

2020 Taupo-nui-ā-Tia Action Plan

*An Integrated Sustainable
Development Strategy for the
Lake Taupo Catchment*

Joint Statement

It is with great pleasure that Tūwharetoa Māori Trust Board and Environment Waikato present the 2020 Taupo-nui-ā-Tia Action Plan - a plan to achieve the community's long-term vision for Lake Taupo.

The Taupo community has identified 12 key values they want to protect for the future of Lake Taupo. These values form the foundation for this plan. All of us are responsible for key actions in the 2020 Taupo-nui-ā-Tia Action Plan and are working together to protect the Lake for future generations.

The strategy represents three years of commitment from the following groups: 2020 Joint Management Group and Project Team, 2020 Forum, Tūwharetoa Māori Trust Board, Environment Waikato, Taupo District Council, Department of Conservation, Department of Internal Affairs and the Lakes and Waterways Action Group.

The development of the plan would not have been possible without funding from the Ministry for the Environment's Sustainable Management Fund and the vision of the Minister for the Environment, the Hon. Marian Hobbs, who saw New Zealand's very first iwi and community integrated catchment strategy as a reality for Lake Taupo.

We commend this plan and look forward to your involvement in achieving the values and actions set out in it.

Tūwharetoa Māori Trust Board
Chairman
Tumu Te Heuheu

Environment Waikato
Chairman
Neil Clarke

List of Abbreviations

2020 TAP	2020 Taupo-nui-ā-Tia Action Plan
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DIA	Department of Internal Affairs
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DoC	Department of Conservation
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EW	Environment Waikato
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EIMP	Ngāti Tūwharetoa Environmental Iwi Management Plan
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2020 JMG	2020 Joint Management Group
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LTCCP	Long-Term Council Community Plan
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LTDC	Lake Taupo Development Company
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LWAG	Lakes and Waterways Action Group
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NT	Ngāti Tūwharetoa
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TDC	Taupo District Council
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TMTB	Tūwharetoa Māori Trust Board
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Taupo-nui-ā-Tia

Tia was one of the great rangatira who came to Aotearoa in the great migrations from Hawaiki.

During his exploration of this new land he found himself and his followers camped beside a great body of water in a place know as Hamaria. It was while at this camp site that Tia noticed some distance away a rocky cliff which faced the lake. It appeared to Tia that this cliff face resembled the cloak he wore about his shoulders.

This type of cloak was called *taupo*, and was made of closely woven material with an outer covering of flax leaves, coloured yellow and black and was used as protection from rain.

Tia went to the bottom of the cliff where he recited incantations, Tia removed his cloak and fastened it to the cliffs and named them Taupo-nui-ā-Tia 'the great cloak of Tia'. The name Taupo-nui-ā-Tia now refers to the Lake itself and the vast surrounding catchment.

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Taupo community values

Commercial opportunities

The tourism industry based on the Lake's natural features and values, and the hydropower schemes of the Tongariro and Waikato Rivers, provide national economic benefit.

Clear water

The water of Lake Taupo-nui-ā-Tia is clear and clean with visibility extending many metres through the water column.

Ngāti Tūwharetoa values

The hapū of Ngāti Tūwharetoa assert their custodial and customary right of tino rangatiratanga over Taupo-nui-ā-Tia and will collectively sustain and protect the Mauri of the tribal taonga.

Diverse plants and animals in lakes and rivers

The Lake and rivers support a wide range of ecosystems and natural habitats for native and introduced flora (plants) and fauna (animals).

Foreshore reserves

Extensive Lakeshore reserves provide public access to the Lake and the opportunity to enjoy the scenery and recreation activities on its margins. Foreshore reserves also act as a buffer in urban areas and protect the views for homeowners in the area.

Geological features

The many interesting and scenic geological features of the Lake and its surrounding catchment contribute to the beauty of the area and to recreational enjoyment.

Good trout fishing

Lake Taupo-nui-ā-Tia is an internationally renowned trout fishery.

High quality inflowing water

The high quality of water flowing into Lake Taupo-nui-ā-Tia from the Tongariro River, streams and groundwater helps maintain the natural circulation and quality of the Lake.

Outstanding scenery

The views and vistas of Lake Taupo-nui-ā-Tia are enhanced by the many foreshore reserves, areas of native and introduced vegetation, topography of the Lake margins and the surrounding hills and mountains. The lack of human-made eyesores or prominent structures also contributes to the scenic qualities of the area. The unique features contribute to the high level of natural character.

Recreational opportunities

Lake Taupo-nui-ā-Tia and its margins are accessible to a wide variety of passive and active recreational activities. There is untapped potential for additional recreational activities.

Safe swimming

The waters of Lake Taupo-nui-ā-Tia meet the current New Zealand swimming water standards. The Lake has little rubbish and litter and is physically safe to swim in.

Safe drinking water

The water in most areas of Lake Taupo can currently be drunk untreated. The New Zealand drinking water standards can be used as a guide to the continued health of the water, as they set out the levels of contaminants that are acceptable in drinking water for Council water supplies.

Weed-free Lake

Lake Taupo is weed-free compared to many other New Zealand lakes. There are only limited areas of nuisance weed growth.

Wilderness areas

The remaining areas of wilderness on the margins of the Lake provide unique habitat and contribute to the scenic qualities. Wilderness areas have open space and are remote, uncrowded, natural and tranquil.



Ngāti Tūwharetoa and the Lake Taupo-nui-ā-Tia community have, for a long time, been aware of the need for the area to develop sustainably to protect the health of Lake Taupo-nui-ā-Tia and its surrounding area. Over the past decade, the management of natural resources and the activities of public agencies in the Lake Taupo-nui-ā-Tia catchment have been ad hoc. The Lake is managed by many agencies with separate but complementary roles. Each agency fulfils its own functions and carries out its activities in accordance with its own capabilities and timetables. For some members of the public, this has resulted in confusion over agency roles and responsibilities, especially when consultation occurs.

2020 Taupo-nui-ā-Tia was a three-year project initiated by the Lakes and Waterways Action Group, Ngāti Tūwharetoa and the wider Taupo community. In July 2001, Tūwharetoa Māori Trust Board and Environment Waikato signed a contract with the Ministry for the Environment to develop an integrated sustainable development strategy to protect Lake Taupo-nui-ā-Tia and the catchment, taking into account the community and iwi values that had been identified as priorities. The strategy will be implemented through the activities of the statutory management agencies, iwi, businesses and the community.

The project is unique, as it is the first time a sustainable development strategy has been developed jointly by tangata whenua, the community and local and central Government agencies. It has also heralded the new directions of the Local Government Act and Long-Term Council Community Plans, as the process followed required strong integration and liaison between different agencies.



1.1 What does the community value about Lake Taupo-nui-ā-Tia?

2020 Taupo-nui-ā-Tia Action Plan (2020 TAP) is the final document that represents the integration of three years of work by the 2020 Project Team, the community, agencies and Crown Research Institutes. The project started by asking the community to identify a baseline of 12 values important to the health of Lake Taupo-nui-ā-Tia and its surrounding area. These values were identified through various surveys from 1998 - 2000 (Sanders, 2001) and were recognised through the Lake Taupo Accord 1998.

The 12 values are

- Clear water
- Diverse plants and animals in lakes and rivers
- Foreshore reserves
- Geological features
- Good trout fishing
- High quality inflowing water
- Outstanding scenery
- Recreational opportunities
- Safe drinking water
- Safe swimming
- Weed-free Lake
- Wilderness areas

Two other values (Commercial opportunities and Cultural values) were also identified as important by the Taupo community. However, these are not listed as separate values because economic aspects and cultural values are inherent in all the other 12 values. Subsequently, Cultural values has been renamed Ngāi Tūwharetoa values.



1.2 How was the Plan developed?

In order to develop the 2020 TAP, the project was split into three strands: iwi, community and science, with coordinators managing outputs from each. During the first two years of the project, a number of key publications were written out of each strand. A full list of these publications can be found in the back of this document and can be downloaded from the 2020 Website

www.taupoinfo.org.nz

The 2020 TAP is based on the best information and knowledge available and we have used this to set priorities for actions. Publications such as the 2020 Information Reviews, Policy Review (Britton, 2004) and the Environmental Iwi Management Plan (Nepia, 2003) were all produced so that the project team could work toward analysing the priorities for actions to protect Lake Taupo-nui-ā-Tia.

The best science and knowledge from Crown Research Institutes such as the National Institute of Water and Atmosphere, and the Institute of Geological and Nuclear Sciences also supported

the project. Experts analysed the threats to the values and the Lake, as well as looking into health, economic and quality of life issues.

An important task in developing the 2020 TAP was identifying the key issues, threats and risks to the community values. It was at this stage that the integration of the three work strands began. The full list of threats (over 130) were grouped into six categories, depending on their nature and effects (Table 1). Comparative risk assessments were completed for four groups of threats: ecological (Huser et al., 2002), health (McBride, 2003), iwi (Nepia, 2004) and quality of life (Stewart, 2004). The comparative risk assessments identified and prioritised risks or threats to the Lake, so that effective and timely actions to protect the Lake could be agreed.

To set priorities for the 2020 TAP, experts assessed the relative severity of the threats and ranked these in order of importance. Table 1 summarises the priority threats to the community values identified by the expert groups.

Table 1 Priority threats to the 2020 community values

Ecosystem health

Water pollution through:

- Nutrient enrichment from farming (run-off into the Lake)
- Sediment loading (ash) from large volcanic eruption
- Nutrient enrichment from sewage
- Loss of habitat and desirable species
- Animal and plant pests threaten native vegetation and desirable fish species (competition)
- Introducing new species affects ecological processes such as food web and distribution of species
- Nutrient enrichment causes reduction in trout growth and numbers.

Human health

Bacteria and other disease-causing organisms in:

- roof tank water - deposited by birds and possums
- Lake water - from wildfowl, septic tanks, pipe failure and stormwater
- groundwater - from surface leakage (inadequate wellhead protection)
- Lake water - from boat sewage discharge

Beach litter:

- Nails and glass shards - causing wound infection

Toxic algal blooms in:

- Lake water - impairing drinking-water quality at source

Chemicals in:

- groundwater - chemical contamination (Arsenic, Boron, Molybdesum) for susceptible people
- roof drinking - water, spray-drift contamination for general population
- groundwater - elevated nitrates impairing health of the very young.

Table 1 continued

Quality of life

- Sewage pollution in the water
- Toxic algal blooms
- Declining water clarity
- Weed growths along the shoreline
- Inappropriate sites for new subdivisions
- Invasive pests and weeds
- Overdevelopment of Taupo lakefront
- Restrictions to legal access
- Thefts and vandalism
- Beach litter
- Visual pollution
- Noise pollution
- Destruction of unique geological features.

Ngāti Tūwharetoa

- Confusion in the roles and responsibilities of government agencies in the management of natural resources within the Ngāti Tūwharetoa rohe
- Lack of partnership between Ngāti Tūwharetoa and government agencies in the management of natural resources within the Ngāti Tūwharetoa rohe
- Intellectual and cultural property rights of tangata whenua need to be protected
- Adverse effect on mauri through the mixing of waters from other catchments
- Discharge of human sewage and storm water into water bodies
- Need to make sure both hapū and tribal wāhi tapu are protected, while keeping their exact nature and location confidential to Kaitiaki
- Lack of knowledge on the status or condition of wāhi tapu areas
- Confusion about roles and responsibilities in enforcing the harvest of native species. This confusion results in insufficient protection of mahinga kai
- Ad hoc implementation of Crown Minerals Act 1991 and Resource Management Act 1991 by agencies in the area of mineral exploration
- The management of geothermal resources is controlled by statutory authorities as opposed to ngā hapū o Ngāti Tūwharetoa.

1.3 About the Plan

The Plan is made up as follows:

- **Part One Introduction**
- **Part Two Overview issues**
(relationships, Ngāti Tūwharetoa and commercial values) - these issues have an over-riding influence across all other values (they can be regarded as providing an umbrella for the other resource-related activities)
- **Part Three Environmental values**
- these include the 12 community values identified
- **Appendices**
- these expand on some of the details of this plan

Under each Community Value (or groupings of values) the following matters are covered:

- What does the community want to achieve?
- What are the main threats to the value?
- What is currently happening to manage this value?
- What needs to be done in addition to the current work to reduce the threats?
- What can you do to reduce the threats?
- How will we know that the value is being protected?
- What else do we need to find out about this value?

1.4 Community involvement

The key focus of Parts Two and Three of the 2020 TAP is on the section “what needs to be done in addition to the current work to reduce the threats?”

In this section the new actions to be undertaken by the agencies have been identified. These actions will assist the community to protect and enhance the values identified through the 2020 Taupo-nui-ā-Tia project.

The new actions are focused on the key statutory agencies, which include Tūwharetoa Māori Trust Board, Environment Waikato, Taupo District Council, Department of Conservation and Department of Internal Affairs. Between them, these agencies have the mandate to address these actions, on behalf of the community and Ngāti Tūwharetoa.

The Action Plan identifies an “action manager” for each new action (in bold type). This does not exclude other agencies or community groups from being involved with achieving the actions - it identifies which agency will take a lead in co-ordinating the actions. Some actions identify more than one “action manager”, which either indicates that there needs to be a co-ordinated approach between these agencies, or that this action needs to be equally addressed by other agencies.

It is critical to note that each year the agencies will identify which actions they plan to undertake and identify timeframes and resources. They will also report to the 2020 JMG on the actions they have completed in the past year. This information will be made public.

Monitoring indicators and performance standards are also included in the 2020 TAP to track whether the value is being protected, assess how effective the actions are and identify any emerging issues. To support the 2020 TAP, a detailed monitoring plan has been developed, which outlines how indicator monitoring will be implemented.

A research plan has also been developed to assess what additional information is needed on the values.

Note

These and other 2020 Reports produced can be downloaded from the 2020 website

www.taupoinfo.org.nz

The community has been represented in the 2020 Taupo-nui-ā-Tia project through the 2020 Forum and the Lakes and Waterways Action Group. The 2020 Forum was set up in February 2003 and has assisted the Project Team to prioritise the threats and develop actions to address these issues. Representatives from various sectors of the community, including health, tourism, forestry and farming, have been part of the Forum.

The Lakes and Waterways Action Group is a group of interested community members set up in 1997. Their vision is to be a leading advocate for the protection of Lake Taupo-nui-ā-Tia and its waterways and other local catchment environments. The Lakes and Waterways Action Group meets monthly and advocates for the sustainable use of these resources.

The 2020 Forum and the Lakes and Waterways Action Group will continue to oversee the implementation of the 2020 TAP and encourage community involvement and ongoing dialogue in the solutions for Lake Taupo-nui-ā-Tia.

There is also a commitment from the 2020 JMG and the key agencies to involve the community and tangata whenua in the implementation of the 2020 TAP, by taking ownership of the plan and being part of the solutions. 2020 TAP is a community and Ngāti Tūwharetoa-owned plan, as this is where the drive for 2020 Taupo-nui-ā-Tia came from.



1.5 Who will implement the 2020 Taupo-nui-ā-Tia Action Plan?

The implementation of the 2020 TAP will be the responsibility of the 2020 JMG. The members will include representatives from Tūwharetoa Māori Trust Board, Environment Waikato, Taupo District Council, Department of Conservation and Department of Internal Affairs. All these agencies have responsibilities for actions in the plan.

The 2020 JMG meetings will be held quarterly and the administration of this group will be handled through the 2020 coordinator. Taupo District Council and Environment Waikato have allocated funding for implementation through their Long-Term Council Community Plans (2004).

1.6 Final comments

The 2020 Taupo-nui-ā-Tia Project has been a long and enjoyable journey. The support of the agencies, community and Ngāti Tūwharetoa in progressing the work is gratefully acknowledged. The future of Lake Taupo-nui-ā-Tia is protected through the actions in the Plan, but more importantly through the commitment of agencies, iwi and individuals in the community to work together.



2.1 Relationships between agencies and groups

During the process of identifying the community values and threats that were associated with them, a number of common “institutional” issues were identified. These are over-arching issues that need to be addressed jointly between the key agencies involved in working towards achieving the community values. The new 2020 JMG, which will oversee the implementation of the 2020 TAP, will have a critical role in bringing the parties together.

What does the community want to achieve?

- Clarify the different roles and responsibilities of the different management agencies and groups involved in managing Lake Taupo-nui-ā-Tia
- Make sure that work areas are co-ordinated so that overlaps and gaps are identified and avoided.

What are the main threats to achieving effective relationships between agencies and groups?

- Lack of legal protection - especially geothermal sites and the South Taupo wetland areas
- Limited funding - lack of financial assistance for environmental education and community initiatives

- Uncertainty of who should pay - lack of action, expensive legal costs
- Uncertain roles and responsibilities - lack of implementation of policies and management solutions, inefficiencies and duplication.

What is currently happening to manage these threats?

The 2020 Taupo-nui-ā-Tia project was set up to (among other things) encourage integration between the key management agencies in the Lake Taupo catchment. In identifying the following new actions, we acknowledge that a future 2020 JMG will need to be established to implement the 2020 TAP. We also plan that the existing community liaison through the Lakes and Waterways Action Group and Taupo 2020 Forum would be continued.

In accordance with the Local Government Act 2002, both TDC and EW are working on identifying community outcomes and developing their Long-Term Council Community Plans. This will mean working together with a range of other agencies and community sectors. The proposed 2020 JMG will provide both TDC and EW with an important forum to help identify priorities, monitor and report on community outcomes for Taupo.

Appendix 1 sets out the different roles and responsibilities of the key agencies involved in implementing this Plan.

What needs to be done in addition to the current work to reduce the threats?

