

A marine cadastre for Australia

Philip Collier, Department of Geomatics, the University of Melbourne

As the world's largest island, Australia has a coastline length of approximately 36,700 km. The nation's relative isolation from its neighbours enables it to claim one of the largest maritime jurisdictions in the world. Australia's ocean territory is about 1.5 times larger than its land mass. Given the diversity and extent of Australia's ocean resources, there is an economic and social need to manage the nation's ocean territories productively, while also protecting the ocean environment.

Defining a marine cadastre

Effective management of the ocean requires ready access to accurate, current and comprehensive spatial information, covering details about position. Examples of marine spatial information include boundaries of Marine Protected Areas, location of shipping channels, positions of shipwrecks, routes of submarine cables and geographical extents of native title claims. With increasing usage of the marine environment, the need to map and

manage spatial extents and to understand the rules that govern their usage will grow.

Traditionally, a *cadastre* provides a register of interests in land and defines details such as location, dimensions, ownership and encumbrances. By extension, a *marine cadastre* would provide a means of assessing, delineating and managing interests at sea, where those interests are governed by spatially defined limits and rules. A marine cadastre has the potential to be more complex than its land-based equivalent. For example, a marine cadastre must consider the sub-sea bed, sea bed, water column, sea surface and air space as potentially separate but interdependent spatial domains.

The Marine Cadastre Project

A research project aimed at defining and developing a marine cadastre for Australia is being undertaken in the Department of Geomatics at the University of Melbourne. The two-year project is being funded by the Australian Research

Council with industry support from Geoscience Australia, Land Victoria and the Department of Natural Resources and Mines Queensland.

The primary objectives of the Marine Cadastre Project are to:

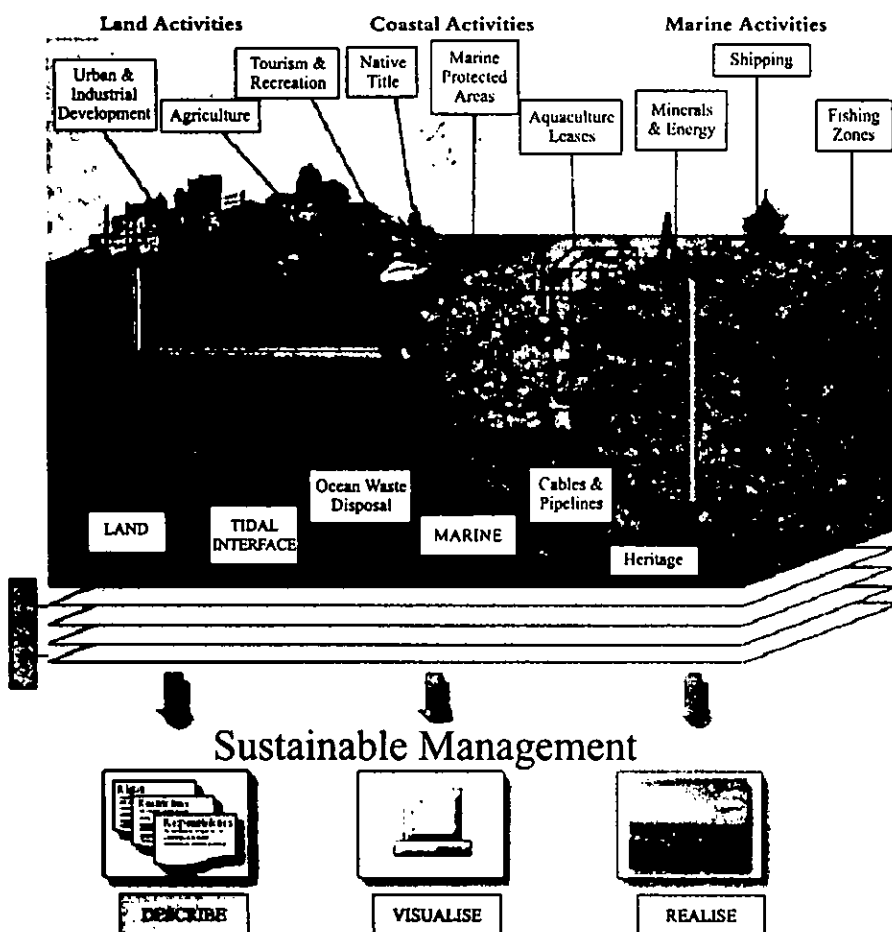
- identify the issues that currently inhibit the development of a marine cadastre;
- identify the key sectors and organisations that would contribute to and benefit from a marine cadastre;
- define, test and refine the criteria that would characterise a future marine cadastre;
- propose a strategy for the development of a comprehensive marine cadastre for Australia.

Project initiatives include:

- A very successful workshop was held in Melbourne on November 14–15, 2002. Presentations from the workshop can be downloaded from: <http://www.geom.unimelb.edu.au/maritime/workshop.htm>. A second workshop is planned for late 2004.
- An online questionnaire to assess the uses and users of marine spatial information and the problems faced in the application of spatial information in the offshore environment. See: <http://www.geom.unimelb.edu.au/maritime/questintro.htm>
- Industry consultation to further identify and define issues that should be addressed during the development of an Australian marine cadastre.
- A pilot project focused on two areas of study: Townsville, Queensland (including part of the Great Barrier Reef Marine Park); and the Victorian coast from Port Phillip Bay to the NSW border. See: <http://www.geom.unimelb.edu.au/maritime/pilot.htm>

Marine Cadastre Concept Diagram

© The University of Melbourne (to view an interactive version of this diagram, visit: <http://www.geom.unimelb.edu.au/maritime/diagram.htm>)



Further information

Website: <http://www.sli.unimelb.edu.au/maritime/>

To contribute to the pilot study or be included in the consultation process, please contact:

Dr Philip Collier

Tel: (03) 8344 8125

Email: p.collier@unimelb.edu.au

30.1.03.

Dear Peter.

I would appreciate your thoughts regarding the information contained in this letter. With your experience in land shore arrangements and general background in affordable housing options you may be aware of alternative funding arrangements that would be of use to me. Please feel free to discuss or pass this on to others who may have some inspired / creative ideas to achieve a solution.

