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The Watershed Torbay experience: Community, change, collaboration and celebration

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Summary

- Watershed Torbay was established in 2001 as a national demonstration project to undertake whole of catchment waterways restoration. Funded by Land & Water Australia through the former National Rivers Consortium, the aim was to further develop and test approaches to waterways management at a whole catchment, rather than river reach scale, and to share the learnings and successes throughout Australia.
- Watershed Torbay adopted a number of key approaches to ensure its successful development and implementation. These included action learning, civic-science, social marketing, 'best bet' on-ground works in parallel with research and planning, and using a learning log to capture learnings and demonstrate adaptive approaches.
- This Technical Guideline presents reflections from key participants — government agencies, researchers, representatives from different sectors of the local community, and the staff working on Watershed Torbay. This information will demonstrate how the Watershed Torbay approach has substantially equipped the community to embark on an ambitious restoration project, as well as providing valuable learnings for others involved in natural resources management about how to successfully engage local communities.
- The development of the Torbay Catchment Restoration Plan is the key outcome from the project. Ultimately, the success of this project will not be fully demonstrated until the Catchment Restoration Plan has been implemented, and improvements are made in the state of the catchment.
- In recognition of the achievements of Watershed Torbay, it was awarded the Thiess National River*prize* in 2006.

Cover image: In 2005, participants at a natural resources management conference visited Lake Powell on a field trip.

Background

The overall aim of Watershed Torbay was to demonstrate the benefits to the environment and the community of river restoration at the catchment, rather than river reach scale, and to share these learnings nationally. In particular, the project sought to:

- develop agreed management objectives, with all stakeholders, for the catchment and receiving water bodies;
- improve understanding about the state of the catchment, sources of nutrients, and management of receiving water bodies;
- identify the ecological water requirements of waterways and wetlands;
- prepare an integrated drainage management plan for the declared drainage district;
- prepare a whole of catchment river restoration plan;
- implement restoration activities throughout the whole catchment; and
- implement a comprehensive monitoring and evaluation program.

Watershed Torbay was funded for four years, subsequently extended for a further year, by the National Rivers Consortium (see box at right), to a total of $500,000. Other partners included the Western Australian Department of Water, Water Corporation, and the Western Australian Department of Agriculture and Food, with a collective cash and in-kind contribution of $900,000, giving a total project value of $1.4 million. There was also a substantial in-kind contributions from members of the community and the Torbay Catchment Group, with other contributions from Green Skills Inc. and the Green Corps program.

School children on a macroinvertebrate sampling excursion to Lake Powell.

The National Rivers Consortium

Land & Water Australia managed the National Rivers Consortium, a group of people representing organisations with an interest in river management. The National Rivers Consortium was interested in developing and testing new methods to help communities in river management. This involved funding a number of whole-of-catchment river restoration and management projects like Watershed Torbay. While there had previously been many river restoration and management projects around Australia, the majority dealt only with a particular reach of a river system and with one or two issues, such as riparian revegetation, replacement of large woody debris, removing exotics or managing algae. The Consortium believed it was important that some projects be established to look at all issues in the management of an entire river system, and to engage the whole catchment community.

The Consortium was also interested to include an action-learning approach to the long-term goals of river restoration and management, with one of the major aims to record the process and share the results to help give other groups the confidence to act. It was important that people see, and understand, that investments in river restoration and management at the whole-of-catchment scale, are worthwhile and can make real differences in the long-term health of our river systems.

The National Rivers Consortium was disbanded in 2006.

Torbay Catchment background

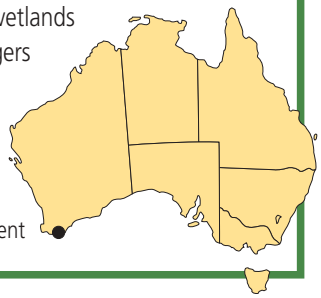
Torbay is located on the south coast of Western Australia, between the towns of Albany and Denmark. It is a unique catchment with a diversity of land uses. Torbay is highly valued by the local community but faces a number of difficult management issues, including the highest frequency of toxic algal blooms of any waterway in Western Australia. Torbay is adjacent to the expanding city of Albany with a population of 30,000. The catchment provides ecosystem services to the city through disposal of all wastewater, and is the next scheduled public drinking water supply source for Albany (Marbellup Brook).

It is a small catchment of 30,000 hectares, with about 560 landholdings, and stretches from Redmond, 30 kilometres inland through to the Southern Ocean. There is no town in the Torbay catchment, and the community identifies with three small localities, centred around community halls and local shops. About 30% of landholders live in these three localities. The remaining landholders have either lifestyle blocks or farming enterprises, primarily beef, with a few specialty horticulture enterprises, several dairies/piggeries and commercial tree plantations.

Most landholdings are less than 200 hectares in size. Many landholders (almost 80%) rely on off-farm jobs to enhance their incomes. Bureau of Statistics and Census information shows that average income levels in the area are some of the lowest in Australia.

The catchment has outstanding coastal landscapes including West Cape Howe National Park. Three major wetlands, Lake Powell, Lake Manarup and Torbay Inlet, receive water from the catchment, and have high conservation and local values. Lake Powell is an A class nature reserve on the national register of wetlands for its importance to wading birds. Approximately 33% of the catchment's native vegetation remains intact, with the majority in moderate to excellent condition.

The lower part of the catchment has been artificially drained to manage flooding through a network of deep drains operated and managed by the WA Water Corporation. This deep drainage, initiated at the turn of the 20th century, facilitates the export of water and nutrients to the receiving wetlands and Torbay estuary, and triggers the ongoing algal bloom cycle experienced in these water bodies.



Torbay Catchment

Contractually, delivery of the project was the responsibility of the Western Australian Department of Water, as Principle Investigator, with formal contractual commitment of resources by a number of other WA Government agencies (Water Corporation and the Department of Agriculture and Food). The contract required regular project reporting and the delivery of a number of milestones, in return for funding instalments through the life of the project. These contractual arrangements were largely invisible to project participants, and it was the local partnership arrangements that underpinned its success. These arrangements consisted of:

- *A project steering committee*: comprising representatives of key stakeholders, particularly local community representatives and members of the Torbay Catchment Group, and initially chaired by an independent chairman. The steering committee had carriage for decision making on the project.
- *A technical advisory group*: comprising scientists and managers, with community oversight.
- *A project management team*: comprising the chair of the steering committee, the project manager, communications coordinator, and catchment support officer, responsible for coordination and delivery.

The Torbay Catchment Group continued to focus on implementation of projects at the same time Watershed Torbay was undertaken. Involvement in, and endorsement of the project by the Torbay Catchment Group was critical, as it was this group that would ultimately be responsible for implementing the Catchment Restoration Plan, a key output of Watershed Torbay. Those involved recognised that short life span projects such as Watershed Torbay needed to be embedded in strong ongoing governance structures, otherwise they run the risk of findings never being implemented.