New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Establish a new 2020 JMG with core representation from TDC, EW, DoC, DIA and TMTB to discuss and coordinate work priorities, budgets and opportunities for working together (such as sharing information and joint enforcement), to achieve the community values. Appoint a part-time co-ordinator to support the 2020 JMG and assist in co-ordinating the implementation of the 2020 TAP.	✓	✓	✓	✓	✓	
DoC, DIA, TDC, EW and TMTB shall jointly review the actions included in this Action Plan annually in October of each year: <ul style="list-style-type: none"> to make sure the actions remain appropriate and to identify any further actions that should be considered to identify which actions they will be undertaking in the coming year(s) and will therefore be included into their Long Term Council Community Plans, annual plans or business plans to ensure monitoring expectations set out in the 2020 Taupo-nui-ā-Tia Monitoring Plan are included into work programmes. 	✓	✓	✓	✓	✓	
DoC, DIA, TDC, EW and TMTB shall each provide an annual report to the new 2020 JMG (in October of each year) outlining the actions that have been carried out in the past financial year or those which are still in progress, the results of any monitoring undertaken and an assessment as to whether the implementation of the Action Plan has been effective in meeting the community values. This annual report should be available to the public.	✓	✓	✓	✓	✓	
DoC, DIA, TDC, EW and TMTB shall undertake to jointly review the research gaps identified in the 2020 Taupo-nui-ā-Tia Research Plan every two to three years. EW shall co-ordinate the research priorities and make sure appropriate research providers and funding agencies are aware of these priorities when they are developing proposals or seeking national funding. A review of the research strategy and of the monitoring plan should also be undertaken every three years.	✓	✓	✓	✓	✓	
Publicise new information relating to the community values or the Action Plan, including, for example, community involvement stories, progress reports on indicators or other monitoring and regular press releases.						✓

New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Retain the 2020 Taupo-nui-ā-Tia website and make sure the information is updated (including reviewing and updating the Taupo Bibliography and Information Inventory) and adding an outline of each agency's budgeting and work programming for undertaking actions identified in this Plan (this may be a link to the individual agency's website).						✓
Provide a feedback form on the website for people to raise queries when they are confused about roles/responsibilities.						✓
Provide for regular liaison with the community through the Lakes and Waterways Action Group, the 2020 Forum and the Taupo Eco Centre to encourage the exchange of ideas and information and allow community groups to get involved in different actions.						✓
Lobby for a regular free "environmental" column in the local newspaper and use it as a means for informing the public about progress being made on achieving the 2020 values.						✓
Contribute to regular teachers' workshops on the progress made with the 2020 community values.	✓	✓	✓	✓	✓	
Promote an environmental expo to showcase actions relating to the Lake Taupo-nui-ā-Tia Action Plan (consider an annual event or combining with other appropriate environmental events).						✓
Develop an Implementation Plan for 2020 TAP, covering the initial two years of operation and outlining, for example, details of initial tasks to be undertaken, staff and budgets allocated, timeframes and monitoring.						✓
Develop a list for public distribution of funding options that exist within and outside the domain of the statutory agencies, but which could be used to contribute to the community outcomes sought across all values.						✓

What can you do to help reduce the threats?

- Keep in touch through LWAG, the 2020 Forum, newspapers and the website www.taupoinfo.org.nz
- Ask the agencies for their annual reports on 2020 TAP
- Get involved in the LTCCP, annual plans and business plans of the agencies
- Talk to the co-ordinator (who will be appointed to help implement 2020 TAP) if you have queries or issues about 2020 TAP.

How will we know that the value is being protected?

Monitoring indicators that will be used include:

- Agency performance in implementing 2020
- Community awareness of and involvement in 2020 values
- Community environmental views and attitudes
- Community satisfaction with local environment
- Number of complaints.

(Refer to Appendix 3 for more details on the monitoring indicators.)



2.2 Ngāti Tūwharetoa Values

The hapū of Ngāti Tūwharetoa assert their custodial and customary right of tino rangatiratanga over Taupo-nui-ā-Tia and will collectively sustain and protect the mauri of these tribal taonga. Ngāti Tūwharetoa hold a holistic view of the environment, which is at the very core of all Ngāti Tūwharetoa decision-making with respect to environmental management. These new action steps identified below are the first stage of implementing the Tūwharetoa Environmental Iwi Management Plan.

What does Ngāti Tūwharetoa want to achieve?

- Improve communication between agencies, tangata whenua and the community in general
- Recognise and provide for the role of Ngāti Tūwharetoa as Treaty partners in resource management decision making processes
- Recognise and protect the intellectual and cultural property rights of tangata whenua
- Upgrade sewage and stormwater systems to reduce the adverse impacts on Lake Taupo-nui-ā-Tia
- Protect, enhance and restore wāhi tapu
- Manage and participate in decision-making about resources in their rohe.

What are the top ten threats to Ngāti Tūwharetoa values?

1. Confusion about the roles and responsibilities of government agencies in the management of the natural resources within the Ngāti Tūwharetoa rohe
2. Lack of partnership between Ngāti Tūwharetoa and government agencies in the management of the natural resources within the Ngāti Tūwharetoa rohe
3. Intellectual and cultural property rights of tangata whenua need to be protected
4. Adverse effects on Mauri through mixing waters from other catchments
5. Discharging treated sewage and stormwater into water bodies
6. Need to ensure the protection of both hapu and tribal wāhi tapu, while keeping their exact nature and location confidential to Kaitiaki
7. Lack of knowledge on the status or condition of wāhi tapu areas
8. Confusion about the roles and responsibilities in enforcing the harvest of native species. This confusion results in insufficient protection of mahinga kai
9. Ad hoc implementation of Crown Minerals Act 1991 and Resource Management Act 1991 by agencies in the area of mineral exploration
10. The management of geothermal resources is controlled by statutory authorities as opposed to nga hapu o Ngāti Tūwharetoa.

Key existing Policy documents include

- Ngāti Tūwharetoa Environmental Iwi Management Plan.

1. Confusion about the roles and responsibilities of government agencies in the management of the natural resources within the Ngāti Tūwharetoa rohe

What is currently happening to manage this threat?

The Taupo-nui-ā-Tia 2020 Policy Overview (December 2003) showed that the roles and responsibilities of various agencies are complementary. However, this is not clear to Ngāti Tūwharetoa or the wider community.

The Local Government Act 2002 requires the different agencies to work jointly in considering the outcomes that the community and tangata whenua may seek. The future 2020 JMG will have a role in improving inter-agency communications. Refer also to Appendix 1.

What needs to be done in addition to the current work to reduce the threats?

	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
New Actions						
Improve communication between agencies, iwi and the community in general, by ensuring that: <ul style="list-style-type: none"> agency roles and responsibilities are clearly identified on the 2020 website a brochure is prepared which identifies roles and responsibilities and key contact points within agencies (a quick checklist of activities or key issues versus agency) iwi liaison representatives at agencies are clearly identified to Ngāti Tūwharetoa hapū and contacts listed on the 2020 website. 						✓
Establish the Tūwharetoa Environmental Unit to: <ul style="list-style-type: none"> provide environmental services and information to Tūwharetoa hapū be a point of contact for agencies assist agencies in understanding and to facilitate better management of cultural values. 	✓					

Notes

A review of actions and an annual report (clarifying timeframes, actions planned and actions completed) will be carried out by TDC, EW, DIA, DoC and TMTB, in accordance with the related actions under Relationships between agencies and groups.



2. Lack of partnership between Ngāti Tūwharetoa and government agencies in the management of the natural resources within the Ngāti Tūwharetoa rohe
3. Intellectual and cultural property rights of tangata whenua need to be protected

What is currently happening to manage these issues?

A number of statutes refer to the principles of the Treaty of Waitangi, including the Resource Management Act 1991. The Local Government Act 2002 also enables greater participation of Māori in local government decision-making. Existing relationships provide a strong basis for moving forward to develop partnerships further. The existing intellectual property rights system does

not recognise the holistic and collective ownership of matauranga Māori well. Māori have a general concern about the ownership of biological resources and the inability of existing law to protect native cultural and intellectual property rights. As a result of the Wai 262 claim, it is expected that the Waitangi Tribunal may give some further guidance on managing this issue.

What needs to be done in addition to the current work to reduce the threats?

New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Continue developing and implementing relationships, protocols and consultation procedures between NT and EW, DoC, DIA and TDC. Note: there are a range of different mechanisms for implementing this.	✓	✓	✓	✓	✓	
Develop an Iwi Research Strategy to complement the areas of further research identified under other values in this Plan.	✓					
Investigate the potential for establishing joint management bodies covering resources of significance to Ngāti Tūwharetoa (such as joint management of south Taupo wetland between Ngāti Tūwharetoa hapū and DoC).	✓					
Determine the best ways to involve Ngāti Tūwharetoa in decision-making and the management of key or significant issues (such as through joint planning for stormwater management for the Taupo-nui-ā-Tia catchment), while recognising statutory responsibilities.	✓	✓	✓	✓	✓	
Consider RMA Hearings Commissioners who are conversant in Tikanga Māori be appointed to consider resource consents that impact on iwi values identified through the Environmental Iwi Management Plan.	✓	✓	✓			

New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Ngāti Tūwharetoa to develop trigger criteria, in conjunction with EW and TDC, to identify which RMA consent applications EW and TDC should forward to Ngāti Tūwharetoa for their consideration.	✓	✓	✓			
Identify the process required (with a guideline of expectations, responsibilities to be met and risks involved) to enable an RMA section 33 Transfer of Powers. This could provide hapū with the opportunity to undertake management responsibilities for a specific resource, where the resource issue would be identified on a case-by-case basis.	✓	✓	✓			
Develop a Tūwharetoa Policy Statement on intellectual and cultural property rights and forward to agencies and ensure they are aware of and consider how it might be implemented.	✓					
Ensure that RMA policy statements and plans (and encourage plans or policies of other agencies) to take account of the Tūwharetoa policy on the protection of intellectual and cultural property rights, where appropriate.	✓	✓	✓	✓	✓	
Regular liaison with agencies to consider resource management applications or other situations that may impact upon intellectual and cultural property rights.	✓	✓	✓	✓	✓	
Each Tūwharetoa hapū to establish a working environmental committee.	✓					
Tūwharetoa hapū establish hapū environmental iwi management plans.	✓					

Notes

A review of actions and an annual report (clarifying timeframes, actions planned and actions completed) will be carried out by TDC, EW, DIA, DoC and TMTB, in accordance with the related actions under Relationships between agencies and groups.

4. Adverse effect on Mauri through mixing waters from other catchments

What is currently happening to manage this issue?

Only Ngāti Tūwharetoa can speak with authority about the adverse effects on mauri through mixing waters from other catchments within their rohe. The ability for Ngāti Tūwharetoa to actively protect and enhance mauri is pivotal to the concept Kaitiakitanga. Broadly, mauri can be described as the central life force or principle. For a full definition of mauri, dialogue must take place with Ngāti Tūwharetoa.

Mixing waters from other catchments occurs as part of the operations of the Tongariro Power Development. These waters are again used by Mighty River Power down the Waikato River. As part of the renewal of resource consents for the

Tongariro Power Development, Ngāti Tūwharetoa and Genesis established the Tūwharetoa Genesis Group. This group has the task of managing the mitigation package negotiated. One of the key roles of the Tūwharetoa Genesis Group is to consider funding applications for cultural, environmental and economic projects as per the mitigation agreement. The ongoing activities of the Tūwharetoa Genesis Group will go some way towards providing off-set mitigation of the adverse effect of Tongariro Power Development operations.

A mitigation package and management group has also been negotiated with Mighty River Power.

What needs to be done in addition to the current work to reduce the threats?

New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
The ongoing consideration of applications for cultural environmental and economic projects by the Tūwharetoa Genesis Group and the Tūwharetoa Mighty River Power Group, as part of the existing mitigation agreement.	✓					
Ngāti Tūwharetoa whānau, hapū and iwi undertaking projects that enhance the mauri of taonga.	✓					

Notes

A review of actions and an annual report (clarifying timeframes, actions planned and actions completed) will be carried out by TDC, EW, DIA, DoC and TMTB, in accordance with the related actions under Relationships between agencies and groups.

Refer also to Threat 2: Lack of partnership regarding involvement in decision-making.

5. Discharge of treated sewage and stormwater into water bodies

What is currently happening to manage this issue?

Environment Waikato manages discharges (direct and non-point source) from land into waterways. TDC controls land use and is also responsible for urban stormwater management. There is currently a rule in the Waikato Regional Plan prohibiting the discharge of untreated sewage into the Lake. The discharge of treated sewage to waterways is abhorrent to Ngāti Tūwharetoa - the principle position of Tūwharetoa is that all sewage is to be dispersed on land. Local authorities also have statutory responsibilities under a range of

legislation to ensure the health and safety of people, the natural environment and property.

TDC is encouraging the implementation of low impact stormwater systems or land based disposal options in preference to direct discharges to waterways within the Lake Taupo catchment. This is addressed through their structure plans and in their LTCCP. TDC is also required to monitor its stormwater discharges to comply with its resource consent. Refer also to Clear water and High quality inflowing water.

What needs to be done in addition to the current work to reduce the threats?

New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Liaison and information sharing with Ngāti Tūwharetoa (impacted hapū) on the priorities TDC has or will set for upgrading sewage and/or stormwater systems within the District.	✓		✓			
Ensure that consultation with hapū is a prerequisite of any proposed changes to existing treatment systems and that hapū are involved in the design and monitoring regimes.	✓					
Map existing direct discharges made to the Lake and monitor and report on the quality of the discharge.		✓	✓			

Notes

A review of actions and an annual report (clarifying timeframes, actions planned and actions completed) will be carried out by TDC, EW, DIA, DoC and TMTB, in accordance with the related actions under Relationships between agencies and groups.

Refer also to Clear water and High quality inflowing water regarding sewage.



6. Need to ensure the protection of both hapū and tribal wāhi tapu, while keeping their exact nature and location confidential to Kaitiaki

7. Lack of knowledge on the status or condition of wāhi tapu areas

What is currently happening to manage these issues?

Different legislation requires the recognition and protection of wāhi tapu. There are some existing policies in the Resource Management Act and Conservation Plans. While the Ngāti Tūwharetoa Environmental Iwi Management Plan identifies the need to protect wāhi tapu and information about the sites, there is currently no tribal inventory.

TDC has started a project that will identify hapu sites. Another example of wāhi tapu protection is the Te Horehore agreement. These projects/agreements have identified a need and both are

the first of their kind for Ngāti Tūwharetoa. It is important to note that the action steps identified below are hapū based and each hapū will deal with this particular issue in their own manner (while one process to protect wāhi tapu may work for one hapū it may not be suitable for another).

The tribal position is that Ngāti Tūwharetoa assert and exercise tino rangatiratanga and Kaitiakitanga over wāhi tapu and other sites of significance in accordance with ngā hapū o Ngāti Tūwharetoa tikanga and kawa.

What needs to be done in addition to the current work to reduce the threats?

New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
TDC in consultation with TMTB (Enviro Unit/hapū) will develop wāhi tapu procedures to look at developing or improving wāhi tapu policy.	✓		✓			
Promote Regional Plan provisions and consent conditions to ensure wāhi tapu are protected.	✓	✓				
Provide administrative support to hapū to implement restoration programmes that could be funded by the Tūwharetoa Genesis Group.	✓					
Do a search of museums within the Region (and nationally if appropriate) to see what tribal/hapū taonga are held. Ensure those items are cared for appropriately and create a database of them.	✓					
Once Ngāti Tūwharetoa policy direction is established in relation to a database and/or protection of wāhi tapu, review relationships with statutory plans of the different agencies.	✓	✓	✓	✓		

Notes

A review of actions and an annual report (clarifying timeframes, actions planned and actions completed) will be carried out by TDC, EW, DIA, DoC and TMTB, in accordance with the related actions under Relationships between agencies and groups.

Refer also to Threat 3: Intellectual and cultural property rights and refer to Threat 1: Confusion about roles and responsibilities regarding establishment of the Tūwharetoa Environmental Unit.

8. Confusion about roles and responsibilities in enforcing the harvest of native species. This confusion results in insufficient protection of mahinga kai

What is currently happening to manage this issue?

There is some confusion over how customary rights to traditional resources are managed under the various related pieces of legislation. TMTB has responsibilities for managing access to native fisheries for customary use under Fisheries Act regulations. Protecting mahinga kai is closely linked to protecting biodiversity. Refer also to Diverse plants and animals in lakes and rivers.

What needs to be done in addition to the current work to reduce the threats?

	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
New Actions						
Clarify and inform people of the roles and responsibilities in relation to harvesting native species, customary use and protecting mahinga kai.	✓					

Notes

A review of actions and an annual report (clarifying timeframes, actions planned and actions completed) will be carried out by TDC, EW, DIA, DoC and TMTB, in accordance with the related actions under Relationships between agencies and groups.

Refer to Threat 1: Confusion about roles and responsibilities regarding establishment of the Tūwharetoa Environmental Unit.

- 9. Ad hoc implementation of Crown Minerals Act 1991 and Resource Management Act 1991 by agencies in the area of mineral exploitation
- 10. The management of geothermal resources and features is controlled by statutory authorities as opposed to ngā hapū o Ngāti Tūwharetoa

What is currently happening to manage these issues?

Sustainable mineral use and adequate site restoration are of primary concern to Ngāti Tūwharetoa. Access to mineral resources is governed by the Crown Minerals Act 1991 through the Ministry of Economic Development, which issues permits/licences. The environmental effects associated with mineral use are considered by EW/TDC through the RMA resource consent process. Section 4 of the Crown Minerals Act requires the Ministry of Economic Development to have regard to the principles of the Treaty of Waitangi. However, hapū are not actively involved in the permitting process.