Congratulations on ~~on~~ the good outcome for Pattersons Hill

Cheers Robin Crosby.

Rob has seen Rob Dolan

Conservation agreement

Markus Deselling
Tim Tetley

Rob Crosby
146 Binna Burra Rd.,
NSW, 2479
02 6687 1721
20/01/03

You are possibly aware that Claire and I are in the final stages of a property settlement, having been separated for nearly two years now. My aim is to continue living here, parenting Louise 50% of the time, while still coming to a property settlement agreeable to both Claire and me.

To reach a settlement with Claire, I am asking my family, friends and community for support and inspired, creative solutions.

I purchased the 5 acre block in the winter of 1979 for approximately \$15,000 and developed the property over the next few years. Works consisted of a 25 sq m work-shed, a house of 54 sq m (approx \$30,000) with generous assistance from friends and a small cash grant from the first home-owners scheme. Access road, dams, underground mains power, mains water and telephone service were constructed and installed. Sections of the block were deep ripped, additional fencing constructed and over 2000 woodlot seedlings were planted out.

During the years that Claire and I lived at Binna Burra together (1987 - 2001) we constructed a 20 sq m bedroom with sand, sawdust & cement walls, a composting toilet and we finished off the bathroom, internally installing a solar hot water system of my own design. More fruit and rainforest trees were planted out and a modest chook run set up.

The property is currently valued at approximately \$300,000, possibly more. I am unable to borrow all of this money through regular institutions to buy Claire out, so I need to raise \$75,000 by alternative (legal) creative methods.

Options suggested so far include:-

- X • Sell now, pay out Claire and move elsewhere
- ② • Sell a part share in the property and become one of two joint tenants.
This property cannot be legally subdivided at this time.
- Expand the house with additional rooms and share the house. Room rental helps cover increased mortgage repayments
- ? → • Sell a part share in / lease long term a holiday cabin
- ? → • Seek funding/support from an institution or group interested in the woodlot and conservation values
- Lease small plots of land to village/city dwellers who would like to cultivate a small garden and/or orchard with use of a shed, cabin, studio for weekends or holidays
- ? → • Pre-sell my services as a designer, boat-builder, woodworker in \$500 to \$1,000 units and work off the debt over the following few years.

Thank you for reading this letter.

If you have any information that could assist me, I would appreciate receiving it.

If you are interested in discussing some way to be financially involved, please contact me.

I welcome any response you might make.

I look forward to a good outcome for everyone.

0 Boundary adjustment with one or more of the neighbouring properties?

Yours sincerely

0 Does he know Rob Drolan?

0 Expanded House concept? Definition of "family"?

Rob Crosby

A Short History of the Trees

I am a designer, boat-builder, woodworker, lover of timber and trees and all things made thereof. In 1979 I came to Binna Burra at the height of the Terania Creek rainforest struggles.

where? | Impressed by the aesthetic sensibilities and long term logic of the environmentalists, I joined the Tweed Byron Reafforestation group. In 1980/81 I planted out an experimental mixed hardwood and rainforest timber woodlot.

Twenty years later, this island of trees surrounded by degraded pasture has become a valuable wildlife refuge as well as a maturing timber resource.