A local non-government organisation, Green Skills Inc., employed the communications coordinator Louise Duxbury, and this was a critical element for success. Louise brought the consultation and communications expertise to the project, as well as ensuring governance arrangements remained stable and adhered to by all involved. The position was also critical in providing an "honest broker", to help establish relationships between government and community, and resolve issues as they arose, something that was particularly important in the early days of the project.

In awarding the National River*prize* 2006 to Watershed Torbay, judges from the International River Foundation commented on the project partnership and governance arrangements, pointing to the government, non-government and community based partnership as the basis for success of the project.

Project philosophy — responding to community concerns

As can be seen from the list in the box on the opposite page, the local community had wide ranging issues to consider, from expanding blue gum plantations, through to urbanisation and algal blooms. Although

Photo Simon Neville.

The receiving water bodies of the Torbay catchment — Lake Powell, Lake Manarup and the Torbay Inlet with channel to the Southern Ocean.

the project could not 'solve' all of these concerns, it was recognised by the project team that significant opportunities existed to raise awareness and understanding about why some of these issues had arisen, and seek involvement of the local community in developing a Catchment Restoration Plan that could start to address, and hopefully improve some of the problems identified. To do this, quite significant levels of 'change' in community understanding were required for the project to lead to successful (high levels) adoption.

Those involved in managing the project felt that change was required in many areas, including:

~ increased awareness of the values of the catchment and development of a shared vision of a desirable future state;
~ awareness of the environmental problems in the catchment, particularly the algal bloom experiences in the lower catchment; and
~ increased willingness and capacity to undertake changes in farming practice.

A Communications Strategy was prepared at the outset of Watershed Torbay. As the project progressed, research undertaken as part of a PhD thesis entitled '*Managing processes of change: Watershed Torbay as a focus project*' was incorporated. A communications learning log was adopted as the method used to record the adaptive management undertaken during the project. The communications learning log summarised the key tasks undertaken, the approach, and the successes and difficulties experienced. The log was updated throughout the life of the project and could be viewed on the Torbay Catchment Group's website at www.torbay.scric.org

The Communications Strategy focused on the development of long term partnerships between key players. A Watershed Torbay Steering Committee with community representatives, cross agency staff and chaired by an independent community member, actively worked on the development of the Catchment Restoration Plan and ensured the issues and roles of all players were transparent. This committee immediately adopted the vision developed by the Torbay Catchment Group already operating in the region, further strengthening the relationship between Watershed Torbay and work already underway. The shared vision is:

"An environmentally clean, balanced ecology supporting a prosperous community in which people respect each other's use of the catchment and waterways."

Principles

The need for strong community involvement was embedded in the project plan with a number of principles guiding activity:

~ a strong focus on ensuring community involvement and active participation in all aspects of the project;
~ researchers, agency staff and the local community working collaboratively in an action learning environment, with emphasis on the sharing of knowledge, skills and experience; and
~ communication, both within and beyond the catchment, guided by a strategy developed in the early stages of the project and updated as work progresses.

Watershed Torbay adopted these principles and started out by listening to local community concerns about a number of long standing catchment issues, these included:

~ regular and persistent algal blooms in Lake Powell and Torbay Inlet;
~ management of the lower drainage district, including conflicts over the primary beneficiaries and conflicting aims of drainage management;
~ growth of commercial blue gum plantations in the catchment;
~ concern over plans to abstract water from Marbellup Brook for drinking water supplies for Albany;
~ concerns over management of the Albany tree farm for disposal of wastewater treatment plant effluent from Albany;
~ increasing extent and impact of weeds;
~ degradation of waterways and the condition of native vegetation; and
~ population and subdivision pressures from the growth of Albany adjacent to the catchment.

Toxic algae warning sign at Marbellup Brook.

Members of the steering committee were also catchment group members, and regularly reported back to other representatives. This was critical, as the catchment group would be the body responsible for implementation of the Catchment Restoration Plan developed through Watershed Torbay.

A support team comprised of the project officer and project manager from the WA Department of Water, the communication coordinator and the project steering committee chair met on a monthly basis during the project to ensure that:

~ milestones were met;
~ the project was on track, and
~ to discuss the best processes to use for coming stages of the project.

This team was essential to keep the momentum of the project going.

Key elements of the Communications Strategy

The principal objective of the Communications Strategy was to involve all key players to:

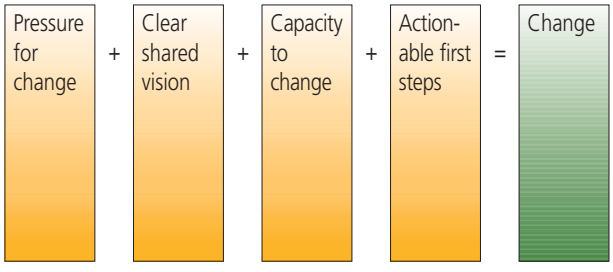
~ build a shared vision for the waterways of the Torbay Catchment;
~ develop a set of sustainability indicators that reflect the community vision for the waterways of Torbay Catchment and provide regular feedback on progress toward achieving the vision;
~ create opportunities for community input into the development of the action plan for the Torbay Catchment that meet community priorities;
~ bridge the communication gap between researchers, the government agencies involved in the project (and in particular the Water Corporation), the people working on the ground and the wider community so that research work assists the community to better understand the Torbay Catchment and increases their ability to be involved in sound management decisions leading to strategic restoration works;
~ have input into the development of on-ground projects so that they use the skills, interest and involvement of the local community;
~ celebrate achievements of the project;
~ identify any barriers to bringing about positive changes in waterways and creating solutions to them; and
~ communicate the learnings and successes of the project at a local, regional, state and national level, and seek feedback from other communities.

Engaging the community

Watershed Torbay adopted a number of approaches to ensure the successful development and implementation of the Catchment Restoration Plan, and to ensure that learnings were shared around Australia. These included:

~ best practice community participation and change program, guided by the parallel PhD studies on best practice community change by communications coordinator Louise Duxbury;
~ research and science program based on a civic-science approach, to fill knowledge gaps for the catchment that were essential in understanding possible management responses;
~ a planning framework that accounted for science input to ensure the efficacy of actions, and community input to ensure the acceptability of actions;
~ adoption of social marketing strategies to ensure widespread adoption;
~ maintenance of a learning log throughout the project, with input from researchers, community and project officers, in order to share learnings within the catchment and around Australia; and
~ development and reporting of catchment health indicators for the community, based on community perceptions about what is important to measure and their interpretation of success.

A framework for change was introduced to help guide thinking about change management. A review of literature on the international and Australian Landcare movement, as well as extension and change research, indicated that projects such as Watershed Torbay needed to focus on more than raising awareness. Research showed that high levels of awareness are not necessarily sufficient to change behaviour. The figure below outlines the elements of change Watershed Torbay focused activity around in order to move beyond a purely awareness raising approach. These elements of change were worked on simultaneously, rather than moving through each one in a linear fashion.



Key elements of change.