Geothermal resources and features are a taonga and are of considerable importance to Ngāti Tūwharetoa hapū. As Kaitiaki, who hold rangatiratanga over geothermal resources, ngā hapū o Ngāti Tūwharetoa are responsible for ensuring that the Mauri of the resource is sustained for future generations. Resource consents are required for the development of geothermal resources in accordance with Environment Waikato’s Regional Plan.

Ngāti Tūwharetoa hapū are involved in a number of consent applications relating to geothermal resources including Contact Energy at Wairakei, Mighty River Power and Tauhara North No.2 Trust. The Tuaropaki Trust is an example of a geothermal development by Māori.

What needs to be done in addition to the current work to reduce the threats?

New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Facilitate access to baseline data and monitoring information held or gathered by other agencies.	✓					

Notes

A review of actions and an annual report (clarifying timeframes, actions planned and actions completed) will be carried out by TDC, EW, DIA, DoC and TMTB, in accordance with the related actions under Relationships between agencies and groups.

Refer also to Threat 2: Lack of partnerships regarding s33 Transfer of Powers Process and Threat 1: Confusion about roles and responsibilities regarding establishment of Tūwharetoa Environmental Unit.

How will we know that Ngāti Tūwharetoa values are being protected?

While specific action steps have been identified, establishing clear monitoring indicators is more difficult. As this Plan is a living document, key monitoring indicators will be developed as the action steps are implemented.

Monitoring indicators that will be used or developed further include:

- Tangata whenua have an increased awareness of roles and responsibilities of agencies
- Active partnerships are established at a hapū and tribal level with DoC, DIA, TDC, and EW
- Ngāti Tūwharetoa is involved in decision-making about resources
- Energy mitigation funds are used effectively
- The diversity of native species is maintained or enhanced
- Tangata whenua knowledge of the number and status of geothermal sites increases
- An increase in Tūwharetoa direct participation in research undertaken within the rohe (Ngāti Tūwharetoa accessing research funding).

What can you do to help reduce the threats?

- Ask the TMTB Environmental Unit if you need clarification of roles, responsibilities or statutory processes
- Get involved in the LTCCP and community outcomes processes of TDC and EW.

What else do we need to know about in the future?

Ngāti Tūwharetoa believe that a Tūwharetoa Research Strategy should be developed. This would complement the areas of further research identified under the other values in this plan. The use of traditional knowledge by iwi and other researchers would need to be carried out under a strict kaupapa māori research framework.

(Note: A description of the research needs and a full ranking of research priorities across all values is shown in the document *2020 Taupo-nui-a-Tia Research Plan* by Hall and Matheson.)



2.3 Commercial opportunities

The tourism industry based on the Lake's natural features and values and the hydropower schemes of the Tongariro and Waikato Rivers, provide national economic benefit.

What does the community want to achieve?

- ECO Development - growing the economy while protecting the ecology (growing and diversifying the economy while protecting the environment)
- Economic development that builds on the community values and does not negatively impact on them
- Commercial ventures that provide meaningful and long-term employment, which does not degrade the Lake and its catchment for future generations.

What are the main threats to commercial opportunities?

Threats to:

- Business development - limited infrastructure, restrictive regulatory environment, low educational status of workforce, poor water quality
- Diversification of land use - climate and soil fertility
- Energy generation - natural hazards, climate change, fluctuating Lake levels, land subsidence
- "Added value" developments for primary industries - low educational status of workforce, lack of suitable land for industry, lack of infrastructure
- Tourism expansion - poor water quality, limited infrastructure, high crime, overcrowding, noise, loss of scenic/landscape values
- Community development - lack of tourism infrastructure, lack of skilled workers
- Water quality - nutrients, land intensification, forestry harvesting, recreational boating, increased visitor numbers and traffic volumes, new roads/buildings

- Recreational resource - nutrients, erosion, increased numbers of boats and visitors, water abstraction and damming, Lake level changes, overcrowding
- Habitat and ecological values - nutrients, sediment loads from forestry and construction, water abstraction for hydropower, Lake level changes, new tourist infrastructure, marinas, increased numbers of users and visitors
- Aesthetic qualities - water clarity, large tracts of plantation, low Lake levels, noise, over development, increased visitor numbers.

What is currently happening to manage this value?

The Taupo community, through the Lake Taupo Communities Economic Partnership Steering Committee, has developed an economic strategy for the District. The Lake Taupo Development Company currently has a three-year contract with TDC to implement the strategy. The Lake Taupo Development Company holds regular industry reference group meetings to provide guidance and advice on commercial activities or issues.

Key existing Policy documents actions include

- Taupo District Economic Development Strategy
- VAST - Vibrant and Sustainable Taupo.



What needs to be done in addition to the current work to reduce the threats?

New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Assist in the review of the Economic Development Strategy (through the Lake Taupo Community Regional Economic Steering Group).			✓			
Encourage commercial operators on and near the Lake to adopt an environmental code of practice focused on protecting the Lake Taupo water quality, wilderness experience and scenery.		✓	✓	✓	✓	✓
Support the establishment and further development of the Taupo Eco Centre by providing resource material, information on the 2020 TAP progress and indicator results. Eco operators could also be promoted through this Centre.						✓
Undertake a study to determine the carrying capacity for commercial operators and assess cumulative effects on the Lake and foreshore reserves.			✓			

Notes

A review of actions and an annual report (clarifying timeframes, actions planned and actions completed) will be carried out by TDC, EW, DIA, DoC and TMTB, in accordance with the related actions under Relationships between agencies and groups.

What can you do to help reduce the threats?

- Consider how your business/personal actions could contribute to ECO development
- Conduct an energy and waste audit of your business.

How will we know that the value is being protected?

Monitoring indicators that will be used include:

- Growth in the local economy
- An increase in job opportunities
- A diverse and skilled labour force.

(Refer to Appendix 3 for more details on the monitoring indicators.)

Environmental values



This part of the Action Plan covers:

- 3.1 Clear water and High quality inflowing water
- 3.2 Diverse plants and animals in lakes and rivers
- 3.3 Good trout fishing
- 3.4 Recreational opportunities and Foreshore reserves
- 3.5 Safe drinking water
- 3.6 Safe swimming
- 3.7 Weed-free Lake
- 3.8 Wilderness areas, Outstanding scenery and Geological features



3.1 Clear water and High quality inflowing water

CLEAR WATER

The water of Lake Taupo-nui-ā-Tia is clear and clean with visibility extending many metres through the water column.

HIGH QUALITY INFLOWING WATER

The high quality of water flowing into Lake Taupo-nui-ā-Tia from the Tongariro River, streams and groundwater helps maintain the natural circulation and quality of the Lake.

What does the Community want to achieve?

- The water quality in Lake Taupo-nui-ā-Tia continues to be in the “satisfactory to excellent” range for the maintenance of ecological health
- The water clarity in Lake Taupo-nui-ā-Tia continues to be in the “near pristine” range
- Inflowing waters maintain their high quality status.

What are the main threats to clear water and high quality inflowing water?

- **Water pollution:**
 - from nutrient enrichment from farming (run-off into the Lake) and from sewage
 - sediment loading (ash) from large volcanic eruption.
- **Health impacts:**
 - pathogens in lake water, wildfowl, septic tanks, pipe failure, stormwater and boat sewage
 - pathogens in rivers, streams and groundwater from surface leakage (such as inadequate wellhead protection and septic tanks)
 - chemicals in rivers, streams and groundwater (such as elevated nitrates and spray drift contamination).
- **Quality of life impacts:**
 - sewage pollution
 - toxic algal blooms
 - declining water clarity
 - weed growth along the shoreline.

What is currently happening to manage these values?

DIA, DoC, EW, TDC and TMTB all have significant current policy guiding actions that affect water quality. EW and TDC both play a key role in managing this value.

EW is the key agency for managing discharges and taking of water from the Lake Taupo-nui-ā-Tia catchment and for ensuring the water quality is suitable for desired uses (such as swimming). TDC has resource consents for its stormwater discharges and is required to monitor these discharges. Water quality is also closely linked to land use, which is primarily controlled by TDC. TDC has a strong role under the Health Act to ensure the health of water supplies and sewage facilities. TDC has identified a number of works related to the upgrading of sewage and stormwater services through its Long-Term Council Community Plan. As required under the Local Government Act 2002, TDC will undertake an assessment of sanitary services (such as stormwater and sewage). The purpose of this assessment is to identify the quality and adequacy of the services, current and future demands, health and environmental impacts, options for meeting demands and the Council's role in meeting demands.

Currently EW, TDC, Central Government and Ngāti Tūwharetoa are involved in a major joint project focusing on the nutrient enrichment of Lake waters from different sources. This project (called Protecting Lake Taupo - a long-term strategic partnership) aims to reduce the input of plant nutrients into the Lake. Because of the long time it takes for nutrients to travel through the soil and groundwater into the Lake (30 to 80 years) it is believed that nutrient levels in the Lake will not decrease in the short to medium term. EW is also reviewing its rules relating to on-site sewage in the Waikato Regional Plan. EW implements Project Watershed, which focuses on flood protection, river management and soil conservation issues. EW is currently revising a plan for managing oil spills, which includes a team response involving TDC, NZ Police, DoC, NZ Fire Service and EW.

The potential effects from sediment loading from volcanic eruptions is identified through Environment Waikato's hazard plans. A major potential slip near Waihi is also being closely monitored as this could result in a major sediment loading into the Lake.

Key existing Policy documents/actions include

EW

- Waikato Regional Plan and the forthcoming variation resulting from the project Protecting Lake Taupo - a long-term strategic partnership (key document)
- Asset Management Plan - Lake Taupo Catchment Control Scheme
- Flood protection and river management proposals for significant rivers in Lake Taupo Catchment, Tongariro, Tauranga Taupo, Hinemaiaia and Tokaanu
- Clean Streams Project
- Various volcanic/lahar management plans.

TDC

- Proposed Taupo District Plan
- Asset Management Plans
- Code of Practice for the Development of Land
- Waste 2010
- TDC is also upgrading systems related to stormwater discharges and community sewage schemes.

DIA

- provides sewage pump-out facilities at DIA marinas at Taupo and Nukuhau, Tokaanu and Motuoapa (there are private facilities at Kinloch marina). A boat "porta pottie" disposal point is also provided at Two-Mile Bay.

TMTB

- Ngāti Tūwharetoa Environmental Iwi Management Plan. There is an agreement between the Crown and Ngāti Tūwharetoa for the management of the Lake Taupo Forest. This plan includes soil and water conservation objectives.



What needs to be done in addition to the current work to reduce the threats?

New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Reduce manageable nitrogen input into the lake by at least 20 percent through the work of the Protecting Lake Taupo Strategy and through a variation to the Waikato Regional Plan (including a new regime for controlling diffuse run-off of nutrients from all land and higher standards for wastewater disposal).	✓	✓	✓			
Consider expanding existing services to a mobile household hazardous waste collection service (Hazmobile) for old paints, oil chemicals, batteries, etc.		✓	✓			
Minimise any direct discharges to the Lake which contain chemical or bacterial contaminants (excluding natural discharges and stormwater).		✓	✓			
Manage stormwater catchments to reduce contaminants in run-off from entering the Lake (such as increasing range/type of settling ponds, treatment of road run-off, catchment reconfiguration to divert stormwater out of the catchment, educating people on use of stormwater drains, managing industrial and subdivision sites to avoid stormwater run-off).		✓	✓			
Avoid as far as practicable any new stormwater outlets into the Lake (direct discharges) and work towards retaining stormwater in the catchment areas.		✓	✓			
EW and TDC should agree on each agency's responsibilities for managing septic tanks and long drops, as a part of the Taupo variation to the Waikato Regional Plan. This includes monitoring and ensuring sub-standard septic tanks are upgraded or replaced.		✓	✓			
TDC and DoC to identify any long-drops (on-site sewage treatment systems) that need to be removed or upgraded to a sealed vault system to avoid impacts on groundwater.			✓	✓		
Consider the need to prohibit boat scraping and maintenance discharges from entering the Lake.		✓			✓	
As part of implementing the EW rule prohibiting sewage discharges to the Lake, require boats operating in Lake Taupo to have sewage holding tanks that can only be discharged into shore-side facilities, chemical toilets if capable of overnight stays or alternative receptacles if used as day trip boat.		✓	✓		✓	
Develop and implement an education promotion for boat owners to take responsibility for their boat sewage.	✓	✓	✓		✓	

New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Assess whether current boat sewage discharge facilities are sufficient and provide further sewage pump out facilities at key boat launching/mooring areas, if required. Clarify which agency will be responsible for maintaining the services provided.	✓	✓	✓	✓	✓	
Undertake a literature review to identify how boat sewage is managed in other Lakes (such as Lake Tahoe, Great Lakes and Scandinavia).		✓				
Develop guidelines for stormwater management in industrial areas.		✓	✓			
Support water quality sampling by students and interested members of the public to collect quality assured data.		✓				

Notes

A review of actions and an annual report (clarifying timeframes, actions planned and actions completed) will be carried out by TDC, EW, DIA, DoC and TMTB, in accordance with the related actions under Relationships between agencies and groups.

Refer also to Safe swimming regarding water quality for recreational activities, Safe drinking water regarding water quality for drinking water, Recreational opportunities and Foreshore reserves regarding providing facilities (such as toilets) around the Lake, Weed-free Lake regarding toxic algal blooms and Commercial opportunities regarding an environmental code of practice.

What can you do to help reduce the threats?

- Wash your car on the grass so soapy water soaks into the ground
- Don't tip anything down stormwater drains
- Clean up chemical spills around your house by soaking up the mess
- Take unused paints, oils and chemicals to Council collection points
- Get your septic tank checked and/or cleaned
- Don't use the Lake as your toilet
- Get involved in the water quality monitoring programme.

How will we know that the values are being protected?

Monitoring indicators that will be used include:

- Maintained water clarity
- Water quality for ecological health (lake)
- Reduced input of nutrients into Lake Taupo
- Dwellings on reticulated sewage
- Volume of treated sewage and stormwater
- Water quality for ecological health (rivers and streams)
- Water quality for recreation
- River biology
- Sediment loads.

(Refer to Appendix 3 for more details on the monitoring indicators.)

What else do we need to know about in the future?

Research into the following areas is identified as a priority:

Clear water:

- Determine the relationship between blue-green algal populations and water clarity
- Determine nutrient release from sediments in Lake Taupo
- Develop relationships between other water clarity variables and secchi depth
- Determine factors affecting the water clarity of Lake Taupo (such as algal populations and sediment loads)
- Determine the relationship between nitrogen dynamics and water clarity.

High quality inflowing water:

- Predictions of nitrogen loads entering Lake Taupo in the future
- Determine nutrient load under different land management practices
- Determine the relative importance of phosphorous and nitrogen loads to the Lake
- Assess nutrient removal through wetlands, filter walls, in-stream management and in ground below the root zone
- Determine the effectiveness and economics of nitrogen load reductions.

(Note: A description of the research needs and a full ranking of research priorities across all values is shown in the document *2020 Taupo-nui-ā-Tia Research Plan* by Hall and Matheson.)

3.2 Diverse plants and animals in lakes and rivers

The Lake and rivers support a wide range of ecosystems and natural habitats for native and introduced flora (plants) and fauna (animals).

What does the community want to achieve?

- No net loss of aquatic diversity or habitat for native and desirable introduced flora and fauna
- Lake and rivers support a diverse range of natural habitats for plants and animals.

What are the main threats to diverse plants and animals in lakes and rivers?

- **Loss of habitat and desirable species:**
 - animal and plant pests threaten native vegetation and desirable fish/bird and invertebrate species
 - introducing new species affects ecological processes such as food web and the distribution of species drainage of wetlands.
- **Water pollution:**
 - from nutrient enrichment from farming (run-off into the Lake and stock in waterways) from sewage
 - nutrient enrichment impacts on invertebrates (rivers and streams).
- **Quality of life impacts:**
 - invasive pests and weeds.

What is currently happening to manage this value?

This value recognises the emphasis on aquatic biodiversity for both Lake and river/stream waters. While there are some existing policies there may be further policies developed if a possible National Policy Statement on Biodiversity is prepared. EW has negotiated a Clean Stream Accord with Fonterra for dairy farms to fence waterways and wetlands. The Regional Pest Management Strategy addresses some pest fish species.

Key existing Policy documents/actions include

EW

- Biodiversity Strategy
- Asset Management Plan - Lake Taupo Catchment Control Scheme
- Clean Streams Project
- Regional Pest Management Strategy.

DoC

- Conservation Management Strategy
- Tongariro National Park Management Plan.



What needs to be done in addition to the current work to reduce the threats?

New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Develop an inter-agency approach to “pest fish” management.	✓	✓		✓		
Undertake a feasibility trial for enhancing native fish species in selected sites (where there is no trout access - identify extent to which trout impact on native populations).	✓	✓		✓		
During the statutory review of the Regional Pest Management Strategy, revise those plants and animals that are new and potentially significant threats to Lake Taupo. Take all measures possible to minimise the risk of new infestation.		✓		✓		
In conjunction with other agencies, promote public education on the associated risks of introducing new pest fish and aquatic weeds into the Lake.	✓	✓	✓	✓	✓	
Promote the protection of habitat and riparian margins as habitat for native fish and bird species throughout the catchment (through, for example, Environment Waikato’s Clean Streams project, schools and community groups).		✓	✓	✓		

Notes

A review of actions and an annual report (clarifying timeframes, actions planned and actions completed) will be carried out by TDC, EW, DIA, DoC and TMTB, in accordance with the related actions under Relationships between agencies and groups.