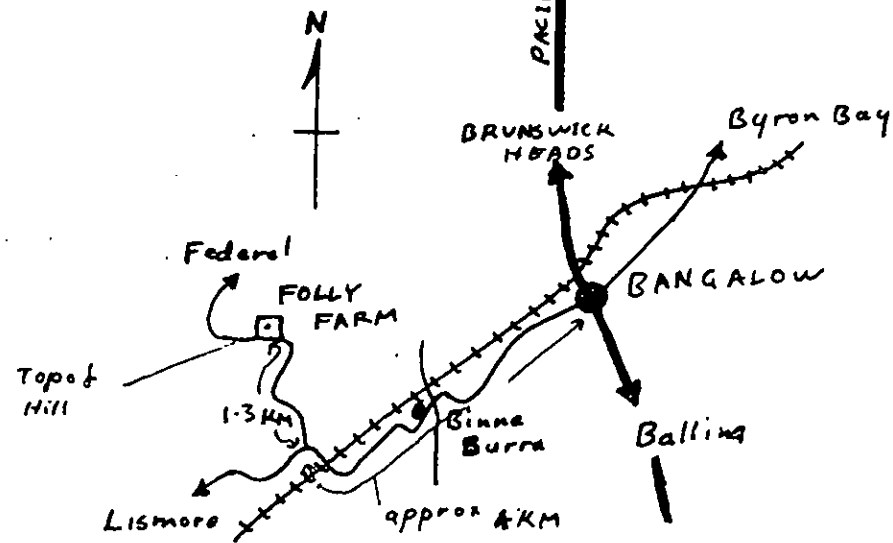
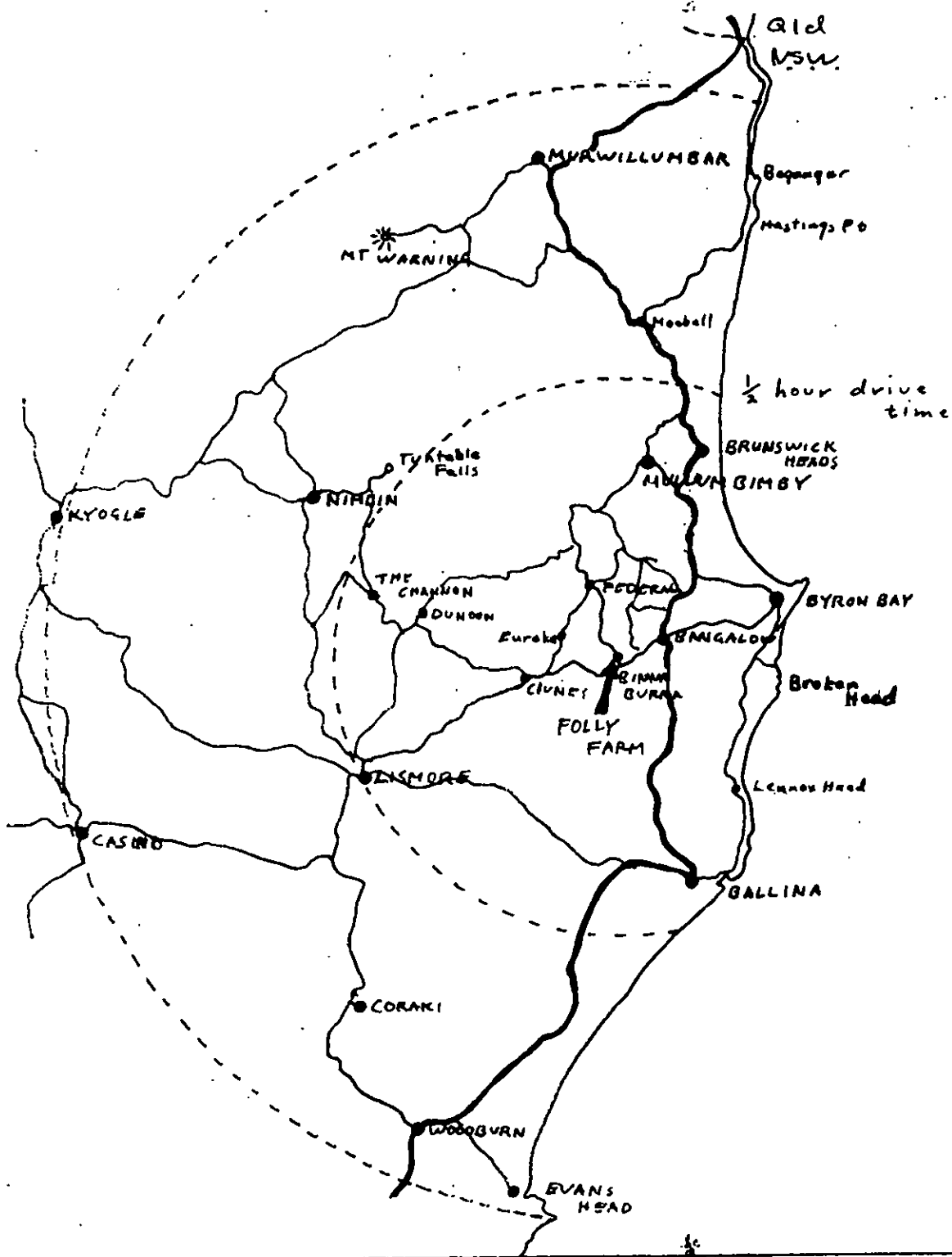
✓ | In the last few years small amounts of timber have been cut for woodwork projects. It is remarkably satisfying to grow, mill and construct quality timber products from a sustainable source. This is an example of a miniature, vertically integrated economy based on a renewable resource.

The house and workshop consist of small connected pavilions constructed from hardwood, brick and corrugated roofing sheets.

The enclosed photographs give some idea of the house, the trees and surrounds.