In adopting this framework for change, a wide range of communications and community involvement activities were held to assist project participants to 'move through' the different stages. An essential first step for the project was to identify the pressures for change (as outlined on pages 4–5) and develop a clear and agreed community vision for the Catchment Restoration Plan. This was achieved through a series of community visioning workshops, as well as other activities to encourage the community to think about their catchment. Activities included a photographic competition and exhibitions, as well as a community survey mailed to every landholder that asked questions about what they felt were key issues for the local region.

These activities were supported by a comprehensive range of information, including a web page with the 'learning log' to track progress, newsletters, pamphlets, an e-mail network, as well as presentations and updates at catchment group and other community meetings. A number of workshops and meetings were held to promote understanding of catchment issues, options, and alternative management approaches. Bus tours (both within and beyond the catchment), workshops and field days were held to gain community input into the choice of actions embedded in the Catchment Restoration Plan.

Activities like these were essential in ensuring community members had input and confidence that the Catchment Restoration Plan addressed their priorities, and could be implemented. Research open days provided opportunities for community participation in fieldwork, and lectures about the work being undertaken were also held. Working groups were established to deal with specific issues, such as the drainage committee, and there was community membership of the technical advisory group. Participation of schools, progress associations, celebration barbeques and events, were also used to build community spirit and promote participation in the project.

At the project's completion and release of the Catchment Restoration Plan, a series of focus groups were held to fully understand barriers to adoption, and to assist formulation of the approach and funding formula for on-ground works.

Above: Landholder's two day farm tour to Busselton with Ian Mott showing how to compost dairy and hay waste.

Below: Lunch on 2006 Catchment bus tour 'Over the fence'. Cooks are catchment chair Phil Mellon (right) and deputy chair Maurice McCormick.

Going West!

We went on a trip I won't forget
Heading west through timbers tall,
Packed like sardines in two cars
Louise in front and Dave behind.
Some layabouts in our car made life a giggle
The banter flashed to and fro.
Our trip was to see how the other half goes,
With trees and mulch, red mud and fertiliser.
Farm after farm we inspected the land.
What fertiliser do you use,
What grass have you planted and how does it go?
The questions kept flowing to and fro.
The dining arrangements meant some had a friend,
While the rest just ate for one.
The platters were huge and some were confounded,
The service was great, with a smile.
So thank you Louise for organising the trip
Home safe and sound with new ideas abound.

Maurice McCormick, June 2005

Partnerships, participation and organisational capacity

Participation of all relevant sectors, and an emphasis on broad community involvement and capacity building, were features of Watershed Torbay. At the Commonwealth level, funding through the National Rivers Consortium meant that the project was directly linked into developments at the national scale in research and policy. At the state level, key government agencies, including the WA Department of Water, Department of Agriculture and Food, Water Corporation, and the Department of Environment and Conservation, were all valuable partners. At the local level a range of organisations were involved, including the Torbay Catchment Group, the City of Albany, industry sectors such as the potato industry and the South Coast Licensed Fishermen Association, ratepayer associations and other local community groups.

Representatives of all these groups were invited to be members of the project steering committee. Bringing together people working at federal, state and local levels meant that information was shared and understandings developed about the various roles, responsibilities, pressures and opportunities that different organisations dealt with. It also meant that developing a shared vision between this diverse group was something that united and provided a common purpose for all involved.

As mentioned previously, the work of Watershed Torbay was firmly integrated into the Torbay Catchment Group. Early in the life of the project, the Catchment Group felt disenfranchised as a separate project steering committee was set up and resources gathered for major planning, research and works in the catchment through Watershed Torbay.

Steps were taken to rectify this issue of ownership:

- the role of the project steering committee as a limited lifetime committee was reinforced, and a joint meeting of the steering committee and catchment group was held;
- the Torbay Catchment vision was adopted by the Watershed Torbay project;
- the role of the project in creating a Catchment Restoration Plan was confirmed. It was also agreed that the Plan would need to be signed off by the Torbay Catchment Group as a key partner responsible for implementing many of the tasks it outlined;
- key members of the steering committee were on the Torbay Catchment Group and reported back to catchment group meetings;
- the chair of the Torbay Catchment Group was the deputy chair for the Watershed Torbay Steering Committe; and
- all members of the Torbay Catchment Group were invited to attend the project steering committee meetings.

These steps ensured that the Torbay Catchment Group felt involved and integral to the development and subsequent implementation of the Catchment Restoration Plan.

On the ground, Green Skills Inc. provided access to labour through Green Corps teams who gave support for environmental training in the catchment,

Members of the Board of the former Water and Rivers Commission inspect the artificial wetland with local sedge grower Bill Hollingworth.

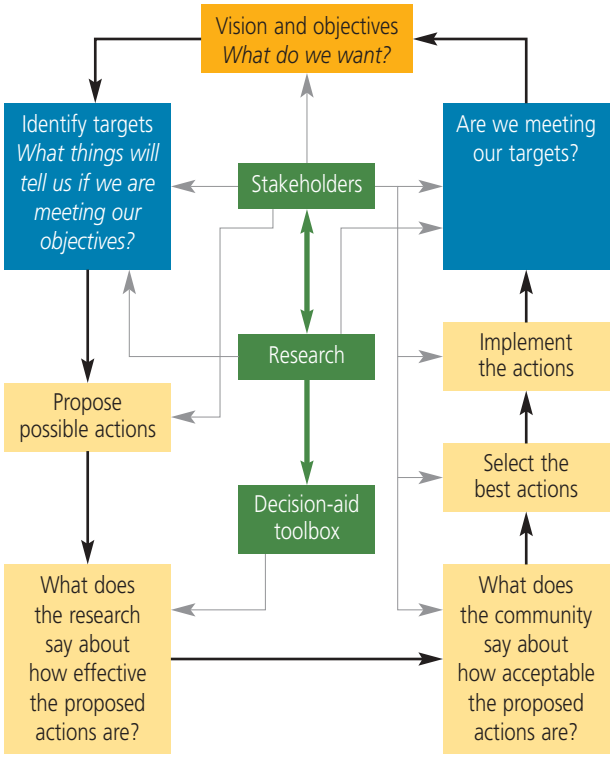
Community members on left, Department of Environment and Conservation wildlife office and members of the Albany Bird Group jointly decide where to locate the bird hide to facilitate monitoring at Lake Powell, an A class reserve.

and ongoing community development advice. Involvement from the City of Albany was sought to access planning staff and open up opportunities to influence rural planning strategies, development applications, and to increase awareness and local capacity to address natural resources management issues within City of Albany staff and elected councillors. This partnering resulted in researchers being invited to take part in a rural town planning scheme revision, something that had not happened in the past.

The Centre of Excellence in Natural Resources Management (University of Western Australia) was an important research partner. It established key research and educational sites in the catchment, provided strong support for student groups working with landholders, and interpreted scientific information about the catchment to the community.

"The friendliness and willingness of staff to help, especially Julie Pech and Andrew Maughan, was brilliant. I felt like everyone was keen to help me find the data or information that I needed and that there was team environment to work with… To understand the processes within Lake Powell requires a huge level of integration of physical, chemical and biological interactions.