Refer also to Clear water regarding nutrients in lakes and rivers, Weed-free lake regarding aquatic weeds and Wilderness areas, Outstanding scenery and Geological features regarding protection of areas (especially wetlands).

What can you do to help reduce the threats?

- Don't put fish or plants into the Lake
- Don't wash your aquarium waters down the stormwater drains
- Get involved in riparian planting at your favourite stream/river
- Wash down your boat before it goes back into Lake Taupo if you have been using it in other lakes/waterways.

How will we know that the value is being protected?

Monitoring indicators that will be used include:

- Water quality for ecological health (Lake)
- Water quality for ecological health (Rivers and Streams)
- The level of nutrient input into Lake Taupo
- Protection of natural areas
- Number of catfish
- Number of native fish
- Plant and animal pests
- Sediment loads.

(Refer to Appendix 3 for more details on monitoring indicators.)

What else do we need to know about in the future?

Research into the following areas is identified as a priority:

- Develop a detailed understanding of remnant koaro ecology to enable the development of a conservation strategy for this species
- Establish the impact of catfish on koura and morihana
- Develop methods for preventing pest fish spread
- Determine the impact of pest fish on biodiversity in geothermal waters
- Determine the impact of alien species on geothermal stream invertebrates.

(Note: A description of the research needs and a full ranking of research priorities across all values is shown in the document *2020 Taupo-nui-ā-Tia Research Plan* by Hall and Matheson.)



3.3 Good trout fishing

Lake Taupo-nui-ā-Tia is an internationally renowned trout fishery.

What does the community want to achieve?

- Trout are healthy and in good numbers
- Lake Taupo-nui-ā-Tia maintains its international reputation for trout fishing.

What are the main threats to good trout fishing?

- **Water pollution:**
 - nutrient enrichment from farming (run-off into the Lake) and from sewage
 - sediment loading from large volcanic eruption
 - nutrient enrichment causes reduction in trout growth and numbers and impacts on invertebrates (rivers and streams).
- **Loss of habitat and desirable species:**
 - reduced trout spawning and rearing habitat
 - animal and plant pests threaten native vegetation and desirable fish species
 - introducing new species affects ecological processes such as food web and the distribution of species over-harvesting (over-fishing and poaching).

What is currently happening to manage this value?

DoC is the lead agency for managing the trout fishery and other wild fishery species. In addition, the Regional and District Councils are responsible for managing water and land issues that may impact on the fishery. The Waikato Regional Plan includes standards to protect trout in the lake (such as controlling sediment, temperature and dissolved oxygen). River works and flood management works require resource consents from EW. EW is leading a joint project to develop a catchment management accord for the Tongariro and Tauranga-Taupo Rivers. This project will focus on outcomes (such as protecting the trout fishery) and will have an operational focus. Refer also to **Clear water and High quality inflowing water** regarding managing water quality and nutrients.

Key existing Policy documents/actions include

- Taupo Sport Fishery Management Plan
- Proposed Taupo District Plan
- Waikato Regional Plan
- Clean Streams Project.

What needs to be done in addition to the current work to reduce the threats?

New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Review the Proposed District Plan to have particular regard to the habitat of key fish spawning areas, such as riparian edges.		✓	✓	✓		
Develop a series of best practice guidelines for river and stream works (for activities provided for in the Waikato Regional Plan), such as river and stream crossings, gravel removal and general in-stream works, to minimise adverse effects on the ecology of rivers and streams.		✓		✓		
Monitor the levels of biotoxins and heavy metals accumulating in trout and advise public of the results.				✓		

Notes

A review of actions and an annual report (clarifying timeframes, actions planned and actions completed) will be carried out by TDC, EW, DIA, DoC and TMTB, in accordance with the related actions under Relationships between agencies and groups.

What can you do to help reduce the threats?

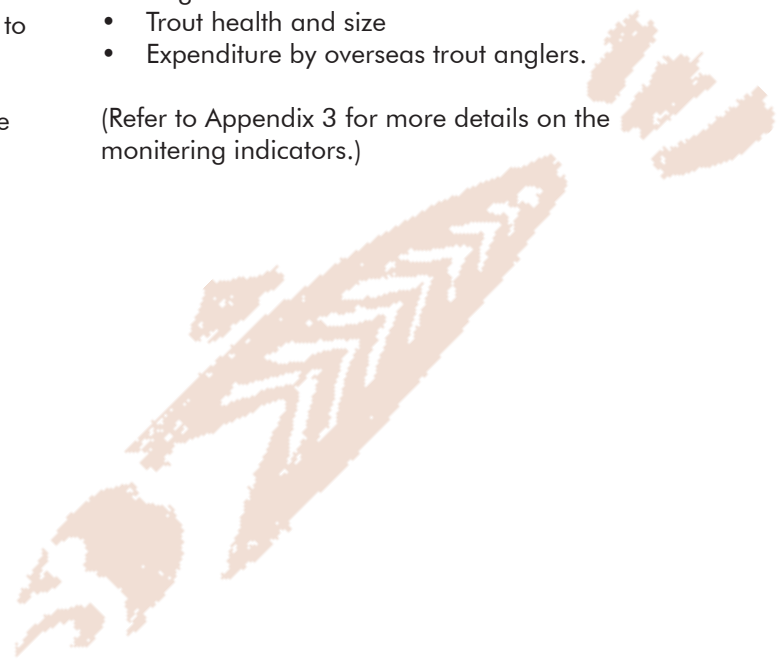
- Buy a Taupo Fishing Licence (as this money is used to look after the fishery)
- Report poachers and illegal fishing practices to DoC
- Report tagged fish to DoC
- Don't introduce any new species into the lake
- Don't wash your aquarium waters down the stormwater drain
- Get involved in riparian planting at your favourite stream/river.

How will we know that the value is being protected?

Monitoring indicators that will be used include:

- Angler satisfaction
- Trout health and size
- Expenditure by overseas trout anglers.

(Refer to Appendix 3 for more details on the monitoring indicators.)



What else do we need to know about in the future?

Research into the following areas are identified as priorities:

- Determine the factors that impact on juvenile trout survival in Lake Taupo
- Assess the impacts of changes in water quality on smelt and trout populations.

(Note: A description of the research needs and a full ranking of research priorities across all values is shown in the document *2020 Taupo-nui-ā-Tia Research Plan* by Hall and Matheson.)



3.4 Recreational opportunities and Foreshore reserves

RECREATIONAL OPPORTUNITIES

Lake Taupo-nui-ā-Tia and its margins are accessible to a wide variety of passive and active recreational activities. There is untapped potential for additional recreational activities.

FORESHORE RESERVES

Extensive lakeshore reserves provide public access to the Lake and the opportunity to enjoy the scenery and recreation activities on its margins. Foreshore reserves also act as a buffer in urban areas and protect the views for homeowners in the area.

What does the community want to achieve?

- The public is satisfied with legal access (that causes no environmental harm) to the Lake and surrounding areas
- The public is satisfied with Lake Taupo's facilities for passive and active recreation
- Recreational activities are well managed (with permits and concessions)
- Lakeshore reserves are maintained, added to, or improved to an appropriate level to meet the needs of the community as a whole
- Where appropriate, lakeshore reserves provide safe and convenient entry points for a range of recreational activities.

What are the main threats to recreational opportunities and foreshore reserves?

- **Water pollution:**
results in nuisance weed growth (hinders boating and swimming).
- **Human health impacts:**
 - toxic algal blooms
 - beach litter such as nails and glass
 - pathogens in water from septic tanks, pipe failure, stormwater, boat sewage.
- **Quality of life impacts:**
 - sewage pollution in water
 - toxic algal blooms
 - declining water clarity
 - weed growths along the shoreline
 - increasing urbanisation (overdevelopment of Taupo Lake front)
 - restrictions to legal access
 - beach litter
 - visual and noise pollution opportunities
 - overcrowding and congestion.



What is currently happening to manage these values?

These two values are closely linked. TDC, DoC, TMTB, DIA and EW have responsibilities for managing land reserves within the catchment of Lake Taupo-nui-ā-Tia and providing recreational access to areas. TDC and DIA also share a role in providing facilities for the recreational use of the lake waters. DIA is primarily responsible for managing the different recreational uses on the lake (from a navigation safety perspective). EW controls lake levels through conditions on resource consents for the two power companies, Mighty River Power and Genesis Power Limited. TDC has a litter strategy and seeks to manage the effects of litter on beaches through education and providing services such as rubbish bins and collection points. TDC also maintains the amenity and recreational values of reserves in accordance with service levels agreed through TDC's Asset Management Plans, and plans for future growth (this includes providing toilet facilities around the Lake). Access ways are signposted and mapped in brochures. Enforcing TDC's encroachment policy aims to ensure public access is maintained, by avoiding illegal/private encroachment onto public lands.

Public access to and along the lakeshore, natural character and aesthetic values are critical matters to be considered by both TDC and EW under the RMA. The Lake Taupo Development Company is currently looking at the feasibility of a walkway around the Lake. TDC is responsible for noise control issues and for roading/pedestrian issues. Unauthorised access over private land is a police matter. TDC, EW and Transit are involved in roading issues associated with growth of the area. TDC's District Plan provides a framework for future growth and development, including the balance between land use changes and wilderness.

Through Project Watershed, Environment Waikato manages river works and soils for conservation purposes, preventing accelerated soil erosion and providing for flood protection. This scheme is linked to the management of lakeshore reserves.

Key existing Policy documents/actions include

TDC

- Reserve Management Plans
- Proposed District Plan.

EW

- Asset Management Plan - Lake Taupo
- Catchment Control Scheme
- Project Watershed
- Waikato Regional Plan.

DIA

- Lake Taupo Navigation Safety Bylaws
- Lake Taupo Regulations.

DoC

- Lake Taupo Conservation Strategy.

What needs to be done in addition to the current work to reduce the threats?

New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Develop a brochure which sets out parking and launching etiquette for boaties using trailers, to encourage more efficient use of the boat ramps.					✓	
Develop a foreshore management strategy through a partnership to manage the interface between the land and water (covering hazards, erosion, structures, currents, Lake levels, weed infestations and so on).	✓	✓	✓	✓	✓	
Identify with signposts/maps in brochures appropriate access ways to the Lake, for all agencies with reserve lands adjacent to the Lake. Clarify (in a public document) the Queen's chain, riparian rights, esplanade areas, fishing streams and the effect of the Maori Land Amendment and Maori Land Claims Acts.	✓		✓	✓		
In conjunction with the TDC litter strategy, promote increased awareness of personal responsibilities for removing rubbish, campers and fishers with boaties, (in conjunction with Keep NZ Beautiful, schools and other community groups).		✓	✓		✓	

Notes

A review of actions and an annual report (clarifying timeframes, actions planned and actions completed) will be carried out by TDC, EW, DIA, DoC and TMTB, in accordance with the related actions under Relationships between agencies and groups.

Refer also to Clear water regarding managing water quality, Safe swimming regarding the link to Recreational activities and Wilderness areas, Outstanding scenery and Geological features regarding protecting areas and scenic vistas.

What can you do to help reduce the threats?

- Don't use the Lake as your toilet
- Take your rubbish away with you - don't dump it in the Lake
- Take your concerns about facilities to the Lake Taupo Facilities Planning and Development Forum, which is run by the Harbourmaster
- Get involved in any development or review of reserve management plans.

How will we know that the value is being protected?

Monitoring indicators that will be used include:

- Public satisfaction with access to waterways
- Public satisfaction with facilities
- Public satisfaction with recreational opportunities
- Protection of Lake foreshore.

(Refer to Appendix 3 for more details on the monitoring indicators.)

What else do we need to know about in the future?

Research into the following areas is identified as a priority:

- Determine the impacts of use on reserves and the surrounding environment
- Establish the recreational carrying capacity for Taupo
- Determine the potential environmental impacts of recreational use (in addition to littering, destruction of native forest and introduction of aquatic weeds).

(Note: A description of the research needs and a full ranking of research priorities across all values is shown in the document *2020 Taupo-nui-ā-Tia Research Plan* by Hall and Matheson).





3.5 Safe drinking water

The water in most areas of Lake Taupo can currently be drunk untreated. The New Zealand drinking water standards can be used as a guide to the continued health of the water, as they set out the levels of contaminants that are acceptable in drinking water for council water supplies.

What does the community want to achieve?

- Drinking water continues to meet the New Zealand drinking water standards.

What are the main threats to safe drinking water?

- **Water pollution:**
 - from nutrient enrichment from farming (run-off into the Lake) and from sewage
 - sediment loading (ash) from large volcanic eruption.
- **Human health impacts:**
 - pathogens in roof tank water from bird and possum deposits
 - pathogens in Lake water from septic tanks, pipe failure and stormwater
 - pathogens in groundwater from surface leakage (inadequate wellhead protection)
 - toxic algal blooms in Lake water, impairing drinking water quality at source
 - chemicals in groundwater (contamination, elevated nitrates).
- **Quality of life impacts:**
 - sewage pollution in the water
 - toxic algal blooms.

What is currently happening to manage this value?

Environment Waikato is primarily responsible for managing the quality of water resources. However, providing safe reticulated drinking water is the responsibility of TDC. Under the Local Government Act 2002, TDC is required to prepare an assessment of the provision of water supply, to identify the quality and adequacy of the service, current and future demands, health and environmental impacts, options for meeting the demands and the Council's role in meeting demands (including any proposed or new infrastructure). The Ministry of Health is also currently revising the standards for drinking water supply. Through its LTCCP, TDC has outlined its intent to upgrade treatment to meet the new standards. Therefore, no further new actions were identified.

Key existing Policy documents/actions include

TDC is planning to upgrade the quality of the District's community water supplies over the next eight years. This project will also address the need to manage the demand for water, to ensure efficient use.

Notes

Refer also to Clear water, with regard to stormwater and nutrients and Weed-free Lake in respect to algal blooms.

What can you do to help reduce the threats?

- Cover any outdoors water tanks that you have
- If you don't have access to reticulated water systems, get your water quality tested
- If you are building a new house, consider water efficiency measures, such as storing grey water for gardening purposes
- Don't waste water - the more you use, the more that needs to be treated.

How will we know that the value is being protected?

Monitoring indicators that will be used include:

- Faecal organisms
- Drinking water contaminants
- Toxic algal blooms.

(Refer to Appendix 3 for more details on the monitoring indicators.)

What else do we need to know about in the future?

Research into the following areas is identified as a priority:

- Epidemiological study of campylobacter and salmonella in rural water supplies compared with Taupo water supplies
- Determine the relationship between algae concentrations and the depth of water to assist in positioning drinking water intakes
- Investigate the relationship between algal species, biotoxin production and taste and odour problems in Taupo water supply.

(Note: A description of the research needs and a full ranking of research priorities across all values is shown in the document *2020 Taupo-nui-ā-Tia Research Plan* by Hall and Matheson).



3.6 Safe swimming

The waters of Lake Taupo-nui-ā-Tia meet the current New Zealand swimming water standards. The Lake has little rubbish and litter and is physically safe to swim in.

What does the community want to achieve?

- Beaches and other swimming areas meet the most current New Zealand recreational water standards
- Rubbish is reduced in and around the Lake
- Boat users adopt safe practice procedures when close to swimming areas.

What are the main threats to safe swimming?

- **Water pollution:**
 - nutrient enrichment from farming (run-off into the Lake) and from sewage
 - toxic algal blooms.
- **Human health impacts:**
 - pathogens in Lake water from septic tanks, pipe failure, stormwater and boat sewage
 - beach litter (such as nails and glass, which can create wounds causing infections).
- **Quality of life impacts:**
 - sewage pollution
 - toxic algal blooms
 - declining water clarity
 - weeds growth along the shoreline
 - beach litter
 - overcrowding and congestion (increase in boats and jet skis).

What is currently happening to manage this value?

The two aspects of safe swimming are managing water quality and the various activities on the Lake. EW is the lead agency for ensuring that the water quality is managed, while DIA is the lead agency for managing navigation safety through its new Bylaws and new Lake Taupo regulations. Where or when water quality falls below the bathing beach standards, EW and TDC instigate actions to determine what the cause is and how to address the problem. In instances where there are health concerns, TDC erects public notices, on the advice of the Ministry of Health.

The Lake Taupo Bylaws and regulations will affect different users of the Lake. There is also a Lake Taupo Facilities Planning and Development Forum, which involves a wide range of stakeholders who meet regularly to discuss issues the public have raised. EW, in conjunction with TMTB, also manages structures on the bed of the river (such as moorings and jetties). For activities relating to water quality, algal blooms and aquatic weeds refer also to **Clear water and High quality inflowing water** and **Weed-free Lake**.

Key existing Policy documents/actions include

DIA

- Lake Taupo Navigation Safety Bylaws
- Lake Taupo Regulations.

EW

- Waikato Regional Plan - Moorings.

TDC

- Waste 2010.

What needs to be done in addition to the current work to reduce the threats?

New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
In conjunction with LWAG, 2020 Forum members and schools support a regular litter survey of popular bathing beaches to identify the type and quantity of litter.			✓			
Promote personal responsibility for removing rubbish.	✓	✓	✓	✓	✓	

Notes

A review of actions and an annual report (clarifying timeframes, actions planned and actions completed) will be carried out by TDC, EW, DIA, DoC and TMTB, in accordance with the related actions under Relationships between agencies and groups.

Refer also to Clear water and High quality inflowing water with regard to boat sewage, Recreational opportunities regarding litter and Weed-free Lake for algal bloom and weed issues.

What can you do to help reduce the threats?

- Take your rubbish away with you - don't dump it in the Lake
- Avoid conflicts between users and promote safe experiences by taking note of speed restrictions and the different swimming, jet ski and mooring zones in the Navigation Safety Bylaw
- Take your concerns about facilities to the Lake Taupo Facilities Planning and Development Forum, which is run by the Harbourmaster.