Mud Map of Folly Farm

2
Surrounding countryside
P.O. address Rob Crosby
Federal Rd Binna Burna
N.S.W. 2479, Australia



Byran Council Area




General Layout Plan

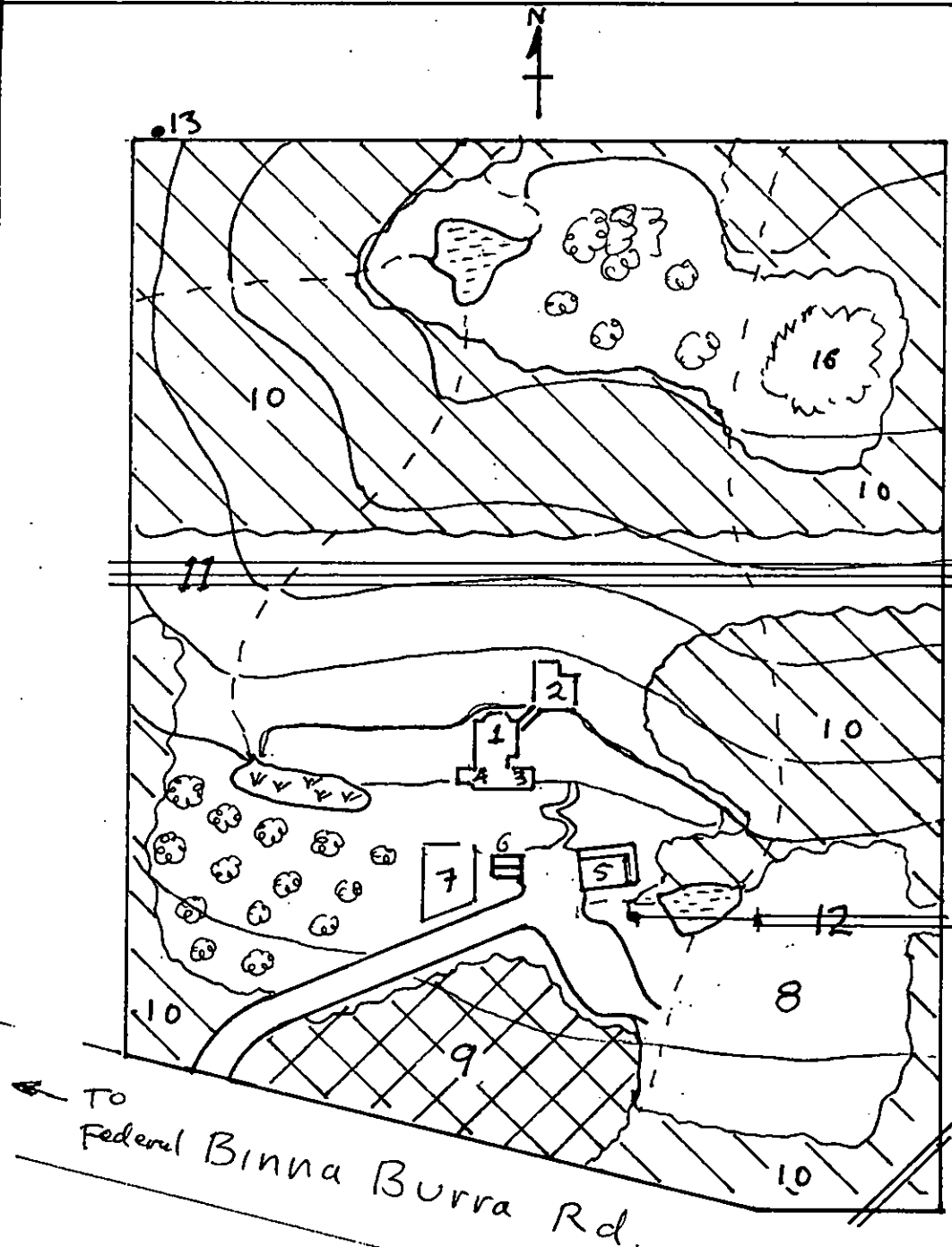
Lot 8 146 Binna Burra Rd

NSW Australia 2479

D.P. 255525 Area 2.0 Ha

Index to features.

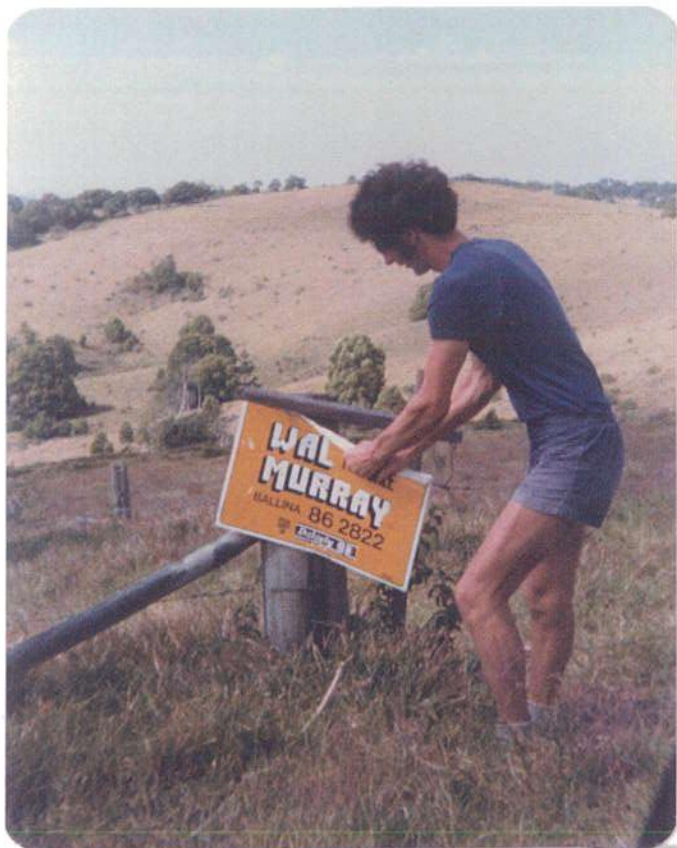
- ① Main Room / Loft
- ② Bedroom
- ③ Bathroom / Laundry
- ④ Compost Loo
- ⑤ Work shed
- ⑥ Carport
- ⑦ Chook Run
- ⑧ Paddock / Garden area.
- ⑨ Regenerating Rain forest Trees 
- ⑩ Mixed Eucalypt Forest + understory 
- ⑪ High Voltage Power lines overhead.
- ⑫ Domestic 240 Volt power lines, u/ground to house
- ⑬ Town Mains water supply
- ⑭ Spring Fed Dam. 
- ⑮ Mixed Orchard Trees
- ⑯ Bamboo grove



