRM issues, improved capacity to manage your natural resources and improved health of natural resources on your property?



Landholders investing or innovating

Question: Has any information from NRM South or anything else NRM South has done prompted you to invest additional resources and/or introduce new practices into improving your property?



*"Engaged" is defined as having attended an NRM South workshop and/or working with Local Area Facilitators, the Regional Landcare Facilitator or having site visits from NRM South expert advisers.



Flexible coastal community support



Above: Volunteers assisting Bellerive Bluff Coastcare Group with foreshore restoration work. Image: SCAT.

Few regions have coastlines as complex and diverse as Tasmania's. Our coasts support diverse communities and industries and are subject to a range of environmental issues. As such, it is not surprising that the 45 local community coastcare groups in southern Tasmania have widely varying needs. In order to be effective, support for these groups must balance their needs with the needs of the coast as a whole and sometimes the best way to identify the most appropriate form of support to offer is also the simplest – ask them what they need.

This is the guiding principle of the Southern Coastcare Association of Tasmania (SCAT). This regional group is run by volunteers for volunteers with the aim of achieving successful coastal management outcomes. They know that support comes in many forms, can address diverse activities and interests and must respond to emerging issues.

It is not possible to know how to support a group without first knowing what they value and what the barriers to their participation or success are. Some groups need a bit of help sourcing information or liaising with stakeholders, others might simply require equipment or some extra volunteers to get the job done, still others seek assistance to review their priorities or provide external confirmation of what they are already doing brilliantly.

Supporting a group in pursuit of their own interests and objectives doesn't mean that regional, state or national priorities miss out. SCAT provides ongoing support to sustain the energy of each group to work on what is important to them. In this way, SCAT has ensured that teams of local volunteers are willing and able to participate in broader priorities and opportunities as they arise.

In partnership with NRM South, SCAT brought coastcare volunteers and other coastal stakeholders from across southern Tasmania together for Coastcare Week 2012 to learn about coastal processes and the impending impacts of sea-level rise as they walked along an eroded shoreline with a renowned coastal expert.

SCAT also worked with the University of Tasmania to support Kingborough Council in a trial study engaging the local coastal community to help identify threats and impacts of sea-level rise and storm surges on their local community.

At Rokey saltmarsh and Pipe Clay Lagoon, SCAT supported the local care groups to host new volunteers from other community groups, providing an opportunity for the local volunteers to share their passion for coastcare with a new audience and get some extra help on the ground too.

Coastcare group aspirations often align with regional and national priorities and SCAT has found that a little guidance can sometimes help them to recognise this or to seek new opportunities by linking in with other stakeholders.

The Wildcare Deslacs group covering Cape Deslacs Nature Reserve and Pipeclay Lagoon on South Arm chose to work on Spanish heath (*Erica lusitanica*), a weed that was not only locally important to control, but also a regional priority. Although this was a daunting task for a small coastcare group, SCAT's ability to bring private and government landholders together resulted in the funding of a 10-year weed management plan and provided invaluable momentum to the group's control program.

Elizabeth Shannon from Wildcare Deslacs said:

"SCAT has been very supportive and very strong about getting the group to define its own priorities. We are pretty clear about them, so this has worked well for us. It was a good strategy to ask us what we needed help with, as most things we can manage, but the Spanish heath is way beyond our direct control and people felt very discouraged about it. This has been a big morale booster!"

SCAT, as a community group working for other community groups, will always start its support by asking 'what help do you need?'



Improving monitoring and reporting against the Strategy

The Natural Resource Management Strategy for Southern Tasmania 2010–15 includes a commitment to report on implementation of the Strategy every two years. This first report, covering 2010–12, has identified a number of areas for further refinement to improve the mechanisms and content of reporting.

1. Develop a consistent reporting framework across the natural resource management sector, including agreement on a definition of what activities constitute natural resource management. The framework should identify a process, timelines and indicators to clarify how implementation of the Strategy will be measured.
2. Support the natural resource management community to establish record-keeping systems that reduce the impost of collating information to report against the Strategy.
3. Improve management of data about natural resource management activities. Establish coordinated, centralised data storage with adequate metadata that allows members of the natural resource management community to pull up maps of where activity has happened, what the activities targeted and the results of those activities. With appropriate processes, this could streamline annual reporting for a wide variety of organisations, and would substantially improve efficiency in producing the next report on implementation of the Strategy.
4. Establish a means of coordinating assessments of community awareness of natural resource management issues and the effectiveness of communication activities about natural resource management.



Image: Glamorgan Spring Bay Council

Appropriate processes could streamline annual reporting and substantially improve efficiency in producing the next report.

5. Improve reporting on work undertaken by and with the Aboriginal community to raise awareness of cultural values and indigenous engagement in natural resource management. This is a gap in this report.
6. Expand the use of best practice for recording volunteer and in-kind contributions in the community NRM sector to develop more accurate assessments of returns on investment in natural resource management.

NRM South thanks the following organisations for contributing to this report





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