How will we know that the value is being protected?

Monitoring indicators that will be used include:

- Water quality for recreation
- Toxic algal blooms
- Rubbish on beaches
- Navigation safety incidents
- Swimming only beaches
- Dwellings on reticulated sewage.

(Refer to Appendix 3 for more details on the monitoring indicators.)

What else do we need to know about in the future?

Research into the following areas is identified as a priority:

- Investigate the impacts of increased tourism and settlement on swimmer safety
- Develop an assay for pathogenic organisms in freshwater
- Determine implications of disease causing organisms such as enter viruses and adenoviruses in recreational waters.

(Note: A description of the research needs and a full ranking of research priorities across all values is shown in the document *2020 Taupo-nui-ā-Tia Research Plan* by Hall and Matheson.)

3.7 Weed-free Lake

Lake Taupo is weed-free compared to many other New Zealand lakes. There are only limited areas of nuisance weed growth.

What does the community want to achieve?

- Nuisance aquatic weeds are kept at levels which cause no harm to the Lake ecosystem or catchment waterways
- Nuisance aquatic weeds do not interfere with the recreational enjoyment of the Lake
- No new aquatic weeds introduced to the Lake or catchment waterways.

What are the main threats to a weed-free Lake?

- **Spread and growth of weeds algae/slimes:** from nutrient enrichment, farming and erosion (run-off into the Lake) and from sewage.
- **Loss of habitat:** Introducing new species affects ecological processes such as distribution of existing species.
- **Quality of life impacts:**
 - toxic algal blooms
 - weed growths along the shore
 - new invasive weeds.

What is currently happening to manage this value?

The lead agencies for managing aquatic weeds in Lake Taupo-nui-ā-Tia and its waterways are EW and DoC. There is a community Weed Group which meets regularly to discuss on-going management issues. Signage has been put up at various boat ramps asking boaties to be careful not to introduce new species. There is a boat wash-down facility at Kinloch. Weeds in Kinloch, Motuoapa and Taupo Boat Harbour, as well as at boat ramps, are harvested to minimise weeds spreading by boat propellers and to facilitate easier access. TDC has a strategy for collecting weeds on beaches following a storm event. EW currently undertakes a surveillance/monitoring programme related to the occurrence, type, distribution and health implications of algal blooms and disseminates information on this to the public.

EW inspects all nurseries at least annually to check for plants that are prohibited under the Regional Pest Management Strategy or banned under the National Pest Plant Accord (MAF), as they are considered to be significant pest weed threats and are illegal to sell.

(Refer also to **Clear water** regarding nutrients in the Lake).

Key existing Policy documents/actions include

- The Distribution and Potential Impacts of Egeria Densa and Other Oxygen Weeds in Lakes Taupo, Kuratau, Otamangakau and Rotoaira (NIWA client report DOC 01235, April 2001).
- Waikato Regional Plan - Protecting Lake Taupo Partnership Strategy
- Waikato Regional Pest Management Strategy
- DoC Conservation Management Strategy for Taupo/Tongariro Conservancy.



What needs to be done in addition to the current work to reduce the threats?

New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Provide further information (signs/brochures) to boaties and the general public to prevent new weeds being introduced into the Lake, and consider the need for further wash-down facilities.		✓	✓	✓	✓	
Review the Regional Pest Management Strategy and ensure that known weeds affecting the Lake waters are included and that potentially significant threats are not introduced.		✓		✓		
Establish a surveillance/monitoring programme to monitor the occurrence, type and distribution of existing weeds and to identify the risk of potential and actual new plants establishing in the Lake (including what threats exist from neighbouring lakes).		✓		✓		
Liaise with other Regional Councils about joint awareness of new weeds and educate the public about managing these threats.		✓				
Support weed/algae sampling by students and interested members of the public to collect quality reliable data on algal blooms or populations of new weeds.		✓				

Notes

A review of actions and an annual report (clarifying timeframes, actions planned and actions completed) will be carried out by TDC, EW, DIA, DoC and TMTB, in accordance with the related actions under Relationships between agencies and groups.

Refer also to Clear water regarding nutrient management and boat sewage.

What can you do to help reduce the threats?

- Report any occurrences of new weed species
- Get involved in algal bloom reporting
- Wash down your boat before it goes back into Lake Taupo if you have been using it in other lakes/waterways
- Don't empty any water or weeds from your fish pond or domestic aquariums into the stormwater drains.

How will we know that the value is being protected?

Monitoring indicators that will be used include:

- Distribution of weeds
- Occurrence of new weeds
- Toxic algal blooms.

(Refer to Appendix 3 for more details on the monitoring indicators.)

What else do we need to know about in the future?

Research into the following areas is identified as a priority:

- Determine the impacts of invasive aquatic weeds on biodiversity
- Determine the impact of catfish on ecosystem function and biodiversity
- Develop management techniques to protect and manage representative aquatic plant community and habitat types
- Assess the potential for increased shoreline stranding of aquatic plants.

(Note: A description of the research needs and a full ranking of research priorities across all values is shown in the document *2020 Taupo-nui-ā-Tia Research Plan* by Hall and Matheson.)



3.8 Wilderness areas, Outstanding scenery and Geological features

WILDERNESS AREAS

The remaining areas of wilderness on the margins of the Lake provide unique habitat and contribute to the scenic qualities. Wilderness areas have open space and are remote, uncrowded, natural and tranquil.

OUTSTANDING SCENERY

The views and vistas of Lake Taupo are enhanced by the many foreshore reserves, areas of native and introduced vegetation, topography of the Lake margins and the surrounding hills and mountains. The lack of human-made eyesores or prominent structures also contributes to the scenic qualities of the area. The unique features contribute to the high level of natural character.

GEOLOGICAL FEATURES

The many interesting and scenic geological features of the Lake and its surrounding catchment contribute to the beauty of the area and to recreational enjoyment.

What does the community want to achieve?

- There is no net loss of wilderness areas that are remote, uncrowded, natural and tranquil
- Nuisance weeds and pests are reduced in the catchment
- Wilderness areas are managed to protect their environmental values and the qualities that make them special places
- Views, vistas and natural character are maintained and protected from inappropriate development
- Geological features are protected from inappropriate development.

What are the main threats to Wilderness areas, Outstanding scenery and Geological features?

- **Water pollution:**
 - from sediment loading (ash) from large volcanic eruption.
- **Loss of habitat:**
 - animal and plant pests threaten native vegetation (competition)
 - introducing new species affects ecological processes such as food web and distribution of species
 - urbanisation increases invasive plant species destruction of natural areas.
- **Quality of life impacts:**
 - incremental land change and increasing urbanisation (such as inappropriate sites for new subdivision and over-development of Taupo lakefront)
 - restrictions to legal access
 - visual and noise pollution
 - destruction of unique geological features (especially geothermal springs)
 - overcrowding and congestion.

What is currently happening to manage these values?

DoC is the lead agency for managing wilderness areas that are a part of DoC-administered land. However, TDC and private owners are also involved in managing protected areas. The Regional and District Councils are required to provide for the protection of significant areas of native vegetation and habitat for native wildlife, outstanding landscapes and geological features through their respective RMA plans. The geothermal resource is currently being addressed through a variation to the Waikato Regional Plan.

TDC's District Plan provides a framework for future growth and development, including the balance between land use changes and preserving the natural character of Lake Taupo-nui-ā-Tia and protecting areas of significance. TDC is also addressing significant natural areas, outstanding scenery and geological features as a part of their structure plan process and through the re-assessment of landscape and natural value areas in the Proposed District Plan. EW carries out animal and plant pest control, while DoC carries out pest control to protect native species (plants and animals). Both DoC and TDC have responsibilities for rural fire control. Through the Lake Taupo Catchment Control Scheme and Project Watershed, EW manages land for water and soil conservation purposes.

Key existing Policy documents/actions include

- Tongariro National Park Management Plan
- Conservation Management Strategy for Tongariro/Taupo Conservancy
- Lake Taupo Conservation Strategy
- Kaimanawa Forest Park Management Plan
- TDC Proposed District Plan and Structure Plans
- Waikato Regional Policy Statement and Regional Plan
- EW and TDC Joint Contingency Plan for Waihi Landslide Site
- Regional Pest Management Strategy (EW)
- Forest Management Strategy (DoC)
- National Biodiversity Strategy
- Lake Taupo Catchment Control Scheme.



What needs to be done in addition to the current work to reduce the threats?

New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Identify and map existing legally-protected areas in the Lake Taupo catchment to enable a strategic overview of protected areas.	✓	✓	✓	✓		
Review information held on <ul style="list-style-type: none"> • key ecological areas • habitat areas (including for endemic species) • landscapes • ridge lines • headlands • important vistas • sites of heritage • cultural landscapes • geological • geothermal values that should be protected into the future. Ensure these areas are protected from inappropriate use and development pressures, through both the proposed District Plan and the Waikato Regional Plan.	✓	✓	✓	✓		
Identify the range of mechanisms that are available for protecting land and significant resources (EW Natural Heritage Protection Fund, covenants, QE II, DoC, Ngā Whenua Rauhi Kawenata, TDC reserves, Ngāti Tūwharetoa).	✓	✓	✓	✓		
Identify on the 2020 website what options are available for protecting land and wetlands in the catchment, who is responsible, what process is required for legally protecting areas and where funding might be sourced from.	✓	✓	✓	✓		
Protect the wetlands that adjoin Lake Taupo and in particular the South Taupo wetland. Educate and assist landowners to manage wetlands and forest remnants.		✓	✓	✓		
Promote the development of national guidelines for the protection of natural landscapes.		✓	✓			

Notes

A review of actions and an annual report (clarifying timeframes, actions planned and actions completed) will be carried out by TDC, EW, DIA, DoC and TMTB, in accordance with the related actions under Relationships between agencies and groups.

Refer also to Recreational opportunities and Foreshore reserves regarding recreational linkages.

What can you do to help reduce the threats?

- Get involved in submissions on TDC's structure plans and any variations to the District Plan
- Fence off streams, rivers, swamps and wetlands to prevent stock access
- Plant banks to help stabilise them and trap nutrients
- Get involved in community conservation projects to protect and restore significant areas of native habitat through fencing, planting and controlling weeds and animal pests.

How will we know that the value is being protected?

Monitoring indicators that will be used include:

- Threats from pests
- Protected landscapes and sites
- Public satisfaction with wilderness experience, natural character and vistas and the condition of geological sites
- Areas of significant natural features fenced
- Area of land in natural state.

(Refer to Appendix 3 for more details of monitoring indicators.)

What else do we need to know about in the future?

No high or medium research priorities were identified for this value.

(Note: A description of the research needs and a full ranking of research priorities across all values is shown in the document *2020 Taupo-nui-ā-Tia Research Plan* by Hall and Matheson.)





Environmental values

Appendices

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Roles and responsibilities

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List of actions by agency

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Appendix 4

List of 2020 Project reports



Appendices

Appendix 1

Roles and responsibilities

Tūwharetoa Māori Trust Board (TMTB)

07 386 8832

PO Box 87, Turangi

- Kaitiaki role
- Owners and managers of the bed of the Lake and tributaries
- Protecting the mauri of the Lake, rivers and streams.

Environment Waikato (EW)

Environment Waikato's Freephone
0800 800 401

www.ew.govt.nz

PO Box 4010, Hamilton East

- Water quality in rivers, streams, Lake Taupo and groundwater
- Discharges to the Lake (point source and indirect run-off)
- Riparian management
- Wetlands
- Soil conservation and river control
- Geothermal resources
- Air discharges
- Natural hazards and flood management
- Pest plants and animals (including pest fish).

Taupo District Council (TDC)

07 376 0899

www.taupodc.govt.nz

Private Bag 2005, Taupo

- Activities on the land (such as subdivision, new buildings and land use changes)
- Foreshore reserves
- Community services and facilities
- Infrastructure (such as drinking water supply, sewage, storm water and solid waste)
- Economic development.

Department of Conservation (DoC)

Turangi Office 07 386 8607

www.doc.govt.nz

Private Bag, Turangi

- National parks, forest parks and conservation areas
- Taupo trout fishery
- Conserving native species
- DoC foreshore reserves
- Managing weeds and animal pests
- Recreation on public conservation land.

Department of Internal Affairs (DIA)

Harbourmaster 07 378 7176

www.dia.govt.nz

PO Box 256, Taupo

- Navigation and safety
- Lake Taupo bylaws and regulations
- Moorings
- Lake facilities and landing reserve
- Ski lanes, jet skis and other uses of the Lake
- Commercial and rental licences.

Appendices

Appendix 2

Actions by Agency

Department of Internal Affairs (DIA)

Value	New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Clear and High quality water	Consider the need to prohibit boat scraping and maintenance discharges from entering the Lake.		✓			✓	
Clear and High quality water	As part of implementing the EW rule prohibiting sewage discharges to the Lake, require boats operating in Lake Taupo to have sewage holding tanks that can only be discharged into shore-side facilities, chemical toilets if capable of overnight stays or alternative receptacles if used as day trip boat.		✓	✓		✓	
Clear and High quality water	Develop and implement an education promotion for boat owners to take responsibility for their boat sewage.	✓	✓	✓		✓	
Clear and High quality water	Assess whether current boat sewage discharge facilities are sufficient and provide further sewage pump out facilities at key boat launching/mooring areas, if required. Clarify which agency will be responsible for maintaining the services provided.	✓	✓	✓	✓	✓	
Commercial opportunities	Encourage commercial operators on and near the Lake to adopt an environmental code of practice focused on protecting the Lake Taupo water quality, wilderness experience and scenery.	✓	✓	✓	✓	✓	
Ngāti Tūwharetoa values	Continue developing and implementing relationships, protocols and consultation procedures between NT and EW, DoC, DIA and TDC. Note: there are a range of different mechanisms for implementing this.	✓	✓	✓	✓	✓	
Ngāti Tūwharetoa values	Determine the best ways to involve Ngāti Tūwharetoa in decision-making and the management of key or significant issues (such as through joint planning for stormwater management for the Taupo-nui-ā-Tia catchment), while recognising statutory responsibilities.	✓	✓	✓	✓	✓	
Ngāti Tūwharetoa values	Ensure that RMA policy statements and plans (and encourage plans or policies of other agencies) to take account of the Tūwharetoa policy on the protection of intellectual and cultural property rights, where appropriate.	✓	✓	✓	✓	✓	
Ngāti Tūwharetoa values	Regular liaison with agencies to consider resource management applications or other situations that may impact upon intellectual and cultural property rights.	✓	✓	✓	✓	✓	

Department of Internal Affairs (DIA)

Value	New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Diverse plants and animals	In conjunction with other agencies, promote public education on the associated risks of introducing new pest fish and aquatic weeds into the Lake.	✓	✓	✓	✓	✓	
Recreation foreshore	Develop a brochure which sets out parking and launching etiquette for boaties using trailers, to encourage more efficient use of the boat ramps.					✓	
Recreation foreshore	Develop a foreshore management strategy through a partnership to manage the interface between the land and water (covering hazards, erosion, structures, currents, Lake levels, weed infestations and so on).	✓	✓	✓	✓	✓	
Recreation foreshore	In conjunction with the TDC litter strategy, promote increased awareness of personal responsibility for removing rubbish, with boaties, campers and fishers (in conjunction with Keep NZ Beautiful, schools and other community groups).	✓	✓		✓		
Relationships between agencies and groups	Establish a new 2020 JMG with core representation from TDC, EW, DoC, DIA and TMTB to discuss and coordinate work priorities, budgets and opportunities for working together (such as sharing information and joint enforcement), to achieve the community values. Appoint a part-time co-ordinator to support the 2020 JMG and assist in co-ordinating the implementation of the 2020 TAP.	✓	✓	✓	✓	✓	
Relationships between agencies and groups	DoC, DIA, TDC, EW and TMTB shall jointly review the actions included in this Action Plan annually in October of each year: <ul style="list-style-type: none"> to make sure the actions remain appropriate and to identify any further actions that should be considered to identify which actions they will be undertaking in the coming year(s) and will therefore be included into their Long Term Council Community Plans, annual plans or business plans to ensure monitoring expectations set out in the 2020 Taupo-nui-ā-Tia Monitoring Plan are included into work programmes. 	✓	✓	✓	✓	✓	

Department of Internal Affairs (DIA)

Value	New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Relationships between agencies and groups	DoC, DIA, TDC, EW and TMTB shall each provide an annual report to the new 2020 JMG (in October of each year) outlining the actions that have been carried out in the past financial year or those which are still in progress, the results of any monitoring undertaken and an assessment as to whether the implementation of the Action Plan has been effective in meeting the community values. This annual report should be available to the public.	✓	✓	✓	✓	✓	
Relationships between agencies and groups	DoC, DIA, TDC, EW and TMTB shall undertake to jointly review the research gaps identified in the 2020 Taupo-nui-ā-Tia Research Plan every two to three years. EW shall co-ordinate the research priorities and make sure appropriate research providers and funding agencies are aware of these priorities when they are developing proposals or seeking national funding. A review of the research strategy and of the monitoring plan should also be undertaken every three years.	✓	✓	✓	✓	✓	
Relationships between agencies and groups	Contribute to regular teachers' workshops on the progress made with the 2020 Community values.	✓	✓	✓	✓	✓	
Safe Swimming	Promote personal responsibility for removing rubbish.	✓	✓	✓	✓	✓	
Weed-free Lake	Provide further information (signs/brochures) to boaties and the general public to prevent new weeds being introduced into the Lake, and consider the need for further wash-down facilities.		✓	✓	✓	✓	

Department of Conservation (DoC)