Scale 10 mm = 10,000 mm

1/1000

→ TO Bangalow



1979
Purchase
Bare block
A



View to
North.
A

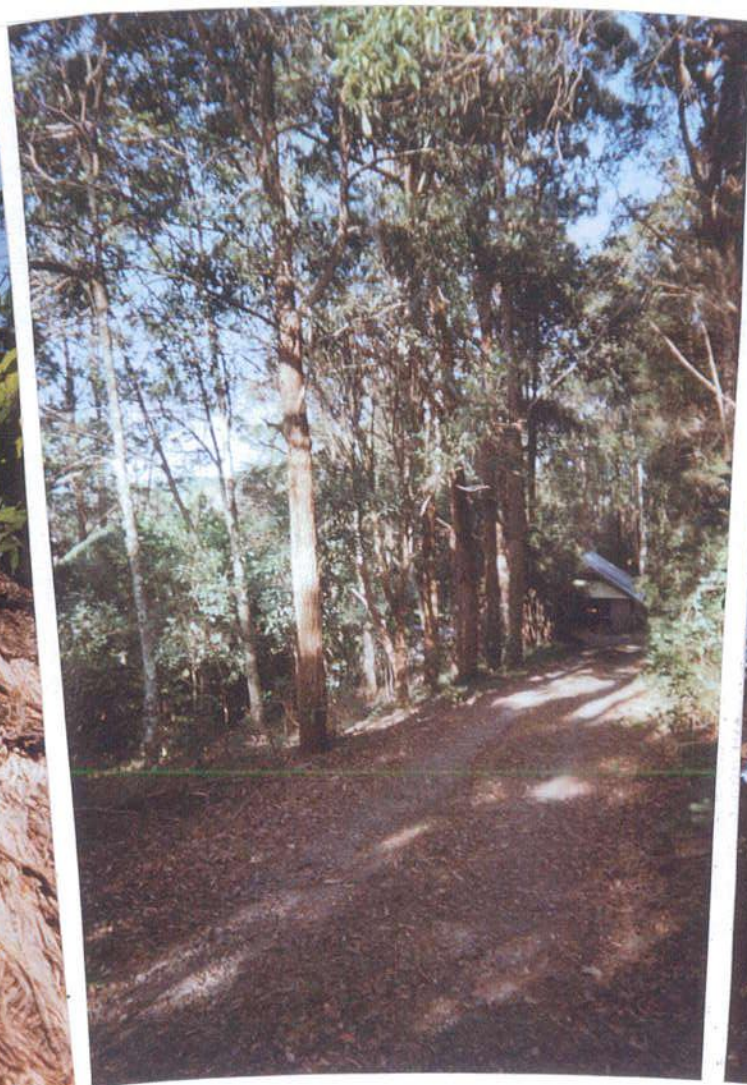


View
down
the
Block
A





Yellow String bark
1980 seedling



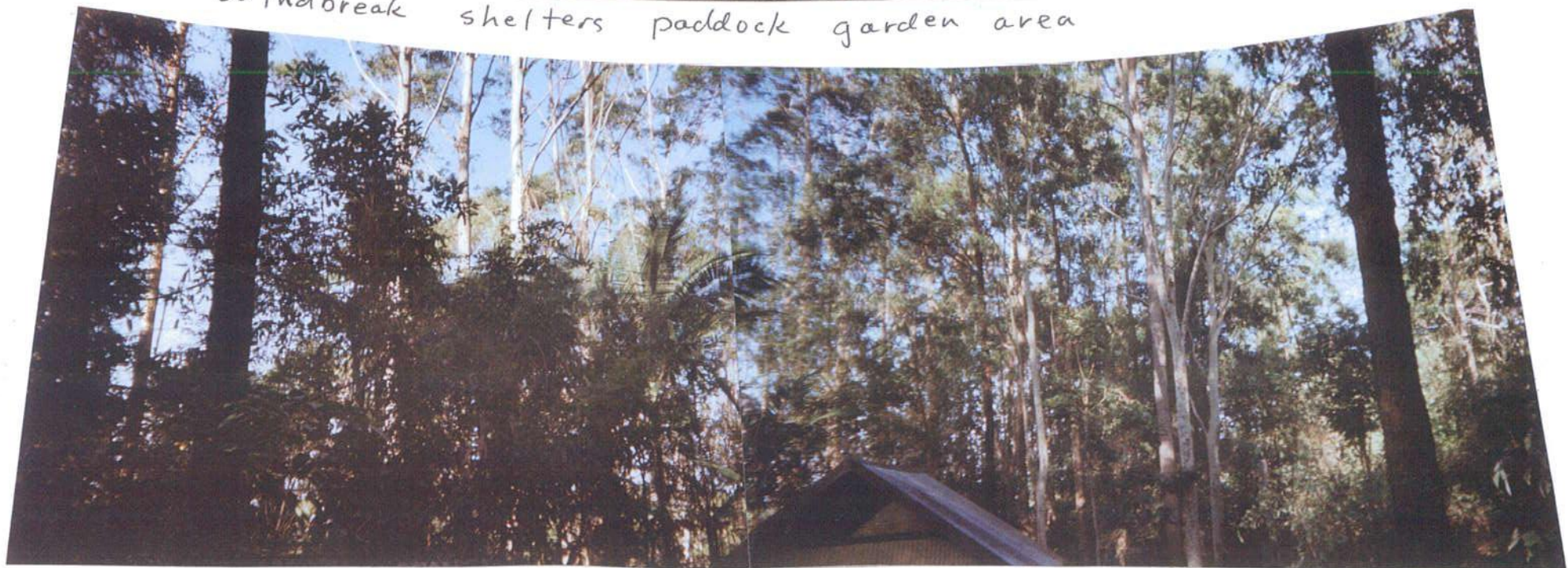
Driveway and
Workshop



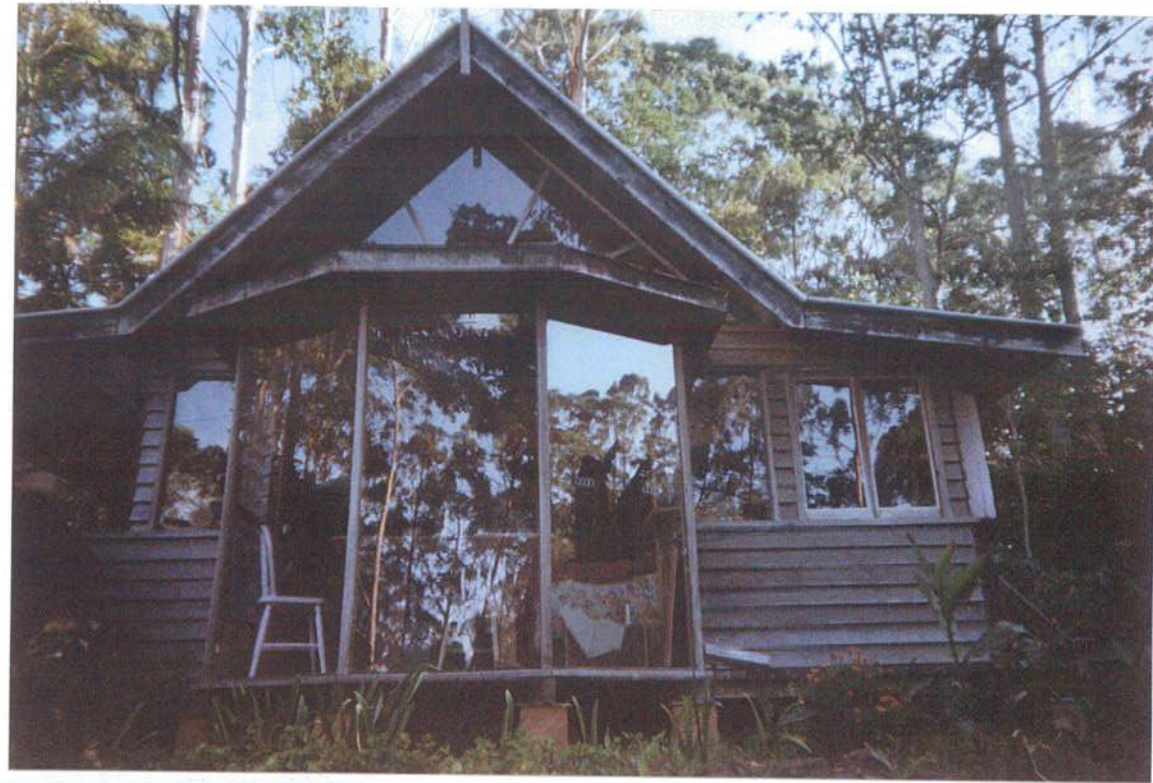
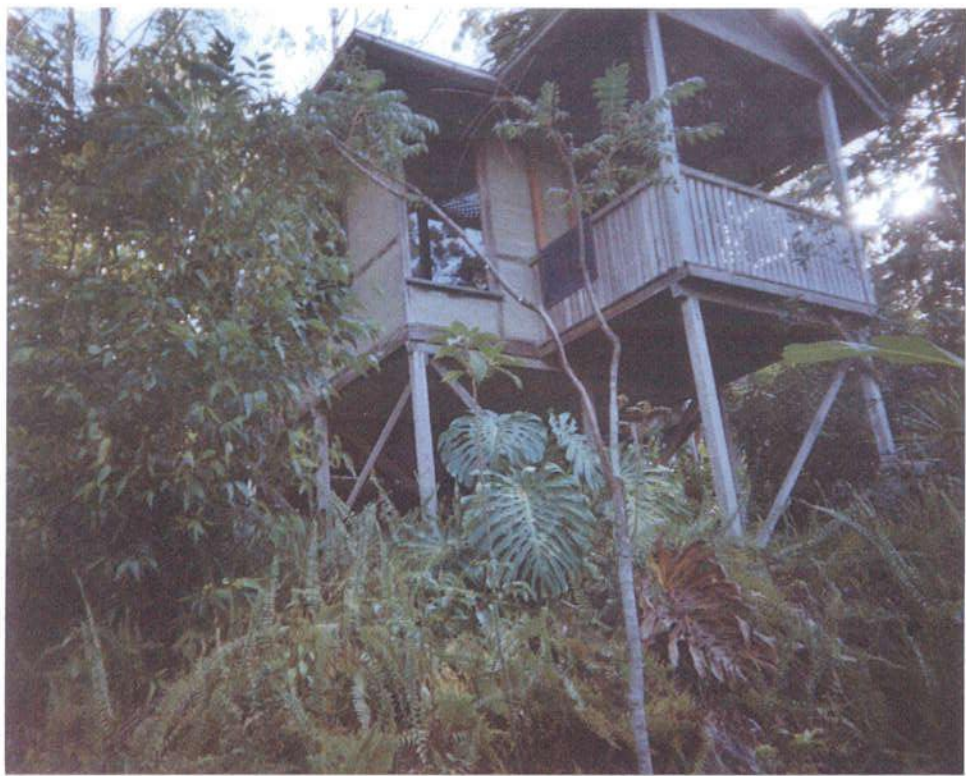
Canopy



Windbreak shelters paddock garden area



canopy cools workshop



Gum tree reflections
in a home among
the Gum Trees.
understory of palms

Peter Hamilton

From: "Craig Bohm" <nsw@mccn.org.au>
To: <valhalla@midcoast.com.au>
Sent: Wednesday, 5 February 2003 4:34 PM
Subject: MPA News - Victorian MPA process

Read and weep everyone. Read and weep.

Extract from MPA News Vol. 4, No. 7 (February 2003)

on Victorian MPA process (PART 2 refers to the Channel Island process in US)

BALANCING ECOLOGY AND ECONOMICS, PART II: LESSONS LEARNED FROM PLANNING AN MPA NETWORK IN VICTORIA, AUSTRALIA

In 2002, the Australian state of Victoria and the American state of California approved plans for representative networks of marine protected areas in their waters. Involving long and contentious planning processes, both efforts offer lessons to practitioners and stakeholders around the world who face similar challenges in designing MPA systems.

In a two-part series, MPA News distills lessons learned during each process by examining the obstacles encountered and how participants might have improved the processes in hindsight. Part II of the series, focusing on Victoria, appears in this issue. (Part I, on the Channel Islands National Marine Sanctuary in California, appeared last month [MPA News 4:6].)

*** Background on Victoria planning process ***

The process to plan a system of marine national parks in Victoria lasted 10 years, involved six periods of public comment, and was overseen by three successive state governments. Initially intended to be a four-year process, the planning effort encountered extensions and delays due to a range of factors, including evolving views on the comparative value of multiple-use parks and no-take areas.