…I would definitely encourage this kind of project to other students. I found it a very rewarding experience to be able to work with both government departments and the local community to try to better the environment."
(Simon Brett, University of Western Australia student, learning log)



The planning framework for the project

The planning framework is shown in figure above, and was an adaptation of a river restoration framework (see Koehn, J.D, Brierley, G.J., Cant, B.L. & Lucas, A.M., 2001, 'River Restoration Framework', Land & Water Australia Occasional Paper 01/01).

Seven themes were identified as needing to be addressed by the Catchment Restoration Plan, and these primarily related to issues identified by the community:

1. Algal blooms and water quality.
2. Water quantity (including environmental water requirements).
3. Drainage management.
4. Habitat and biodiversity management.
5. Farming systems.
6. Landuse planning.
7. Community education and information.

Steering committee sessions were held for each of the seven themes to work through the key steps in the framework. This was important as it enabled:

~ aspirations and objectives of the community to be documented, and targets to be set;
~ the full range of options, including 'wild' community and researcher ideas, as well as mainstream approaches, to be assessed objectively;
~ both technical efficacy and community acceptability to be explicitly assessed in the planning process (excerpt see Tables 1 and 2, overleaf);

Farming systems	Effectiveness						Comments
	Best guess			Uncertainty			
Examples:							
Possible actions	Hi	M	Lo	Hi	M	Lo	
Mixed production systems			✓		✓		Nutrient inputs unchanged
Professional fertiliser advice	✓				✓		Depends on attitude of landholder
Perennial pasture support	✓				✓		Only if information is available on economics and management for individual farmers

Table 1, above: Researchers input to prioritising possible actions.

Farming systems	Effectiveness					
	How acceptable			How cost effective		
Examples:						
Possible actions	Hi	M	Lo	Hi	M	Lo
Mixed production systems		✓			✓	
Professional fertiliser advice	✓			✓		
Perennial pasture support	✓				✓	

Table 2, left: Landholders input to prioritising possible actions.

~ a clear role and involvement for the community and for scientists to be followed; and
~ an iterative approach to setting targets. In some instances the level of change and investment required to achieve targets was considered unacceptable, and this led to more realistic targets being set.

The Catchment Restoration Plan developed over the life of the project. Three versions of the plan were developed, each reflecting a higher level of technical understanding about the catchment as the science program delivered outcomes, and the community's understanding increased. This ensured that there was some technical guidance to on-ground work early in the project, and that implementation occurred in parallel with the science and planning process.

To assist in setting priorities in the Catchment Restoration Plan, key agencies and a community working group independently nominated their priorities against each action. A composite priority list across all of the agencies and the community was then calculated. This process provided information about the different roles that could be expected from each agency in implementing the Catchment Restoration Plan, as well as clearly indicating common priorities.

The 'civic-science' research program

The development and implementation of the science projects was based on an approach that:

~ recognised and captured local community knowledge and specific expertise;
~ was based on resolving the issues identified by the community;
~ involved an open canvassing of knowledge gaps in the catchment;
~ used clear criteria to select appropriate science projects;
~ involved the community during the experimental work where possible; and
~ required scientists to present their findings in plain language directly to the community.

All the projects were chosen using a range of criteria that adopted a 'civic-science' approach. The criteria were:

1. What is the capacity of the research to answer the key community questions?
2. Will the research provide information to influence the selection and implementation of actions?
3. How transportable is the research to other catchments throughout Australia?
4. How urgent is the research in terms of influencing actions (this is the priority), or is it addressing a long-term issue?
5. What is the likelihood of obtaining other potential funding sources instead of National Rivers Consortium funding under Watershed Torbay?
6. What is the direct cost of the proposal and the extent to which there is matching funds?
7. What is the research proposal's potential to give results that lead to low cost land-use management change i.e. behavioural change?

The result of adopting this approach was a comprehensive science program designed to fill knowledge gaps about the catchment in a way that engaged the community, provided integrated outcomes where possible, and gave direct advice on management approaches. Fifteen science projects were grouped into the seven themes developed through the planning framework, and this promoted the integration of results. In addition, where possible,

Above: Sixty eight kilometres of waterway foreshore was fenced while the Torbay Catchment Restoration Plan was being written.

Right: Fencing is protecting the remnant vegetation along this creek.

Below: A stock crossing point that will assist with improving water quality in the catchment.

researchers were asked to provide answers to some of the questions raised by the community at the beginning of the project. Some of the questions related to salinity, water extraction and nutrient management, as well as issues around who should make decisions about floodgates and opening up the inlet when the bar became blocked. By presenting available scientific information in a way that related to these issues, community members could see how the research program was linked to their concerns and interests.

People were also encouraged to implement recommended management practices and provide feedback on results. This was important in maintaining community momentum whilst longer term science projects were being undertaken. The types of on-ground works were:

~ continuous implementation of standard and best bet landcare practices, including riparian fencing and rehabilitation, installation of stock crossings, vegetation protection, and improved fertiliser practices;
~ establishment of demonstration sites for 'new' approaches in the catchment, including use of perennial pastures and the retrofitting of drains;
~ trialling new techniques for nutrient management of waters including installation of artificial wetlands, and use of Phoslock®™ to manage water column nutrient concentrations;
~ the building of a bird hide and boardwalk for bird monitoring at the Lake Powell nature reserve; and
~ spraying over 70 kilometres of road verge to control Watsonia and other weeds.

The science underpinning these works was provided to landholders, and funding obtained from a mixture of grants (Envirofund, Coast and Clean Seas, Lotterywest, WA Department of Water). Ongoing support from project staff, combined with good quality information endorsed by local community leaders, meant that significant in-roads were made in addressing the previously low levels of adoption that had characterised the catchment at the start of the project.

Monitoring, evaluation and reporting

A comprehensive monitoring and evaluation strategy was developed for the project, with seven gauging stations on key waterways, fortnightly wetland and estuary sampling, and vegetation change mapping. The most important innovation was the development of community catchment health indicators. It was considered most important to gauge the success of community actions using indicators meaningful to them. This meant that indicators were selected on the basis of community values, and checked with researchers, so that they were robust from a technical perspective. The indicators needed to be easily measured and analysed, and able to be communicated to the community. This was not a simple matter, as data is often not collected for long enough to show trends and is difficult to present in simple terms. The report cards that were eventually developed, were provided in draft form to community members and researchers to check that the information was understandable, meaningful and accurate. The first annual report card on selected indicators was published in 2005.

Key findings

By using the change and planning frameworks, civic-science approach and comprehensive communications techniques, Watershed Torbay achieved ownership by the local community and was managed in a thorough and reflective way. This assisted in the development of vision and capacity to drive the development of an ambitious Catchment Restoration Plan. The following key findings highlight some of the success factors that enabled Watershed Torbay to achieve community engagement and catchment restoration outcomes.