Value	New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Clear and High quality water	TDC and DoC to identify any 'long-drops' (on-site sewage treatment systems) that need to be removed or upgraded to a sealed vault system to avoid impacts on groundwater.			✓	✓		
Clear and High quality water	Assess whether current boat sewage discharge facilities are sufficient and provide further sewage pump out facilities at key boat launching/mooring areas, if required. Clarify which agency will be responsible for maintaining the services provided.	✓	✓	✓	✓	✓	

Department of Conservation (DoC)

Value	New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Commercial opportunities	Encourage commercial operators on and near the Lake to adopt an environmental code of practice focused on protecting the Lake Taupo water quality, wilderness experience and scenery.	✓	✓	✓	✓	✓	
Ngāti Tūwharetoa values	Continue developing and implementing relationships, protocols and consultation procedures between NT and EW, DoC, DIA and TDC. Note: there are a range of different mechanisms for implementing this.	✓	✓	✓	✓	✓	
Ngāti Tūwharetoa values	Determine the best ways to involve Ngāti Tūwharetoa in decision-making and the management of key or significant issues (such as through joint planning for stormwater management for the Taupo-nui-ā-Tia catchment), while recognising statutory responsibilities.	✓	✓	✓	✓	✓	
Ngāti Tūwharetoa values	Ensure that RMA policy statements and plans (and encourage plans or policies of other agencies) to take account of the Tūwharetoa policy on the protection of intellectual and cultural property rights, where appropriate.	✓	✓	✓	✓	✓	
Ngāti Tūwharetoa values	Regular liaison with agencies to consider resource management applications or other situations that may impact upon intellectual and cultural property rights.	✓	✓	✓	✓	✓	
Ngāti Tūwharetoa values	Once Ngāti Tūwharetoa policy direction is established in relation to a database and/or protection of wāhi tapū, review relationships with statutory plans of the different agencies.	✓	✓	✓	✓		
Diverse plants and animals	Develop an inter-agency approach to “pest fish” management.	✓	✓		✓		
Diverse plants and animals	Undertake a feasibility trial for enhancing native fish species in selected sites (where there is no trout access - identify extent to which trout impact on native populations).	✓	✓		✓		
Diverse plants and animals	During the statutory review of the Regional Pest Management Strategy, revise those plants and animals that are new and potentially significant threats to Lake Taupo. Take all measures possible to minimise the risk of new infestation.		✓		✓		

Department of Conservation (DoC)

Value	New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Diverse plants and animals	In conjunction with other agencies, promote public education on the associated risks of introducing new pest fish and aquatic weeds into the Lake.	✓	✓	✓	✓	✓	
Diverse plants and animals	Promote the protection of habitat and riparian margins as habitat for native fish and bird species throughout the catchment (through, for example, Environment Waikato's Clean Streams project, schools and community groups).		✓	✓	✓		
Recreation foreshore	Develop a foreshore management strategy through a partnership to manage the interface between the land and water (covering hazards, erosion, structures, currents, Lake levels, weed infestations and so on).	✓	✓	✓	✓	✓	
Recreation foreshore	Identify with signposts/maps in brochures appropriate access ways to the Lake, for all agencies with reserve lands adjacent to the Lake. Clarify (in a public document) the Queen's chain, riparian rights, esplanade areas, fishing streams and the effect of the Maori Land Amendment and Maori Land Claims Acts.	✓		✓	✓		
Relationships between agencies and groups	Establish a new 2020 JMG with core representation from TDC, EW, DoC, DIA and TMTB to discuss and coordinate work priorities, budgets and opportunities for working together (such as sharing information and joint enforcement), to achieve the community values. Appoint a part-time co-ordinator to support the 2020 JMG and assist in co-ordinating the implementation of the 2020 TAP.	✓	✓	✓	✓	✓	
Relationships between agencies and groups	DoC, DIA, TDC, EW and TMTB shall jointly review the actions included in this Action Plan annually in October of each year: <ul style="list-style-type: none"> to make sure the actions remain appropriate and to identify any further actions that should be considered to identify which actions they will be undertaking in the coming year(s) and will therefore be included into their Long Term Council Community Plans, annual plans or business plans to ensure monitoring expectations set out in the 2020 Taupo-nui-ā-Tia Monitoring Plan are included into work programmes. 	✓	✓	✓	✓	✓	

Department of Conservation (DoC)

Value	New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Relationships between agencies and groups	DoC, DIA, TDC, EW and TMTB shall each provide an annual report to the new 2020 JMG (in October of each year) outlining the actions that have been carried out in the past financial year or those which are still in progress, the results of any monitoring undertaken and an assessment as to whether the implementation of the Action Plan has been effective in meeting the community values. This annual report should be available to the public.	✓	✓	✓	✓	✓	
Relationships between agencies and groups	DoC, DIA, TDC, EW and TMTB shall undertake to jointly review the research gaps identified in the 2020 Taupo-nui-ā-Tia Research Plan every two to three years. EW shall co-ordinate the research priorities and make sure appropriate research providers and funding agencies are aware of these priorities when they are developing proposals or seeking national funding. A review of the research strategy and of the monitoring plan should also be undertaken every three years.	✓	✓	✓	✓	✓	
Relationships between agencies and groups	Contribute to regular teachers' workshops on the progress made with the 2020 Community values.	✓	✓	✓	✓	✓	
Safe swimming	Promote personal responsibility for removing rubbish.	✓	✓	✓	✓	✓	
Trout	Review the Proposed District Plan to have particular regard to the habitat of key fish spawning areas, such as riparian edges.		✓	✓	✓		
Trout	Develop a series of best practice guidelines for river and stream works (for activities provided for in the Waikato Regional Plan), such as river and stream crossings, gravel removal and general in-stream works, to minimise adverse effects on the ecology of rivers and streams.		✓		✓		
Trout	Monitor the levels of biotoxins and heavy metals accumulating in trout and advise public of the results.				✓		
Weed-free Lake	Review the Regional Pest Management Strategy and ensure that known weeds affecting the Lake waters are included and that potentially significant threats are not introduced.		✓		✓		

Department of Conservation (DoC)

Value	New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Weed-free Lake	Establish a surveillance/monitoring programme to monitor the occurrence, type and distribution of existing weeds and to identify the risk of potential and actual new plants establishing in the Lake (including what threats exist from neighbouring lakes).		✓		✓		
Weed-free Lake	Provide further information (signs/brochures) to boaties and the general public to prevent new weeds being introduced into the Lake, and consider the need for further wash-down facilities.	✓	✓	✓	✓		
Wild/ Scenery/ Geological	Identify and map existing legally-protected areas in the Lake Taupo catchment to enable a strategic overview of protected areas.	✓	✓	✓	✓		
Wild/ Scenery/ Geological	Review information held on <ul style="list-style-type: none"> • key ecological areas • habitat areas (including for endemic species) • landscapes • ridge lines • headlands • important vistas • sites of heritage • cultural landscapes • geological • geothermal values that should be protected into the future. Ensure these areas are protected from inappropriate use and development pressures, through both the District Plan and the Waikato Regional Plan.	✓	✓	✓	✓		
Wild/ Scenery/ Geological	Identify the range of mechanisms that are available for protecting land and significant resources (EW Natural Heritage Protection Fund, covenants, QE II, DoC, Ngā Whenua Rahui Kawenata, TDC reserves, Ngāti Tūwharetoa).	✓	✓	✓	✓		
Wild/ Scenery/ Geological	Identify on the 2020 website what options are available for protecting land and wetlands in the catchment, who is responsible, what process is required for legally protecting areas and where funding might be sourced from.	✓	✓	✓	✓		
Wild/ Scenery/ Geological	Protect the wetlands that adjoin Lake Taupo and in particular the South Taupo wetland. Educate and assist landowners to manage wetlands and forest remnants.		✓	✓	✓		

Environment Waikato (EW)

Value	New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Clear and High quality water	Avoid as far as practicable any new stormwater outlets into the Lake (direct discharges) and work towards retaining stormwater in the catchment areas.		✓	✓			
Clear and High quality water	Consider expanding existing services to a mobile household hazardous waste collection service (Hazmobile) for old paints, chemicals, batteries, etc.		✓	✓			
Clear and High quality water	Manage stormwater catchments to reduce contaminants in run-off from entering the Lake (such as increasing range/type of settling ponds, treatment of road run-off, catchment reconfiguration to divert stormwater out of the catchment, educating people on use of stormwater drains, managing industrial and subdivision sites to avoid stormwater run-off).		✓	✓			
Clear and High quality water	Minimise any direct discharges to the Lake which contain chemical or bacterial contaminants (excluding natural discharges and stormwater).		✓	✓			
Clear and High quality water	Reduce manageable nitrogen input into the Lake by at least 20 percent through the work of the Protecting Lake Taupo Strategy and through a variation to the Waikato Regional Plan (including a new regime for controlling diffuse run-off of nutrients from all land and higher standards for wastewater disposal).	✓	✓	✓			
Clear and High Quality Water	EW and TDC should agree on each agency's responsibilities for managing septic tanks and long drops, as a part of the Taupo variation to the Waikato Regional Plan. This includes monitoring and ensuring sub-standard septic tanks are upgraded or replaced.		✓	✓			
Clear and High Quality Water	Consider the need to prohibit boat scraping and maintenance discharges from entering the Lake.		✓			✓	
Clear and High quality water	As part of implementing the EW rule prohibiting sewage discharges to the Lake, require boats operating in Lake Taupo to have sewage holding tanks that can only be discharged into shore-side facilities, chemical toilets if capable of overnight stays or alternative receptacles if used as day trip boat.		✓	✓		✓	
Clear and High quality water	Develop and implement an education promotion for boat owners to take responsibility for their boat sewage.	✓	✓	✓		✓	

Environment Waikato (EW)

Value	New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Clear and High quality water	Assess whether current boat sewage discharge facilities are sufficient and provide further sewage pump out facilities at key boat launching/mooring areas, if required. Clarify which agency will be responsible for maintaining the services provided.	✓	✓	✓	✓	✓	
Clear and High quality water	Undertake a literature review to identify how boat sewage is managed in other Lakes (such as Lake Tahoe, Great Lakes and Scandinavia).		✓				
Clear and High quality water	Develop guidelines for stormwater management in industrial areas.		✓	✓			
Clear and High quality water	Support water quality sampling by students and interested members of the public to collect quality assured data.		✓				
Commercial opportunities	Encourage commercial operators on and near the Lake to adopt an environmental code of practice focused on protecting the Lake Taupo water quality, wilderness experience and scenery.		✓	✓	✓	✓	✓
Ngāti Tūwharetoa values	Continue developing and implementing relationships, protocols and consultation procedures between NT and EW, DoC, DIA and TDC. Note: there are a range of different mechanisms for implementing this.	✓	✓	✓	✓	✓	
Ngāti Tūwharetoa values	Determine the best ways to involve Ngāti Tūwharetoa in decision-making and the management of key or significant issues (such as through joint planning for stormwater management for the Taupo-nui-ā-Tia catchment), while recognising statutory responsibilities.	✓	✓	✓	✓	✓	
Ngāti Tūwharetoa values	Consider RMA Hearings Commissioners who are conversant in Tikanga Māori be appointed to consider resource consents that impact on iwi values identified through the Environmental Iwi Management Plan.	✓	✓	✓			
Ngāti Tūwharetoa values	Ngāti Tūwharetoa to develop trigger criteria, in conjunction with EW and TDC, to identify which RMA consent applications EW and TDC should forward to Ngāti Tūwharetoa for their consideration.	✓	✓	✓			
Ngāti Tūwharetoa values	Identify the process required (with a guideline of expectations, responsibilities to be met and risks involved) to enable an RMA section 33 Transfer of Powers. This could provide hapū with the opportunity to undertake management responsibilities for a specific resource, where the resource issue would be identified on a case-by-case basis.	✓	✓	✓			

Environment Waikato (EW)

Value	New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Ngāti Tūwharetoa values	Ensure that RMA policy statements and plans (and encourage plans or policies of other agencies) to take account of the Tūwharetoa policy on the protection of intellectual and cultural property rights, where appropriate.	✓	✓	✓	✓	✓	
Ngāti Tūwharetoa values	Regular liaison with agencies to consider resource management applications or other situations that may impact upon intellectual and cultural property rights.	✓	✓	✓	✓	✓	
Ngāti Tūwharetoa values	Map existing direct discharges made to the Lake and monitor and report on the quality of the discharge.		✓	✓			
Ngāti Tūwharetoa values	Promote Regional Plan provisions and consent conditions to ensure waahi tapu are protected.	✓	✓				
Ngāti Tūwharetoa values	Once Ngāti Tūwharetoa policy direction is established in relation to a database and/or protection of wāhi tapu, review relationships with statutory plans of the different agencies.	✓	✓	✓	✓		
Diverse plants and animals	Develop an inter-agency approach to “pest fish” management.	✓	✓		✓		
Diverse plants and animals	Undertake a feasibility trial for enhancing native fish species in selected sites (where there is no trout access - identify extent to which trout impact on native populations).	✓	✓		✓		
Diverse plants and animals	During the statutory review of the Regional Pest Management Strategy, revise those plants and animals that are new and potentially significant threats to Lake Taupo. Take all measures possible to minimise the risk of new infestation.		✓		✓		
Diverse plants and animals	In conjunction with other agencies, promote public education on the associated risks of introducing new pest fish and aquatic weeds into the Lake.	✓	✓	✓	✓	✓	
Diverse plants and animals	Promote the protection of habitat and riparian margins as habitat for native fish and bird species throughout the catchment (through, for example, Environment Waikato’s Clean Streams project, schools and community groups).		✓	✓	✓		

Environment Waikato (EW)

Value	New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Recreation foreshore	Develop a foreshore management strategy through a partnership to manage the interface between the land and water (covering hazards, erosion, structures, currents, Lake levels, weed infestations and so on).	✓	✓	✓	✓	✓	
Recreation foreshore	In conjunction with the TDC litter strategy, promote increased awareness of personal responsibility for removing rubbish, with boaties, campers and fishers (in conjunction with Keep NZ Beautiful, schools and other community groups).		✓	✓		✓	
Relationships between agencies and groups	Establish a new 2020 JMG with core representation from TDC, EW, DoC, DIA and TMTB to discuss and coordinate work priorities, budgets and opportunities for working together (such as sharing information and joint enforcement), to achieve the community values. Appoint a part-time co-ordinator to support the 2020 JMG and assist in co-ordinating the implementation of the 2020 TAP.	✓	✓	✓	✓	✓	
Relationships between agencies and groups	DoC, DIA, TDC, EW and TMTB shall jointly review the actions included in this Action Plan annually in October of each year: <ul style="list-style-type: none"> to make sure the actions remain appropriate and to identify any further actions that should be considered to identify which actions they will be undertaking in the coming year(s) and will therefore be included into their Long Term Council Community Plans, annual plans or business plans to ensure monitoring expectations set out in the 2020 Taupo-nui-ā-Tia Monitoring Plan are included into work programmes. 	✓	✓	✓	✓	✓	
Relationships between agencies and groups	DoC, DIA, TDC, EW and TMTB shall each provide an annual report to the new 2020 JMG (in October of each year) outlining the actions that have been carried out in the past financial year or those which are still in progress, the results of any monitoring undertaken and an assessment as to whether the implementation of the Action Plan has been effective in meeting the community values. This annual report should be available to the public.	✓	✓	✓	✓	✓	

Environment Waikato (EW)

Value	New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Relationships between agencies and groups	DoC, DIA, TDC, EW and TMTB shall undertake to jointly review the research gaps identified in the 2020 Taupo-nui-ā-Tia Research Plan every two to three years. EW shall co-ordinate the research priorities and make sure appropriate research providers and funding agencies are aware of these priorities when they are developing proposals or seeking national funding. A review of the research strategy and of the monitoring plan should also be undertaken every three years.	✓	✓	✓	✓	✓	
Relationships between agencies and groups	Contribute to regular teachers' workshops on the progress made with the 2020 Community values.	✓	✓	✓	✓	✓	
Safe swimming	Promote personal responsibility for removing rubbish.	✓	✓	✓	✓	✓	
Trout	Develop a series of best practice guidelines for river and stream works (for activities provided for in the Waikato Regional Plan), such as river and stream crossings, gravel removal and general in-stream works, to minimise adverse effects on the ecology of rivers and streams.		✓		✓		
Trout	Review the Proposed District Plan to have particular regard to the habitat of key fish spawning areas, such as riparian edges.		✓	✓	✓		
Weed-free Lake	Provide further information (signs/brochures) to boaties and the general public to prevent new weeds being introduced into the Lake, and consider the need for further wash-down facilities.		✓	✓	✓	✓	
Weed-free Lake	Review the Regional Pest Management Strategy and ensure that known weeds affecting the Lake waters are included and that potentially significant threats are not introduced.		✓		✓		
Weed-free Lake	Establish a surveillance/monitoring programme to monitor the occurrence, type and distribution of existing weeds and to identify the risk of potential and actual new plants establishing in the Lake (including what threats exist from neighbouring lakes).		✓		✓		
Weed-free Lake	Liaise with other Regional Councils about joint awareness of new weeds and educate the public about managing these threats.		✓				

Environment Waikato (EW)