The effort began in 1991 with work by the Land Conservation Council (LCC), an independent statutory authority that conducted land-use planning for the Victorian government. Charged with offering recommendations for a representative system of marine parks, the LCC released a draft final report in 1996 that proposed designating 21 multiple-use MPAs, of which relatively small portions would be set aside as no-take zones.

While in the process of finalizing recommendations, the LCC was disbanded by the state government. In its place, the government established another independent body, the Environment Conservation Council (ECC), which took charge of planning a marine park system. The ECC consisted of three members from the fields of academia, agriculture, and finance, respectively, each of whom had extensive experience in natural resources management. In 1998, the ECC published an interim report that again canvassed public comment on objectives for the selection of MPAs on a

multiple-use basis.

By that time, however, a shift in mindset was occurring within the ECC: council members had begun to change their view on the ability of multiple-use protected areas to protect Victoria's marine biodiversity. Deciding that science indicated no-fishing areas would offer greater protection, the ECC effectively changed its course, moving toward a system of no-take MPAs.

In December 1999, the ECC released a report for public comment in which it proposed a network of no-take marine national parks and no-take marine sanctuaries covering roughly 6.2% of Victoria's marine waters. (Marine national parks were to be considerably larger than marine sanctuaries.) Following the comment period and consultation, the ECC made several changes to proposed site boundaries and submitted a final report to the Victorian environment minister in August 2000, recommending 13 marine national parks and 11 marine sanctuaries. The ruling Labour government submitted a bill based on the recommendations to the state parliament, which held authority to approve the new MPA system.