~ Actively manage change

The communication learning log showed how important it is to actively manage change. There were many processes used across all aspects of the project to build trust between partners, and to maintain momentum and ownership. The feedback from various people recorded in the log showed that without this regular reflection and responsiveness, the project could have hit major obstacles. By adopting a philosophy and framework for change, Watershed Torbay invested in building relationships, involving


TORBAY CATCHMENT HEALTH REPORT CARD 2005

How are we going? Improving Getting worse No change ? Insufficient data

Photo: Marshall's constructed wetland on a key drain on private property. It is closely monitored to gain water quality data, especially nutrient levels, upstream and downstream of the wetland.

key players, encouraging intelligent dialogue on issues, and incorporating different kinds of knowledge. In essence, it was about bringing together community values, local technical knowledge and scientific information to address shared catchment issues.

This approach had very positive outcomes. The focus on building relationships and maximising the involvement of the community and key players in the catchment, led to a building of trust that made the task of jointly deciding on Catchment Restoration Plan actions and priorities relatively straightforward. The community members wanted, and appreciated, the active involvement of agency staff in meetings. Agency roles and responsibilities were articulated, reducing confusion and avoiding duplication between different organisations.

The use of the framework for change highlighted the need to work on all key elements of change — pressures for change, a clear vision, capacity to change, and first steps — simultaneously. Watershed Torbay proceeded on the basis that behaviour change would need to be the key objective of the Catchment Restoration Plan, and resources were allocated to this task.

A range of communication strategies were used to convey project information and updates. Particular emphasis was placed on the newsletter, as this went to every household and was nominated by the community as the preferred way of receiving information. This was issued on a quarterly basis and, though expensive in both time and printing, was widely supported and appreciated by people in the region. The newsletter was supported by opportunities for direct interaction at fields days, workshops and other events. Some of the learning log responses point to the success of these inclusive communication strategies.

E-mail was used widely by agency staff, however, for some community members fax, telephone and letter were preferred due to slow connection times. Local media, particularly radio, was important and could have been used more, but this required training of project members to be spokespeople and there were not enough resources to provide this. The website was important as a storage bank for all research, data and communications during the entire project. It was available for anyone interested to track progress in the project and provide comment via the learning log.

Chris Westcott, Torbay potato farmer participating in water sampling at Lake Manarup.

School children on a macroinvertebrate sampling excursion to Lake Powell.

Above: Marbellup Brook, a major waterway in the catchment.
Right: A cultural awareness workshop was held to educate the local community about indigenous knowledge. More work needs to be done in this area, as it is under resourced and Watershed Torbay highlighted it as requiring further investment.
Below: Woodbury Boston school was involved in the Torbay project and emphasised the need to extend participation in the project to other schools in the region. Media coverage of a photography competition promoted the work being done by the project to the wider community.

Students put Torbay in focus

The catchment-wide survey was important in giving every landholder an opportunity to have input into issues and possible actions for catchment restoration. It also gathered attitudinal data.

Open forums run during the project were useful, but tended to be "preaching to the converted". In contrast, the focus groups run at the end of the project, invited landholders at random. Many of those attending had not been to any other forum and enjoyed the opportunity. This highlighted the importance of using a wide range of communication and social surveying methods.

Opportunities were sought to involve locals in all aspects of the project including paid contract work, research, planning, on-ground works, gathering history, and celebratory events. Project and Catchment Restoration Plan launches, barbeques, bus tours, thank you dinners at the end of the year, and a good supper at the end of meetings were all used to make people feel valued and their contribution worthwhile.

Torbay farmer Phillip Marshall, at a trial site of 'tall wheat grass', a perennial pasture often grown on saline or waterlogged soils.

Right: Planting a buffer next to a protected bush area such as the Karri forest shown above.

~ Establish relationships and a basis for trust with communities prior to embarking on large joint projects

The WA Department of Water and the Department of Agriculture and Food had worked closely with the Torbay Catchment Group prior to the start of the Watershed Torbay project, establishing some credentials through support of the group's on-ground activities. However, regardless of the previous proactive engagement with the community, the early stages of Watershed Torbay were still characterised by some distrust of the Department of Water's motives and agenda. As a result of this, the Department of Water had to establish its genuine concern to seek solutions for some of the more intractable management issues and stakeholder conflicts associated with management of wetlands and the drainage district.

The outcome has been that the Department of Water has changed its approach to community involvement. Watershed Torbay is now used as a case study to promote the future preferred approach of the agency to community participation in natural resource management. The Department, within the South Coast Region and Central Science branches, has also substantially increased its skills and capacity to engage communities — through staff training and awareness, shared learnings, and real on-ground experience. Watershed Torbay facilitated the building of trust between Torbay landholders and the Department of Water.

In addition, two of the WA Government departments — the Water Corporation, and the Department of Environment and Conservation, also needed to build bridges with the local community. These two agencies were held in suspicion by locals, primarily because of unmet expectations, a lack of communication and poor understanding of roles. There was a history of community concern about the Water Corporation over management of the drainage system, the wastewater disposal system, and future water supplies.

Through the development of communication protocols, and adherence to transparent decision-making processes, the level of trust in the Water Corporation improved immensely, with benefits to both the Corporation and the community. Community members now understand who the key contacts are, feel able to call them, and are clearer about the Corporation's roles and responsibilities. They have formed alliances in managing the lower drainage district and have initiated joint rehabilitation projects. A similar outcome has been achieved for the Department of Environment and Conservation with more community participation in the management of nature reserves.

"There is still a fear of bureaucracy in the community which makes them wary about things like the survey and soil testing work. They wonder if there is a secret agenda."

(Community member, learning log).

"Community members went with Environment and Conservation officers on a canoe trip in Lake Powell to discuss management issues. In the past, relationships between the agency and the community… have not been good. During Watershed Torbay a better relationship has been developed with access to the Lake through the bird hide established, and the proposal for development of a Friends of the Lake group."

(Community member, learning log)

"The consultative process of regular meetings allowed networks and understanding of other participants to be developed. The steering committee provided an important forum for strategic and tactical perspectives to be discussed."

(Danny Burkett, Water Corporation, learning log)

"I would have like to see all agencies, rather than just Department of Water taking overall responsibility of the project, being directed to cooperate their resources into Watershed Torbay instead of them only moving when prodded… we did not get information freely enough."

(Torbay Catchment Group member, learning log)

Establish relationships and a basis for trust...

In summary:

- ~ Dedicate time at the beginning of a project to build relationships with the community, and don't expect many 'outputs' in the first year of a project.
- ~ Establish open lines of communication through a range of options between project participants. Agency staff need to take time to get to know the community, and to build 'social' relationships, where possible.
- ~ Be explicit and specific about the agency's agenda for involvement in the project — have it stated up front and written down. Communities can accept a particular agenda provided it is clearly outlined.
- ~ Be flexible in style and pace of work to cater for 'hiccups' in the community — it is hard to anticipate where and when issues may arise, so being able to slow down, take time to listen and deal with concerns is important.
- ~ Acknowledge that the best interaction is often small and specific, over an individual issue or project, and have the flexibility to accommodate this in project planning.
- ~ Use local agency representatives who are best placed to engage in the regular interaction that builds trust, and avoid uninformed and careless intervention by people not fully briefed about the project.
- ~ Be specific about roles and responsibilities, and be clear with the community about what can and can't be achieved from the agency's perspective. The lead agency should engage proactively with other agencies so that a whole of government approach is used with responsibilities and involvement of each department clearly outlined.
- ~ Develop an understanding of the community — its history, values, leaders, strengths and weaknesses.