Value	New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Weed-free Lake	Support weed/algae sampling by students and interested members of the public to collect quality reliable data on algal blooms or populations of new weeds.		✓				
Wild/ Scenery/ Geological	Identify and map existing legally-protected areas in the Lake Taupo catchment to enable a strategic overview of protected areas.	✓	✓	✓	✓		
Wild/ Scenery/ Geological	Review information held on <ul style="list-style-type: none"> • key ecological areas • habitat areas (including for endemic species) • landscapes • ridge lines • headlands • important vistas • sites of heritage • cultural landscapes • geological • geothermal values that should be protected into the future. Ensure these areas are protected from inappropriate use and development pressures, through both the District Plan and the Waikato Regional Plan.	✓	✓	✓	✓		
Wild/ Scenery/ Geological	Identify the range of mechanisms that are available for protecting land and significant resources (EW Natural Heritage Protection Fund, covenants, QE II, DoC, Ngā Whenua Rahui Kawenata, TDC reserves, Ngāti Tūwharetoa).	✓	✓	✓	✓		
Wild/ Scenery/ Geological	Identify on the 2020 website what options are available for protecting land and wetlands in the catchment, who is responsible, what process is required for legally protecting areas and where funding might be sourced from.	✓	✓	✓	✓		
Wild/ Scenery/ Geological	Protect the wetlands that adjoin Lake Taupo and in particular the South Taupo wetland. Educate and assist landowners to manage wetlands and forest remnants.		✓	✓	✓		
Wild/ Scenery/ Geological	Promote the development of national guidelines for the protection of natural landscapes.		✓	✓			

Joint Management Group (JMG)

Value	New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Commercial opportunities	Support the establishment and further development of the Taupo Eco Centre by providing resource material, information on the 2020 TAP progress and indicator results. Eco operators could also be promoted through this Centre.						✓
Commercial opportunities	Encourage commercial operators on and near the Lake to adopt an environmental code of practice focused on protecting the Lake Taupo water quality, wilderness experience and scenery.		✓	✓	✓	✓	✓
Ngāti Tūwharetoa values	Improve communication between agencies, iwi and the community in general, by ensuring that: <ul style="list-style-type: none"> agency roles and responsibilities are clearly identified on the 2020 website a brochure is prepared which identifies roles and responsibilities and key contact points within agencies (a quick checklist of activities or key issues versus agency) iwi liaison representatives at agencies are clearly identified to Ngāti Tūwharetoa hapū and contacts listed on the 2020 website. 						✓
Relationships between agencies and groups	Publicise new information relating to the community values or the Action Plan, including, for example, community involvement stories, progress reports on indicators or other monitoring and regular press releases.						✓
Relationships between agencies and groups	Retain the 2020 Taupo-nui-ā-Tia website and make sure the information is updated (including reviewing and updating the Taupo Bibliography and Information Inventory) and adding an outline of each agency's budgeting and work programming for undertaking actions identified in this Plan (this may be a link to the individual agency's website).						✓
Relationships between agencies and groups	Provide a feedback form on the website for people to raise queries when they are confused about roles/responsibilities.						✓
Relationships between agencies and groups	Provide for regular liaison with the community through the Lakes and Waterways Action Group, the 2020 Forum and the Taupo Eco Centre to encourage the exchange of ideas and information and allow community groups to get involved in different actions.						✓

Joint Management Group (JMG)

Value	New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Relationships between agencies and groups	Lobby for a regular free “environmental” column in the local newspaper and use it as a means for informing the public about progress being made on achieving the 2020 values.						✓
Relationships between agencies and groups	Promote an environmental expo to showcase actions relating to the Lake Taupo-nui-ā-Tia Action Plan (consider an annual event or combining with other appropriate environmental events).						✓
Relationships between agencies and groups	Develop an Implementation Plan for 2020 TAP, covering the initial two years of operation and outlining for example, details of initial tasks to be undertaken, staff and budgets allocated, timeframes and monitoring.						✓
Relationships between agencies and groups	Develop a list for public distribution of funding options that exist within and outside the domain of the statutory agencies, but which could be used to contribute to the community outcomes sought across all values.						✓

Taupo District Council (TDC)

Value	New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Clear and High quality water	Avoid as far as practicable any new stormwater outlets into the Lake (direct discharges) and work towards retaining stormwater in the catchment areas.		✓	✓			
Clear and High quality water	Consider expanding existing services to a mobile household hazardous waste collection service (Hazmobile) for old paints, chemicals, batteries, etc.		✓	✓			

Taupo District Council (TDC)

Value	New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Clear and High quality water	Manage stormwater catchments to reduce contaminants in run-off from entering the Lake (such as increasing range/type of settling ponds, treatment of road run-off, catchment reconfiguration to divert stormwater out of the catchment, educating people on use of stormwater drains, managing industrial and subdivision sites to avoid stormwater run-off).		✓	✓			
Clear and High quality water	EW and TDC should agree on each agency's responsibilities for managing septic tanks and long drops, as a part of the Taupo variation to the Waikato Regional Plan. This includes monitoring and ensuring sub-standard septic tanks are upgraded or replaced.		✓	✓			
Clear and High quality water	Minimise any direct discharges to the Lake which contain chemical or bacterial contaminants (excluding natural discharges and stormwater).		✓	✓			
Clear and High quality water	Reduce manageable nitrogen input into the lake by at least 20 percent through the work of the Protecting Lake Taupo Strategy and through a variation to the Waikato Regional Plan (including a new regime for controlling diffuse run-off of nutrients from all land and higher standards for wastewater disposal).	✓	✓	✓			
Clear and High quality water	TDC and DoC to identify any 'long-drops' (on-site sewage treatment systems) that need to be removed or upgraded to a sealed vault system to avoid impacts on groundwater.			✓	✓		
Clear and High quality water	As part of implementing the EW rule prohibiting sewage discharges to the Lake, require boats operating in Lake Taupo to have sewage holding tanks that can only be discharged into shore-side facilities, chemical toilets if capable of overnight stays or alternative receptacles if used as day trip boat.		✓	✓		✓	
Clear and High quality water	Develop and implement an education promotion for boat owners to take responsibility for their boat sewage.	✓	✓	✓		✓	
Clear and High quality water	Assess whether current boat sewage discharge facilities are sufficient and provide further sewage pump out facilities at key boat launching/mooring areas, if required. Clarify which agency will be responsible for maintaining the services provided.	✓	✓	✓	✓	✓	

Taupo District Council (TDC)

Value	New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Clear and High quality water	Develop guidelines for stormwater management in industrial areas.		✓	✓			
Commercial opportunities	Assist in the review of the Economic Development Strategy (through the Lake Taupo Community Regional Economic Steering Group).			✓			
Commercial opportunities	Encourage commercial operators on and near the Lake to adopt an environmental code of practice focused on protecting the Lake Taupo water quality, wilderness experience and scenery.		✓	✓	✓	✓	✓
Commercial opportunities	Undertake a study to determine the carrying capacity for commercial operators and assess cumulative effects on the Lake and foreshore reserves.			✓			
Ngāti Tūwharetoa values	Continue developing and implementing relationships, protocols and consultation procedures between NT and EW, DoC, DIA and TDC. Note: there are a range of different mechanisms for implementing this.	✓	✓	✓	✓	✓	
Ngāti Tūwharetoa values	Determine the best ways to involve Ngāti Tūwharetoa in decision-making and the management of key or significant issues (such as through joint planning for stormwater management for the Taupo-nui-ā-Tia catchment), while recognising statutory responsibilities.	✓	✓	✓	✓	✓	
Ngāti Tūwharetoa values	Consider RMA Hearings Commissioners who are conversant in Tikanga Māori be appointed to consider resource consents that impact on iwi values identified through the Environmental Iwi Management Plan.	✓	✓	✓			
Ngāti Tūwharetoa values	Ngāti Tūwharetoa to develop trigger criteria, in conjunction with EW and TDC, to identify which RMA consent applications EW and TDC should forward to Ngāti Tūwharetoa for their consideration.	✓	✓	✓			
Ngāti Tūwharetoa values	Identify the process required (with a guideline of expectations, responsibilities to be met and risks involved) to enable an RMA section 33 Transfer of Powers. This could provide hapū with the opportunity to undertake management responsibilities for a specific resource, where the resource issue would be identified on a case-by-case basis.	✓	✓	✓			

Taupo District Council (TDC)

Value	New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Ngāti Tūwharetoa values	Ensure that RMA policy statements and plans (and encourage plans or policies of other agencies) to take account of the Tūwharetoa policy on the protection of intellectual and cultural property rights, where appropriate.	✓	✓	✓	✓	✓	
Ngāti Tūwharetoa values	Regular liaison with agencies to consider resource management applications or other situations that may impact upon intellectual and cultural property rights.	✓	✓	✓	✓	✓	
Ngāti Tūwharetoa values	Liaison and information sharing with Ngāti Tūwharetoa (impacted hapū) on the priorities TDC has or will set for upgrading sewage and/or stormwater systems within the District.	✓		✓			
Ngāti Tūwharetoa values	Map existing direct discharges made to the Lake and monitor and report on the quality of the discharge.		✓	✓			
Ngāti Tūwharetoa values	TDC in consultation with TMTB (Enviro Unit/hapū) will develop wāhi tapū procedures to look at developing or improving wāhi tapū policy.	✓		✓			
Ngāti Tūwharetoa values	Once Ngāti Tūwharetoa policy direction is established in relation to a database and/or protection of wāhi tapū, review relationships with statutory plans of the different agencies.	✓	✓	✓	✓		
Diverse plants and animals	In conjunction with other agencies, promote public education on the associated risks of introducing new pest fish and aquatic weeds into the Lake.	✓	✓	✓	✓	✓	
Diverse plants and animals	Promote the protection of habitat and riparian margins as habitat for native fish and bird species throughout the catchment (through, for example, Environment Waikato's Clean Streams project, schools and community groups).		✓	✓	✓		
Recreation foreshore	Develop a foreshore management strategy through a partnership to manage the interface between the land and water (covering hazards, erosion, structures, currents, Lake levels, weed infestations and so on).	✓	✓	✓	✓	✓	

Taupo District Council (TDC)

Value	New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Recreation foreshore	Identify with signposts/maps in brochures appropriate access ways to the Lake, for all agencies with reserve lands adjacent to the Lake. Clarify (in a public document) the Queen's chain, riparian rights, esplanade areas, fishing streams and the effect of the Maori Land Amendment and Maori Land Claims Acts.	✓		✓	✓		
Recreation foreshore	In conjunction with the TDC litter strategy, promote increased awareness of personal responsibility for removing rubbish, with boaties, campers and fishers (in conjunction with Keep NZ Beautiful, schools and other community groups).		✓	✓		✓	
Relationships between agencies and groups	Establish a new 2020 JMG with core representation from TDC, EW, DoC, DIA and TMTB to discuss and coordinate work priorities, budgets and opportunities for working together (such as sharing information and joint enforcement), to achieve the community values. Appoint a part-time co-ordinator to support the 2020 JMG and assist in co-ordinating the implementation of the 2020 TAP.	✓	✓	✓	✓	✓	
Relationships between agencies and groups	DoC, DIA, TDC, EW and TMTB shall jointly review the actions included in this Action Plan annually in October of each year: <ul style="list-style-type: none"> to make sure the actions remain appropriate and to identify any further actions that should be considered to identify which actions they will be undertaking in the coming year(s) and will therefore be included into their Long Term Council Community Plans, annual plans or business plans to ensure monitoring expectations set out in the 2020 Taupo-nui-ā-Tia Monitoring Plan are included into work programmes. 	✓	✓	✓	✓	✓	
Relationships between agencies and groups	DoC, DIA, TDC, EW and TMTB shall each provide an annual report to the new 2020 JMG (in October of each year) outlining the actions that have been carried out in the past financial year or those which are still in progress, the results of any monitoring undertaken and an assessment as to whether the implementation of the Action Plan has been effective in meeting the community values. This annual report should be available to the public.	✓	✓	✓	✓	✓	

Taupo District Council (TDC)

Value	New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Relationships between agencies and groups	DoC, DIA, TDC, EW and TMTB shall undertake to jointly review the research gaps identified in the 2020 Taupo-nui-ā-Tia Research Plan every two to three years. EW shall co-ordinate the research priorities and make sure appropriate research providers and funding agencies are aware of these priorities when they are developing proposals or seeking national funding. A review of the research strategy and of the monitoring plan should also be undertaken every three years.	✓	✓	✓	✓	✓	
Relationships between agencies and groups	Contribute to regular teachers' workshops on the progress made with the 2020 community values.	✓	✓	✓	✓	✓	
	In conjunction with LWAG, 2020 Forum members and schools support a regular litter survey of popular bathing beaches to identify the type and quantity of litter.			✓			
Safe swimming	Promote personal responsibility for removing rubbish.	✓	✓	✓	✓	✓	
Trout	Review the Proposed District Plan to have particular regard to the habitat of key fish spawning areas, such as riparian edges.		✓	✓	✓		
Weed-free Lake	Provide further information (signs/brochures) to boaties and the general public to prevent new weeds being introduced into the Lake, and consider the need for further wash-down facilities.		✓	✓	✓	✓	
Wild/ Scenery/ Geological	Identify and map existing legally-protected areas in the Lake Taupo catchment to enable a strategic overview of protected areas.	✓	✓	✓	✓		
Wild/ Scenery/ Geological	Review information held on <ul style="list-style-type: none"> • key ecological areas • habitat areas (including for endemic species) • landscapes • ridge lines • headlands • important vistas • sites of heritage • cultural landscapes • geological • geothermal values that should be protected into the future. Ensure these areas are protected from inappropriate use and development pressures, through both the District Plan and the Waikato Regional Plan.	✓	✓	✓	✓		

Taupo District Council (TDC)

Value	New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Wild/ Scenery/ Geological	Identify the range of mechanisms that are available for protecting land and significant resources (EW Natural Heritage Protection Fund, covenants, QE II, DoC, Ngā Whenua Rahui Kawenata, TDC reserves, Ngāti Tūwharetoa).	✓	✓	✓	✓		
Wild/ Scenery/ Geological	Identify on the 2020 website what options are available for protecting land and wetlands in the catchment, who is responsible, what process is required for legally protecting areas and where funding might be sourced from.	✓	✓	✓	✓		
Wild/ Scenery/ Geological	Protect the wetlands that adjoin Lake Taupo and in particular the South Taupo wetland. Educate and assist landowners to manage wetlands and forest remnants.		✓	✓	✓		
Wild/ Scenery/ Geological	Promote the development of national guidelines for the protection of natural landscapes.		✓	✓			

Tūwharetoa Māori Trust Board (TMTB)

Value	New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Clear and High quality water	Reduce manageable nitrogen input into the Lake by at least 20 percent through the work of the Protecting Lake Taupo Strategy and through a variation to the Waikato Regional Plan (including a new regime for controlling diffuse run-off of nutrients from all land and higher standards for wastewater disposal).	✓	✓	✓			
Clear and High quality water	Develop and implement an education promotion for boat owners to take responsibility for their boat sewage.	✓	✓	✓		✓	
Clear and High quality water	Assess whether current boat sewage discharge facilities are sufficient and provide further sewage pump out facilities at key boat launching/mooring areas, if required. Clarify which agency will be responsible for maintaining the services provided.	✓	✓	✓	✓	✓	

Tūwharetoa Māori Trust Board (TMTB)

Value	New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Ngāti Tūwharetoa values	Establish the Tūwharetoa Environmental Unit to: <ul style="list-style-type: none"> provide environmental services and information to Tūwharetoa hapū be a point of contact for agencies assist agencies in understanding and to facilitate better management of cultural values. 	✓					
Ngāti Tūwharetoa values	Continue developing and implementing relationships, protocols and consultation procedures between NT and EW, DoC, DIA and TDC. Note: there are a range of different mechanisms for implementing this.	✓	✓	✓	✓	✓	
Ngāti Tūwharetoa values	Develop an Iwi Research Strategy to complement the areas of further research identified under other values in this Plan, and suitable monitoring indicators.	✓					
Ngāti Tūwharetoa values	Investigate the potential for establishing joint management bodies covering resources of significance to Ngāti Tūwharetoa (such as joint management of south Taupo wetland between Ngāti Tūwharetoa hapū and DoC).	✓					
Ngāti Tūwharetoa values	Determine the best ways to involve Ngāti Tūwharetoa in decision-making and the management of key or significant issues (such as through joint planning for stormwater management for the Taupo-nui-ā-Tia catchment), while recognising statutory responsibilities.	✓	✓	✓	✓	✓	
Ngāti Tūwharetoa values	Consider RMA Hearings Commissioners who are conversant in Tikanga Māori be appointed to consider resource consents that impact on iwi values identified through the Environmental Iwi Management Plan.	✓	✓	✓			
Ngāti Tūwharetoa values	Ngāti Tūwharetoa to develop trigger criteria, in conjunction with EW and TDC, to identify which RMA consent applications EW and TDC should forward to Ngāti Tūwharetoa for their consideration.	✓	✓	✓			
Ngāti Tūwharetoa values	Identify the process required (with a guideline of expectations, responsibilities to be met and risks involved) to enable an RMA section 33 Transfer of Powers. This could provide hapū with the opportunity to undertake management responsibilities for a specific resource, where the resource issue would be identified on a case-by-case basis.	✓	✓	✓			

Tūwharetoa Māori Trust Board (TMTB)