The parliament received significant lobbying on the bill from stakeholder groups. In an effort to secure support for the legislation, the Labour government modified several park boundaries and proposed a temporary, capped system of financial assistance for commercial fishermen to cover increased operating costs and reduced catches due to the new closures (MPA News 3:11). But support for the bill was lacking from opposition parties, whose backing was necessary for passage. A second version of the bill, introduced in 2002, featured additional boundary modifications and expanded the ability for fishermen to gain compensation. By this time, the proposed system covered 540 km², or 5.3% of state waters. The Victorian parliament passed it in June 2002.

The 13 marine national parks and 11 marine sanctuaries were proclaimed in November 2002. Bans on fishing took effect immediately at all but five sites; at these five, the bans will commence in 2004.

* Lessons learned *

MPA News interviewed six individuals who participated in the ECC planning process and/or legislative negotiations. Spanning government, NGOs, and the commercial and recreational fishing sectors, these participants described challenges faced by practitioners and stakeholders in the planning effort. Through these discussions, MPA News garnered the following lessons:

Lesson 1. Opposition is part of consultative processes on no-take areas.

Once the ECC shifted its focus toward designation of no-take areas, public comment on the council's proposals turned much more contentious. Attending a series of public meetings following release of their draft report, ECC members encountered strong opposition from fishermen concerned about the loss of their fishing areas. "The public meetings were particularly stressful," said John Lovering, ECC chairman. "They inevitably deteriorated into 'theatre of the absurd' in which constructive dialogue between the public and council became impossible." He said some disaffected individuals even threatened ECC members with harm.

Unlike the reserve-planning process for the Channel Islands in California

(MPA News 4:6), there was no effort made in Victoria to pursue community consensus on a marine park plan. "A consensus model was deliberately not chosen for this process," said Joan Phillips, who oversaw the government's marine park planning effort from 1998 onward. Now manager of protected area establishment and policy for the Victorian Department of Sustainability and Environment, Phillips says the main challenge of the Victoria process centered on the impact on users. "Where users derive part of their livelihood from their use of resources - or their recreational use forms part of their identity - the process can very quickly become adversarial," she said. "The broader public interest and the interests of future generations are often lost in the ensuing debate." She acknowledges that impacts on fishermen are important to consider in MPA planning. She also points out that political bargaining appropriately ensured the establishment of compensation arrangements and other strategies for minimizing impacts. But the process's greatest strength, she says, was that the necessary social choices - i.e., which fishing areas to close - were made by government on behalf of all the people.

Tim O'Hara, senior curator of marine invertebrates for the state-run Museum Victoria, collated biodiversity data to inform the ECC planning study. "Because almost 100% of a coastline is usually fished, it is impossible to avoid the not-in-my-backyard syndrome," he said. "It is impossible to negotiate a solution that will not upset some fishers somewhere. This is unfortunate but unavoidable. It is similar to the establishment of other public-good enterprises, like hospitals, that disrupt those who live nearby."

Tim Allen, who served as Victoria coordinator for the Marine and Coastal Community Network (an NGO) through the planning effort, says consultative processes should be carefully tailored to suit individual communities. "While the ECC used a range of techniques to facilitate public input to the process, [the council] soon became aware that public meetings were not one of the better strategies employed in smaller communities," said Allen, now national coordinator for his organization. "Public meetings tended to work against the process as they established an opportunity for opponents to 'grandstand'. With many meetings [filled] with vocal recreational and commercial fishermen, potential supporters were intimidated on occasion. The meetings also helped to establish entrenched regional media opposition to the process that was hard to counter."

Lesson 2. Advisory bodies should strive to maintain a reputation of independence.

"The planning process needs to be driven by a planning body, like the ECC, that is completely independent of the [ruling] government, government bureaucracy, and all other vested interests," said Lovering. "Members of the planning body also need to have a high level of credibility for independent and unbiased decisionmaking with all stakeholders."

While the ECC's investigation of marine national parks was underway, says Lovering, the three members of the council were generally accepted as being independent of the various vested interests involved in discussions of no-take areas. Nonetheless, that changed once the ECC released its draft report in 1998. "The commercial and recreational fishers decided the ECC was a threat to their activities and carried out a campaign to discredit the independence of the ECC and its draft report," he said. "As a result, when the council went to conduct public meetings explaining its draft recommendations, these groups disrupted them. It may have helped to

restore order if the meetings had been chaired by somebody independent of the ECC, its draft report, and other stakeholders."

Ross McGowan, executive director of Seafood Industry Victoria, an industry group, said the ECC failed to consider all stakeholders' interests equally. "We must find a balance between competing interests and aspirations, recognizing that all have valid opinions," he said. "Does a fisher have the same rights as a conservationist?" McGowan said consultation was too late and not transparent enough. "The process of consultation is always one that, with hindsight, can be improved."

Ray Page, executive officer of VRFish, a leading organization of recreational anglers in Victoria, says the process should have been run by an organization consisting of stakeholders. "[Planning MPAs] should not totally be a government responsibility," he said. He says the outcomes did not satisfy most stakeholders. "A consultative group should have been convened at the commencement of the process, with representatives from major stakeholders. This group should then have agreed on terms of reference for the planning process, and could have been used as a steering committee for the entire process." The final results may not have been different, he said, but at least stakeholders would have felt more involved.

Lesson 3. For supporters, educating the public on the need to protect biodiversity is critical.

The majority of the public does not have a strong view in either direction about MPAs, says Phillips. For proponents of the marine national parks plan, this meant that success would come from building public appreciation for the importance of protecting marine biodiversity. "Because the most obvious stakeholders are commercial or recreational fishers who may be genuinely anxious about their futures, much of the public discussion focuses on addressing issues raised by these groups," she said. "However, when the general public is presented with simple messages about protecting marine biodiversity - accompanied by visual material such as underwater video footage - their understanding and support for MPAs increases. In the Victorian case, mobilizing some of the support in the broader community was vital to securing bipartisan support for the legislation."

"Be prepared for a long haul in educating stakeholders to the need for fully protected marine areas," said the ECC's Lovering. "There is one thing that I think we should have done earlier, and that was to have had a professional communications company establish at a very early stage a process to market the crucial importance to future generations of establishing a system of marine national parks."