Canoeing on Lake Powell..

Left: Watershed Torbay Steering Committee Deputy Chair Andrew Marshall with Danny Burkett from the Water Corporation at the launch of the Catchment Restoration Plan in 2005. **Right**: Project Officer Julie Pech and Naomi Arrowsmith, Principal Investigator, WA Department of Water, worked closely together and were appreciated by the local community for their collegial and constructive relationship.

~ Recognise the time and resources required to involve community. Ensure staff are well skilled, and build multi-disciplinary project teams

Watershed Torbay was characterised by a highly participative community involvement program, and much of this relied on having a coordinator for two days a week over the full five year period. While this approach was envisaged from the outset, the level of resourcing required to achieve it was significantly underestimated. The project application allocated $60,000, or 12% of the National Rivers Consortium funding towards communication, but actually spent over $250,000, or 50% of project funding on wages, communication materials, workshops, surveys and associated costs.

Government agency project budgets generally provide for 'token' community engagement — public meetings, media releases, publishing of documents etc., but rarely, if ever, provide for full-scale community project participation. The reality is that it would be difficult to justify a Watershed Torbay style involvement for all natural resource management projects — the level of investment would not be affordable. However, in high priority areas with important public assets, this style of involvement and level of resourcing may be essential to achieve desired outcomes.

Traditionally, environmental agencies have staff selected for their science and management skills, with little consideration given to social science training or competencies in community involvement. Although some departments provide community involvement training opportunities, none really equip an officer to engage in a community change process like the one used in Watershed Torbay. One of the key successes of this project was that it had the resources to work directly with government departments and 'skill up' officers in how to work with local communities. It also brought together people from different departments with community representatives, so that knowledge and experience about the project could be shared. This 'bringing together' resulted in the creation of multi-skilled groups of people addressing different issues.

"The role of the communications coordinator and her depth of expertise has been one of the keys to the success of this project, without which the project would have floundered at many points and would have struggled to maintain momentum."

(Julie Pech, Catchment Officer, learning log)

"As a member and on behalf of the Torbay Catchment Group I would like to concur with the above. For without this facility to assist in this project it is quite possible that we would have slipped into the 'sloughs of despond'."

(Torbay Catchment Group member, learning log)

~ Recognise the time and resources required...

In summary:

- ~ Recognise that serious community involvement is time-consuming, costly, and involves skills sets that are not broadly held in government.
- ~ Start building agency skills in working with communities, communications and socio-economics, all of which are essential elements of natural resource management projects. This should influence agency's ethos, recruitment processes, and training programs for existing staff.

~ Recognise and honour previous work, integrate knowledge, particularly that of local communities, and manage adaptively

Many landholders undertake landcare work on their own initiative, or with small levels of assistance from catchment groups. In general, all projects rest on the history of previous projects, relationships, successes and failures. As such, it is important that new projects demonstrate how they respond to that history and recognise previous work. Watershed Torbay emphasised the value of seeking local community knowledge, values and experience. Through workshops, meetings and surveys, this knowledge and experience was displayed through photographic exhibitions, articles in newsletters and ultimately in the Catchment Restoration Plan. This process ensured that the Catchment Restoration Plan is based on what is important to the community, and provides solutions to locally important issues.

"I think the day to day contact with Department of Water staff during field sampling was most valuable in building relationships and good easy flowing communication for our understanding of how to target our research to provide the most useful information. This also meant that Department of Water staff also gained a good understanding of how we conduct our research and why.

(Emma Murray, Geoscience Australia, learning log)

"I really enjoyed the whole project, I am very pleased I was involved and it was recognised I could contribute something. The development I gained from it has helped me feel useful, learn new skills, engage with the community, career development… all much more than I have had opportunity to gain from other projects."

(Andrew Maughan, Department of Water hydrologist, learning log)

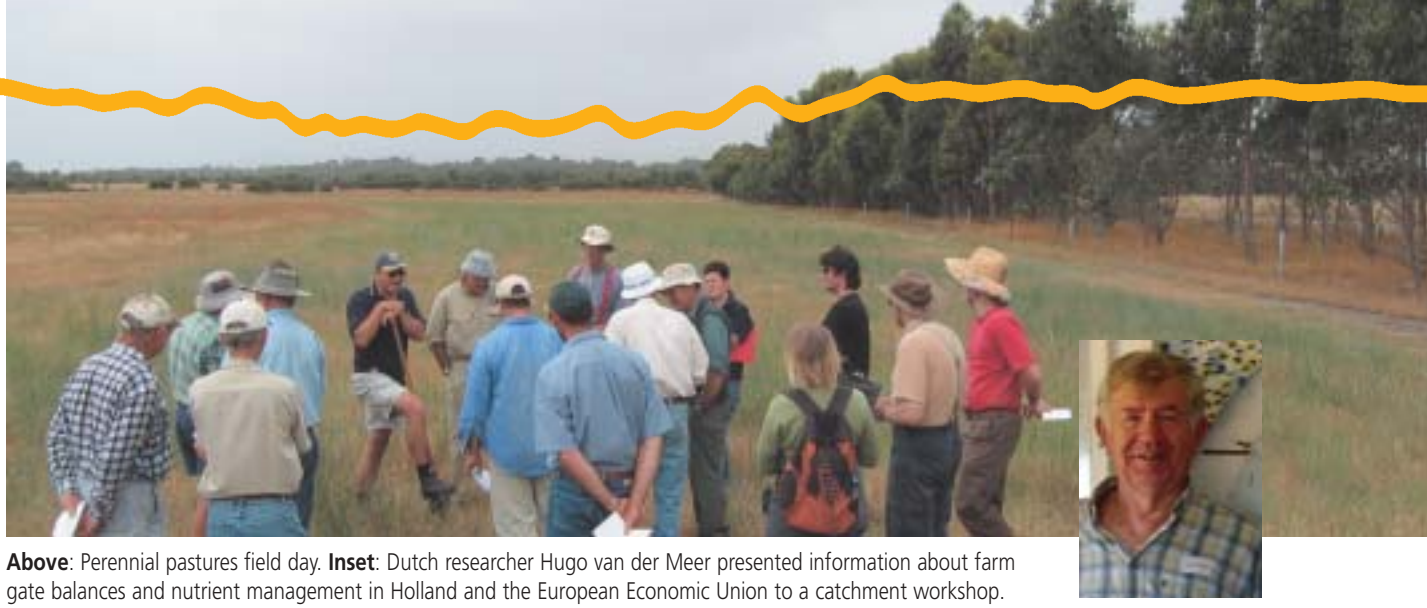
Developing joint solutions with the researchers working in the catchment meant that landholders were given direct access to the 'experts', and able to learn from, and give input on, whether the research was relevant to their concerns. Communities want to see that funding received for their catchment is going to benefit locals, and not just agencies or research institutions. Using the 'civic-science' approach meant that people knew where and why the funds were being allocated to particular research projects. They also had the opportunity to be involved through workshops, field days and talking directly to those undertaking the science — these are all ways of building confidence that the research being undertaken will be relevant and accessible for people once the projects are complete.

~ Recognise and honour previous work…

In summary:

- ~ Report in detail on how funds are to be allocated and are expended.
- ~ Edit technical/science reports in plain language and relate to local circumstances.
- ~ Develop science programs using a civic-science approach that values and integrates local values, technical knowledge and research knowledge.
- ~ Require researchers to collaborate and share equipment, model development, development of targets and processes for decision making.

Above: A stream on Dale and Tony Holley's property in 2003 before restoration works. Below: The same site four years later.



Above: Perennial pastures field day. **Inset**: Dutch researcher Hugo van der Meer presented information about farm gate balances and nutrient management in Holland and the European Economic Union to a catchment workshop.

~ Use 'civic-science' to build capacity, confidence and collaboration

The early adoption of a civic-science approach to the research program made it clear that the focus of all research was to improve the environmental condition of the Torbay catchment and address issues of concern to the local community. Early in the project, an expert panel undertook an audit of catchment understanding about different natural resources management issues and identified knowledge gaps. Research and science organisations were invited to submit projects to fill these gaps, and a set of 'civic-science' criteria were used to select appropriate projects.

Successful research projects were required to ensure strong community participation in their projects (e.g. through involvement in field work), two way exchange of information, presentation of findings at community forums, and newsletter articles. Researchers were encouraged to engage with each other, share sampling and monitoring sites and equipment, and synthesise their results so that integrated understandings of catchment processes could be gained.

This approach did not achieve its objectives in all research projects. Some researchers were resistant to collaborative research and the sharing of data and information; others found it difficult to direct their work at practical management outcomes. Overall, however, the approach saw good relationships develop between many of the researchers, local agency staff and community members, and the successful communication of research to the community. Several community members assisted in field trips for data collection and provided local information to researchers.

Community involvement in the research program led to increased levels of scrutiny, with some projects 'hitting the mark' for application (nutrient model), whilst others needing to go back for more work (drainage model). Some researchers were amenable to this level of community participation, whilst others found it quite difficult. Support was provided to researchers in how to present information in ways that make it accessible, and in most cases this was acted upon. The building of capacity in researchers to communicate information was another outcome of the Watershed Torbay project.

The decision-making processes integrating research and community issues greatly assisted in bringing an analytic approach to choosing possible actions for the catchment. In many cases, scientific understanding was still not sufficiently robust to define the technical efficacy of many actions. Expert panels were used where necessary to provide the best information possible for stakeholders to make judgements.

~ Use 'civic-science' to build capacity...

In summary:

- ~ It is important to have a robust selection criteria and objectives for a research program. This needs to be monitored, as even with clear criteria research projects may not deliver outcomes for the project.
- ~ Researchers need to provide opportunities for public involvement.
- ~ Guidelines on working with the community and communicating science need to be prepared for researchers, and resources allocated to assisting them to learn how to communicate successfully.
- ~ Provide opportunities for community scrutiny as it encourages accountability for the science program and uptake of research results.
- ~ Openly recognise where research does provide clear answers and where best bet judgements by researchers and the community may need to be jointly made.
- ~ Where possible, use local researchers as they are able to attend meetings, field trips and undertake work more frequently, all of which benefits projects.

Marshall's constructed wetlands. Left: Aerial view before planting works began. Right: Inspection of site by community and agency employees.

~ Focus on community strengths, invest in relationships and maintaining momentum

A small number of community members were involved for the full five years of Watershed Torbay, with positions on the steering committee as well as the catchment group. In addition, some of the same members sat on the drainage management committee, and attended special meetings working on aspects of the Catchment Restoration Plan. Two members also met regularly to review landholder applications for funding support for on-ground works. The steering committee chair met with the support team to help guide the project. These mechanisms were designed to keep the community informed about what was happening in different aspects of the project, and to provide them with the opportunity to have input through their appointed representatives.

Maintaining enthusiasm and involvement of the same community members can be a challenge, and in recognition of this, Watershed Torbay tried to draw in new people over the life of a project to avoid an over reliance on the same individuals. It was also important that assistance was provided to community members who did not have the skills to manage particular parts of the project. This is an often neglected area of project resourcing, with community participants often expected to undertake tasks they have no experience or knowledge in addressing. Watershed Torbay provided assistance with chairing meetings, financial management and project planning.

Watershed Torbay undertook 15 research projects over varying timeframes. Whilst community members were involved in some of this research, it was important that action 'on-the-ground' occurred, as this was where local groups felt they could make a real difference. The Torbay Catchment Group continued to drive on-ground work, while Watershed Torbay did the research and planning for the development of the Catchment Restoration Plan. This approach meant that the strengths of the community in undertaking on-ground action was recognised and valued as part of the overall vision to improve catchment condition. Involving the community in this way also provided opportunities to raise awareness about the level of work required to make a difference to catchment health. For many participants, early optimism was tempered as they came to appreciate the intractability of some issues like algal blooms.

"Pleased with outcomes of last meeting on targets for algal blooms, but disappointed to understand the level of work needed to make a substantial difference."

(Torbay Catchment Group member, learning log)

Landholders are practical people, most readily convinced by seeing real demonstrations. The activities that really stood out as likely to lead to changes in behaviour were the subsidies for on-ground works, one-to-one visits by the catchment officers, the soils and fertiliser workshops, the catchment bus tours, the talk by Dutch researcher Hugo van der Meer on nutrient farm gate balances, and the field trip to Busselton and Waroona. These activities enabled people to get first-hand experience of how science was informing decision making and recommended management practices. It was also important in bringing together landholders, government agency staff and researchers, thereby reducing suspicions about the agendas of the various groups involved. Importantly, this meant that questions could be asked and answered more rapidly face-to-face, rather than the more anonymous telephone call or letter.

This page: Planting sedges at Marshall's wetlands, 2001.

See overleaf for the results five years later…

~ Focus on community strengths…

In summary:

- ~ Don't expect too much from community members. They volunteer their time which means squeezing meetings and events around full time farm and/or other work.
- ~ It is important to pay attention to how to attract new people to meetings and workshops, and to replace current office bearers for group continuity.
- ~ Community members need time to consider and discuss information. This means that research and planning work needs to be scheduled with time to reflect and discuss more than once, before decisions are required.
- ~ Community members are very capable of understanding research, but require it to be written in plain language using local maps and examples.
- ~ Acknowledge that community members have local knowledge from years of observation, experimentation and experience, and are highly motivated by their connection to the place where they live. Listen to local knowledge and integrate it into research, planning and action.
- ~ Ensure that community expectations from project targets are realistic.
- ~ Resource one-to-one contact with landholders as it is most likely to gain commitment for on-ground works. Acknowledge and respect that landholders want a trusting relationship with the people who are working with them.