Allen says that absent a strong communications effort by the ECC, NGOs largely carried the responsibility for disseminating information on the need for the planning process and MPAs. The fact the process lasted 10 years allowed NGOs time to build an active constituency across many sectors, including scientists, divers, and local government. "The length of time associated with the process created a persuasive public argument - i.e., there must be a positive outcome after 10 years of public discussion and scientific input," said Allen.

For O'Hara, the main challenge of the process was establishing the public ethic in favor of no-take areas. "The principle was gradually accepted by the majority of Victorians, who came to appreciate the beauty of the

marine environment and accept the conservation needs of marine ecosystems," he said. "No-take marine national parks and marine sanctuaries were eventually seen as a vote winner by the two largest political parties in the parliament."

Lesson 4. For opponents, negotiation is sometimes a better strategy than total opposition.

When the ECC disclosed its intent to recommend large no-take areas, VRFish argued that such measures would enhance neither fish stocks nor the marine environment in general, and that recreational fishing had little impact on marine ecosystems. It has maintained these positions. However, the organization chose to negotiate with the government in the final legislative stages rather than oppose all MPAs outright. In a 31 July 2002 media release ("An Open Letter to All Recreational Fishers", <http://www.vrfish.com.au/asp/announcement.asp>), VRFish Chairman Pat Washington said the government had made clear there would be marine national parks with or without the support of the fishing community. VRFish took the view that it was best to negotiate to minimize the impact, rather than fight the bill and potentially end up losing more fishing areas.

Washington wrote further in the July 2002 VRFish newsletter (<http://www.vrfish.com.au/news/jul02.htm>), "Despite the disappointment in the final legislation, I feel that we have made significant changes to the legislation and our position in this debate has been justified. The introduction of these parks was inevitable. The changes made through VRFish negotiating with the government have been significant, and could not have been achieved through any other method."

Washington also stated that street demonstrations against the marine national parks, as were led by other MPA opponents, could only work if many thousands of people were willing to attend. Poorly attended demonstrations proved to be counter-productive, he said, and sent a message to the government that anglers were not concerned about marine national parks.

Lesson 5. There are benefits to pursuing an "all-at-once" strategy for creating an MPA system.

Phillips says the state of Victoria's effort to plan MPAs across all of its waters in one process, rather than in a piecemeal fashion, was a good move. "It was helpful in identifying issues and implications, as well as tradeoffs for the commercial fishing industry in particular," she said. "This approach delivered some certainty to commercial fishing license holders, who at the end of this process do not face the threat of having more areas restricted for MPA purposes in the immediate future."

"Making recommendations that would significantly alter marine management across 10,000 km² of state waters was never going to be an easy task," said Allen. "But it did offer benefits. First, it focused the public debate not only on the values of parks themselves, but on the principles of representativeness, adequacy, and comprehensiveness. The statewide approach also raised the public and political profile of the issue, and fostered widespread community knowledge about marine biodiversity in the process. This will have long-lasting benefits."

Although percentage-based targets were not established for the process,

the percentage figure of state waters covered by the system proved to be useful for MPA supporters in the public debate, said Allen. "It was not seen as unreasonable by the public that 6% of the state's coastal waters should be protected," he said.

* Outcomes of the process *

Commercial and recreational fishing organizations have joined in criticizing the marine national parks legislation for doing little to address what they view as the real ecological problems facing Victoria's waters, including urban and rural runoff, seagrass dieback, and introduced pest species. And it remains to be seen how costly the compensation framework - a key part of legislative negotiations - will be. Under the compensation scheme, assistance will be available to commercial fishing license holders for up to three-and-a-half years, depending on the type of fishing license held and the park site. A three-member assessment panel, including at least one fishing-industry representative, will determine compensation for those who show they suffered financial losses (i.e., reduced catches and increased operating costs) due to the new no-take areas. The panel's decisions may be appealed to an independent tribunal. Eligible charter boat operators may also file for compensation to cover increased operating costs.

Industry sources have estimated compensation claims could total tens of millions of dollars, but government officials are confident the amount will be much less, with fishermen adjusting relatively easily to the new system.

Allen says NGOs will continue to strive for improved marine management practices throughout state waters. In the Victoria MPA-planning process, he says, NGOs' most important goal was to retain the no-take principle through the legislative negotiations, which they achieved. Although he is disappointed that the negotiations modified boundaries for non-scientific reasons, such boundaries can always be revisited. "And in time, I have no doubt they will be," he said.

In the meantime, Parks Victoria, the state parks agency, has taken charge of the new MPA system. It is now finalizing a management strategy for the entire network, setting out statewide objectives for planning, operations and research. That strategy is expected to be completed soon and will be posted on the agency website, at <http://www.parkweb.vic.gov.au>.

For more information:

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* TABLE: Characteristics of Victorian and Channel Islands (US) representative MPA networks *

DESCRIPTION

- Victoria: 13 marine national parks, 11 marine sanctuaries.
- Channel Islands National Marine Sanctuary (CINMS): 10 marine reserves and 2 marine conservation areas. (These are in state waters within the CINMS. A proposed second phase of designation, involving federal waters, would add one marine reserve and expand boundaries of some existing areas.)

SIZE

- Victoria: 540 km².
- CINMS: 450 km². (The proposed federal phase would expand this to 1100 km².)

REGULATION OF FISHING

- Victoria: Fishing is prohibited in marine national parks and marine sanctuaries.
- CINMS: Fishing is prohibited in marine reserves but allowed on a limited basis in marine conservation areas.

PERCENTAGE OF REGION SET ASIDE AS NO-TAKE

- Victoria: 5.3% of Victoria state waters.
- CINMS: 10% of CINMS. This figure excludes the marine conservation areas. (The proposed federal phase would expand this to 25%.)

ALLOWED ACTIVITIES

- Victoria: Diving, boating, research.
- CINMS: Diving, boating, research.

DOES NETWORK INCLUDE REPRESENTATIVE EXAMPLES OF ALL MARINE HABITATS IN REGION?

- Victoria: Yes.
- CINMS: Yes.

MPA NEWS

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