Next steps for Watershed Torbay…

When the Watershed Torbay project was completed in June 2006, it brought to a close an intense five-year period during which the local community was involved in workshops, planning meetings and research. While some on-ground work had been undertaken, the development of the Catchment Restoration Plan provided the implementation framework for extensive on-ground work.

Funding from South Coast Natural Resource Management Inc, has been used for a wide range of on-ground works, as well as some additional research, communication and education tasks. It has enabled the employment of one and a half full-time equivalent staff to progress with the implementation of the Catchment Restoration Plan. Staff are employed through the WA Department of Water.

While securing the funds immediately after the completion of the Catchment Restoration Plan has been essential to maintain the enthusiasm of the Torbay Catchment Group, this has not been translated throughout the community, with the take up of on-ground works disappointingly low. In the two years since implementation of the plan began, only $90,000 has been allocated to on-ground works, substantially less than the $150,000 per year that was planned. The changeover of staff responsible for implementation of on-ground works is a likely factor in the slower uptake of funds. Early adopters have also been picked up in previous programs, and increasing take up by more reticent landholders is always challenging.

Despite generous incentive rates, support and advice from the catchment staff and, in some cases free labour from Green Corps teams, landholders still

Marshall's wetland, 2006.

cite lack of time as a major obstacle to undertaking works. This is a common issue, particularly for smaller landholders with jobs off farm. The provision of a labour force (such as Green Corps) or more funding to enable the hiring of contractors to undertake the works may assist, with increasing the take-up rate. A survey of landholders in the catchment to take place in early 2008 may help to further understand community attitudes.

Keeping in touch with the community was a vital component of Watershed Torbay and has been maintained during the implementation period. Catchment newsletters are distributed across the entire catchment three to four times a year to keep residents informed of upcoming events, land management tips and funding opportunities. Annual report cards measuring the progress of the implementation of the plan are also distributed, as well as information being available on the website.

The greatest recognition for the Torbay Catchment Group and Watershed Torbay project partners was winning the 2006 Thiess National River*prize*. The award recognised and validated the hard work that all the project partners contributed to the development of the catchment plan, and the process through which this was undertaken. Winning the prize has also encouraged the group to continue the work, which can seem, at times, overwhelming. With the International River Foundation's encouragement and support, the catchment group is following up a possible twinning project with an Aboriginal community in the north-west of Western Australia. This process is challenging the catchment to look outside its own boundaries and will provide further learnings for all involved.

Watershed Torbay project Principal Investigator and manager Naomi Arrowsmith, WA Department of Water with Torbay Catchment chair and project deputy chair, Andrew Marshall with the award.

Summary of key learnings from project

Managing change

~ Have a philosophy of change and use a change framework working on all elements simultaneously — pressure, creating vision, capacity, and first steps.

~ Build reflection into projects. Adaptive management is taking feedback that comes from reflecting and monitoring, responding with problem solving, and reporting back on action taken. Dedicate time from the start of the project to building relationships and trust between all involved.

~ Anticipate and plan management approaches to dealing with conflict between the interests of different players.

~ Use planning processes that integrate research and local knowledge around what will have the 'best' local impact. Make sure targets are achievable, effective and acceptable.

~ Use social marketing and social survey techniques to understand the local community and target behaviour change strategies.

~ Use a wide range of extension and communication methods to enable a diversity of people and organisations to get involved.

Government agencies

~ Be flexible in your style and in the pace of work — slow down, take time to listen and deal with concerns.

~ Where possible use local agency representatives as they are best placed to engage in local projects.

~ Be explicit about the agenda of different partners in the project and what each can and can't do.

One of the Green Corps teams involved with the Torbay project.

~ Develop an understanding of the community, its Indigenous and European history, values, leaders, etc. and the impact of that history on your project.

~ Acknowledge community involvement is time-consuming, costly, and involves skill sets not broadly held in government. Resources need to be set aside to build agency capacity to accomplish community engagement successfully.

Researchers

~ Edit technical/science reports in plain language using local examples.

~ Develop science programs using a civic-science approach that values and integrates local values, technical knowledge and research knowledge.

~ Have a robust selection criteria and objectives for a research program.

~ Fund social science as well as natural science.

~ Require researchers to collaborate, share equipment, data and results.

~ Foster researcher and community exchange and provide training to scientists on how to communicate their work simply.

~ Use local researchers if possible as they are better connected and more available.

Working with community

~ Don't expect too much from community members, they are volunteers.
~ Attract new people to groups for continuity. Make involvement fun!
~ Give community members time to consider and discuss research and planning.
~ Ensure that community expectations from project targets are realistic.
~ Try to use one-to-one contact with landholders as it is the most effective extension approach.

Funding agencies

~ Be prepared to provide resources so that an aware and active community can be created with knowledge about river systems, and people committed to driving and managing projects to get successful outcomes.
~ Acknowledge good catchment management involves community engagement, planning, research and on-ground works, with significant investment required across all these areas.
~ Acknowledge that strategic planning for investment is needed to set targets and drive resource condition change. Research information needs to be linked with community aspirational goals and objectives.

For further information

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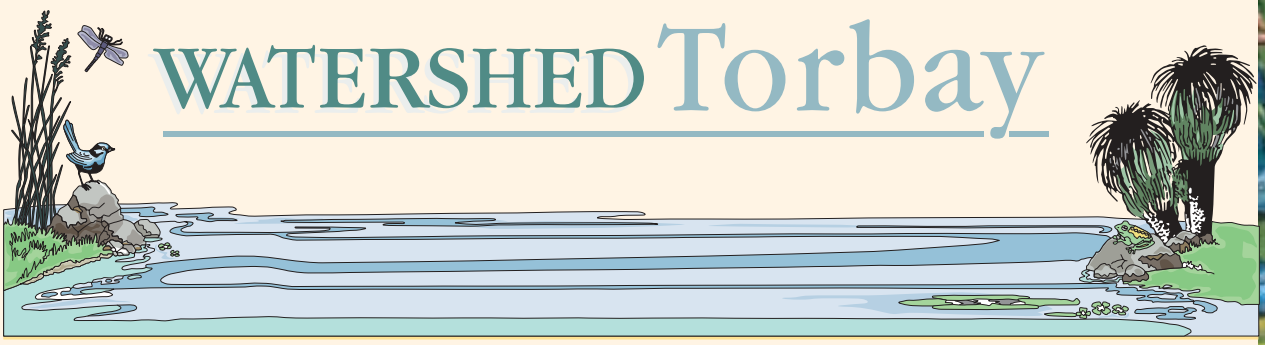
TORBAY CATCHMENT GROUP

Department of Water
Government of Western Australia

Department of Agriculture and Food
Government of Western Australia

WATER CORPORATION



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