Value	New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Ngāti Tūwharetoa values	Develop a Tūwharetoa Policy Statement on intellectual and cultural property rights and forward to agencies and ensure they are aware of and consider how it might be implemented.	✓					
Ngāti Tūwharetoa values	Ensure that RMA policy statements and plans (and encourage plans or policies of other agencies) to take account of the Tūwharetoa policy on the protection of intellectual and cultural property rights, where appropriate.	✓	✓	✓	✓	✓	
Ngāti Tūwharetoa values	Regular liaison with agencies to consider resource management applications or other situations that may impact upon intellectual and cultural property rights.	✓	✓	✓	✓	✓	
Ngāti Tūwharetoa values	The ongoing consideration of applications for cultural environmental and economic projects by the Tūwharetoa Genesis Group and the Tūwharetoa Mighty River Power Group, as part of the existing mitigation agreement.	✓					
Ngāti Tūwharetoa values	Ngāti Tūwharetoa whānau, hapū and iwi undertaking projects that enhance the mauri of taonga.	✓					
Ngāti Tūwharetoa values	Liaison and information sharing with Ngāti Tūwharetoa (impacted hapū) on the priorities TDC has or will set for upgrading sewage and/or stormwater systems within the District.	✓		✓			
Ngāti Tūwharetoa values	Ensure that consultation with hapū is a prerequisite of any proposed changes to existing treatment systems and that hapū are involved in the design and monitoring regimes.	✓					
Ngāti Tūwharetoa values	Each Tūwharetoa hapū to establish a working environmental committee.	✓					
Ngāti Tūwharetoa values	Tūwharetoa hapū establish hapū environmental iwi management plans.	✓					
Ngāti Tūwharetoa values	TDC in consultation with TMTB (Enviro Unit/hapū) will develop wāhi tapū procedures to look at developing or improving wāhi tapū policy.	✓		✓			
Ngāti Tūwharetoa values	Promote Regional Plan provisions and consent conditions to ensure waahi tapu are protected.	✓	✓				

Tūwharetoa Māori Trust Board (TMTB)

Value	New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Ngāti Tūwharetoa values	Provide administrative support to hapū to implement restoration programmes that could be funded by the Tūwharetoa Genesis Group.	✓					
Ngāti Tūwharetoa values	Do a search of museums within the Region (and nationally if appropriate) to see what tribal/hapū taonga are held. Ensure those items are cared for appropriately and create a database of them.	✓					
Ngāti Tūwharetoa values	Once Ngāti Tūwharetoa policy direction is established in relation to a database and/or protection of wāhi tapū, review relationships with statutory plans of the different agencies.	✓	✓	✓	✓		
Ngāti Tūwharetoa values	Clarify and inform people of the roles and responsibilities in relation to harvesting native species, customary use and protecting mahinga kai.	✓					
Ngāti Tūwharetoa values	Facilitate access to baseline data and monitoring information held or gathered by other agencies.	✓					
Diverse plants and animals	Develop an inter-agency approach to “pest fish” management.	✓	✓		✓		
Diverse plants and animals	Undertake a feasibility trial for enhancing native fish species in selected sites (where there is no trout access - identify extent to which trout impact on native populations).	✓	✓		✓		
Diverse plants and animals	In conjunction with other agencies, promote public education on the associated risks of introducing new pest fish and aquatic weeds into the Lake.	✓	✓	✓	✓	✓	
Recreation foreshore	Develop a foreshore management strategy through a partnership to manage the interface between the land and water (covering hazards, erosion, structures, currents, Lake levels, weed infestations and so on).	✓	✓	✓	✓	✓	
Recreation foreshore	Identify with signposts/maps in brochures appropriate access ways to the Lake, for all agencies with reserve lands adjacent to the Lake. Clarify (in a public document) the Queen’s chain, riparian rights, esplanade areas, fishing streams and the effect of the Māori Land Amendment and Maori Land Claims Acts.	✓		✓	✓		

Tūwharetoa Māori Trust Board (TMTB)

Value	New Actions	TMTB/ Enviro Unit	EW	TDC	DoC	DIA	JMG
Relationships between agencies and groups	Establish a new 2020 JMG with core representation from TDC, EW, DoC, DIA and TMTB to discuss and coordinate work priorities, budgets and opportunities for working together (such as sharing information and joint enforcement), to achieve the community values. Appoint a part-time co-ordinator to support the 2020 JMG and assist in co-ordinating the implementation of the 2020 TAP.	✓	✓	✓	✓	✓	
Relationships between agencies and groups	DoC, DIA, TDC, EW and TMTB shall jointly review the actions included in this Action Plan annually in October of each year: <ul style="list-style-type: none"> to make sure the actions remain appropriate and to identify any further actions that should be considered to identify which actions they will be undertaking in the coming year(s) and will therefore be included into their Long Term Council Community Plans, annual plans or business plans to ensure monitoring expectations set out in the 2020 Taupo-nui-ā-Tia Monitoring Plan are included into work programmes. 	✓	✓	✓	✓	✓	
Relationships between agencies and groups	DoC, DIA, TDC, EW and TMTB shall each provide an annual report to the new 2020 JMG (in October of each year) outlining the actions that have been carried out in the past financial year or those which are still in progress, the results of any monitoring undertaken and an assessment as to whether the implementation of the Action Plan has been effective in meeting the community values. This annual report should be available to the public.	✓	✓	✓	✓	✓	
Relationships between agencies and groups	DoC, DIA, TDC, EW and TMTB shall undertake to jointly review the research gaps identified in the 2020 Taupo-nui-ā-Tia Research Plan every two to three years. EW shall co-ordinate the research priorities and make sure appropriate research providers and funding agencies are aware of these priorities when they are developing proposals or seeking national funding. A review of the research strategy and of the monitoring plan should also be undertaken every three years.	✓	✓	✓	✓	✓	

Tūwharetoa Māori Trust Board (TMTB)

Value	New Actions	TMTB/ Enviro Unit	EW	TDC	DOC	DIA	JMG
Relationships between agencies and groups	Contribute to regular teachers' workshops on the progress made with the 2020 Community values.	✓	✓	✓	✓	✓	
Safe swimming	Promote personal responsibility for removing rubbish.	✓	✓	✓	✓	✓	
Wild/ Scenery/ Geological	Identify and map existing legally-protected areas in the Lake Taupo catchment to enable a strategic overview of protected areas.	✓	✓	✓	✓		
Wild/ Scenery/ Geological	Review information held on <ul style="list-style-type: none"> • key ecological areas • habitat areas (including for endemic species) • landscapes • ridge lines • headlands 	✓	✓	✓	✓		
Wild/ Scenery/ Geological	<ul style="list-style-type: none"> • important vistas • sites of heritage • cultural landscapes • geological • geothermal values that should be protected into the future. Ensure these areas are protected from inappropriate use and development pressures, through both the District Plan and the Waikato Regional Plan.						
Wild/ Scenery/ Geological	Identify the range of mechanisms that are available for protecting land and significant resources (EW Natural Heritage Protection Fund, covenants, QE II, DoC, Ngā Whenua Rahui Kawenata, TDC reserves, Ngāti Tūwharetoa).	✓	✓	✓	✓		
Wild/ Scenery/ Geological	Identify on the 2020 website what options are available for protecting land and wetlands in the catchment, who is responsible, what process is required for legally protecting areas and where funding might be sourced from.	✓	✓	✓	✓		

Appendix 3

Table of monitoring indicators for overview values⁶

Relationships between agencies and groups

Indicator	How measured	Target, guideline or standard	Currently monitored?	Who monitors?
1 Agency performance in implementation of 2020	Proportion of total actions assigned to each agency undertaken or progressed during a particular year.	All actions undertaken or progressed as agreed at the beginning of each year.	No	DIA, DoC, EW, TDC, TMTB
2 Community awareness of and involvement in 2020 values and action plan	Survey (postal questionnaire) using standardised questions (based on GNS, 2003). Repeat surveys undertaken every three years.	Increased public awareness of and involvement with 2020 values and action plan.	Yes	JMG, EW
3 Community environmental views and attitudes	Survey (postal questionnaire or telephone) using standardised questions (based on GNS, 2003 and EW, 2003). Repeat surveys undertaken every three years.	Community views and attitudes reflect aims of 2020 Taupo-nui-a-Tia Action Plan.	Yes	JMG, EW
4 Community satisfaction with local environment	Survey (postal questionnaire or telephone) using standardised questions (based on GNS, 2003 and EW, 2003). Repeat surveys undertaken every three years.	75 percent of respondents are satisfied with their local environment.	Yes	JMG, EW
5 Number of complaints	Number of complaints received by type (such as noise, stormwater and water pollution).	Number of complaints remains stable.	Some	TDC, EW

Cultural

Indicator	How measured	Target, guideline or standard	Currently monitored?	Who monitors?
Various	Suitable indicators (tohu) to track progress towards the Ngāti Tūwharetoa values and aspirations will be developed as part of the implementation plan for the Ngāti Tūwharetoa Environmental Iwi Management Plan (refer to new actions on page 17).		Some	TMTB

⁶A 2020 Monitoring Plan (Huser, 2004) will provide further details about the indicators listed in this Appendix.

Commercial opportunities

Indicator	How measured	Target, guideline or standard	Currently monitored?	Who monitors?
6 Growth of local economy	<ul style="list-style-type: none"> Net GST figures for TDC (Statistics NZ) Taupo Growth Index (APR Consultants) Number of businesses by sector Taupo Business Survey (confidence/sales/growth) Number of empty shops Job advertisement numbers in newspapers. 	<ul style="list-style-type: none"> Vibrant Taupo economy that is increasingly diversified Economic development does not compromise 2020 values. 	Some	LTDC, TDC
7 Job opportunities	<ul style="list-style-type: none"> Analysis of employment statistics/opportunities (by sector) Unemployment figures for Māori Business Frame Index (number of FTEs in each industry - Statistics NZ) Taupo Business Survey (number of businesses owned or managed by Māori) Job advertisement numbers in newspapers. 	Commercial ventures contribute to long-term employment.	Some	LTDC, TDC
8 Diverse and skilled labour force	Percentage of population within each qualification category (Ministry of Education) and the number of employees per occupation group (Statistics NZ).	Community has appropriate skills to meet changes towards sustainable land use.	Some	LTDC, TDC

Clear water and High quality inflowing water

Indicator	How measured	Target, guideline or standard	Currently monitored?	Who monitors?
9 Water clarity	Secchi disk.	Maintain current water clarity (~ 14 metres).	Yes	EW
10 Water quality for ecological health (Lake)	<ul style="list-style-type: none"> • Secchi disk • Total nitrogen (in the top 0-10 meters) • Algal biomass (as chlorophyll a) • Oxygen depletion rate • See http://www.ew.govt.nz/enviroinfo/indicators/inlandwater/lakes/lake9/techinfo.htm 	<ul style="list-style-type: none"> • Ecological health is in the "satisfactory to excellent range" (refer to table at end of Appendix) • See http://www.ew.govt.nz/enviroinfo/indicators/inlandwater/lakes/lake9/techinfo.htm 	Yes	EW
11 Input of nutrients into Lake Taupo	Estimates of plant nutrients into the Lake from the various sources (tons of nitrogen per year).	Reduction of at least 20 percent from current input ⁶ .	Yes	EW
12 Dwellings on reticulated sewage	Percentage of dwellings on reticulated wastewater.	Increasing proportion of dwellings are connected (x percent reticulation by 2020).	Yes	TDC
13 Volume of treated sewage and stormwater	Volume of sewage and stormwater treated by TDC services.	<ul style="list-style-type: none"> • Increasing treatment of stormwater • Wastewater volume decreases on a per capita basis. 	Some	TDC
14 Water quality for ecological health (rivers and streams)	<ul style="list-style-type: none"> • Black disk • Temperature • Dissolved oxygen • pH • Dissolved nitrogen • Dissolved and total phosphorus • See http://www.ew.govt.nz/enviroinfo/indicators/inlandwater/lakes/lake9/techinfo.htm 	<ul style="list-style-type: none"> • Ecological health is in the "satisfactory to excellent range" (see table at end of Appendix) • See http://www.ew.govt.nz/enviroinfo/indicators/inlandwater/lakes/lake9/techinfo.htm 	Yes	EW
15 Water quality for recreation	<ul style="list-style-type: none"> • Faecal bacteria (<i>Escherichia coli</i>) • Water clarity (Secchi Disk). 	<ul style="list-style-type: none"> • Water quality for contact recreation (such as swimming, windsurfing and jetskiing) is "excellent" (see table at end of Appendix) • See also http://www.ew.govt.nz/enviroinfo/indicators/inlandwater/lakes/lake9/techinfo.htm 	Yes	EW

⁶Refer to Environment Waikato's Protecting Lake Taupo Strategy (2004) <http://www.ew.govt.nz/policyandplans/taupo/index.htm>

Clear water and High quality inflowing water

Indicator	How measured	Target, guideline or standard	Currently monitored?	Who monitors?
16 River biology	Presence and numbers of freshwater invertebrates (for example, insects and snails) in selected tributary rivers.	<ul style="list-style-type: none"> Ecological health for river biology is in the "satisfactory to excellent range" See http://www.ew.govt.nz/enviroinfo/indicators/inlandwater/riversandstreams/riv3/keypoints.htm 	Yes	EW
17 Sediment loads	Estimate of sediment loads entering the Lake from rivers and streams.	Reduction in sediment loads (tons per year) by x percent by 2020.	Some	EW

Diverse plants and animals (Lake and rivers)

Indicator	How measured	Target, guideline or standard	Currently monitored?	Who monitors?
18 Water quality for ecological health (Lake)	<ul style="list-style-type: none"> Secchi disk Total nitrogen (in the top 0 to 10 metres) Algal biomass (as chlorophyll a) Oxygen depletion rate See http://www.ew.govt.nz/enviroinfo/indicators/inlandwater/lakes/lake9/techinfo.htm 	<ul style="list-style-type: none"> Ecological health is in the "satisfactory to excellent range" (refer to table at the end of Appendix) See http://www.ew.govt.nz/enviroinfo/indicators/inlandwater/lakes/lake9/techinfo.htm 	Yes	EW
19 Water quality for ecological health (rivers and streams)	<ul style="list-style-type: none"> Black disk Temperature Dissolved oxygen pH Dissolved nitrogen Dissolved and total phosphorus See http://www.ew.govt.nz/enviroinfo/indicators/inlandwater/lakes/lake9/techinfo.htm 	<ul style="list-style-type: none"> Ecological health is in the "satisfactory to excellent range" (refer to table at the end of Appendix) See http://www.ew.govt.nz/enviroinfo/indicators/inlandwater/lakes/lake9/techinfo.htm 	Yes	EW
20 Input of nutrients into Lake Taupo	Estimates of plant nutrients into the Lake from the various sources (tons of nitrogen per year).	Reduction of at least 20 percent from current input ⁷ .	Yes	EW
21 Number of catfish	Catfish abundance at selected locations.	Number of catfish remains stable.	Yes	DoC

⁷ Refer to Environment Waikato, Protecting Lake Taupo (2004) <http://www.ew.govt.nz/policyandplans/taupo/index.htm>

Diverse plants and animals (Lake and rivers)

Indicator	How measured	Target, guideline or standard	Currently monitored?	Who monitors?
22 Number of native fish	Abundance of koura, koaro and other native fish at selected locations.	Number of native fish remain stable.	Some	DoC
23 Plant and animal pests (Lake, rivers/streams)	Monitoring the Regional Pest Management Strategy (weeds by type).	Achieve targets set in the Regional Pest Management Strategy.	Some	EW
24 Protection of natural areas	<ul style="list-style-type: none"> Legal protection of natural areas (by type) Area of protected land and reserves. 	<ul style="list-style-type: none"> Area of legally protected natural sites increasing (x percent of total area protected by 2020) Management regime/policies in place to legally protect natural areas (including guidelines for development). 	Some	DoC, EW, TDC, TMTB
25 Sediment loads	Estimate of sediment loads entering the Lake from river and streams.	Reduction in sediment loads (tons per year) by x percent by 2020.	Some	EW

Good trout fishing

Indicator	How measured	Target, guideline or standard	Currently monitored?	Who monitors?
26 Angler satisfaction	Angler reports/satisfaction surveys (percent of anglers that are satisfied with their fishing experience).	75 percent of anglers are satisfied with their angler experience.	Yes	DoC
27 Trout health and size	<ul style="list-style-type: none"> Fish surveys Number of trout, including juvenile trout, in streams. 	<ul style="list-style-type: none"> Current health and size of trout are maintained Sufficient number of juvenile trout. 	Yes	DoC
28 Expenditure by overseas trout anglers	Annual average direct and indirect money spent per overseas anglers.	Per capita expenditure of overseas anglers is increasing.	No	LTDC

Recreational opportunities and Foreshore reserves

Indicator	How measured	Target, guideline or standard	Currently monitored?	Who monitors?
29 Public satisfaction with access to waterways	<ul style="list-style-type: none"> • Random sample surveys • Record of complaints received and compliments received. 	75 percent of respondents satisfied with public access.	Yes	TDC
30 Public satisfaction with facilities	<ul style="list-style-type: none"> • Random sample surveys • Record of complaints received and compliments received. 	75 percent of respondents satisfied with public facilities.	Yes	TDC
31 Public satisfaction with recreational opportunities	<ul style="list-style-type: none"> • Random sample surveys - community satisfaction with number and condition of recreational reserves • Record of complaints received and compliments received. 	75 percent of respondents satisfied with recreational opportunities.	Yes	TDC
32 Protection of Lake foreshore	Legal protection of foreshore (proportion of total length).	Total length and proportion of protected foreshore increasing (x percent of total length protected by 2020).	Some	EW, TDC, DoC, TMTB

Safe drinking water

Indicator	How measured	Target, guideline or standard	Currently monitored?	Who monitors?
33 Faecal organisms	See Ministry of Health Drinking-Water Standards of New Zealand 2000, published by the Ministry of Health, August 2000.	All samples meet New Zealand Drinking Water Standards ⁸ .	Yes	EW, TDC
34 Drinking water contaminants	See Ministry of Health Drinking-Water Standards of New Zealand 2000, published by the Ministry of Health, August 2000.	All samples meet New Zealand Drinking Water Standards (refer to www.moh.govt.nz for details of the guidelines and standards for each contaminant).	Yes	EW, TDC
35 Toxic algal blooms	<ul style="list-style-type: none"> • Number of cells of potentially toxin-producing algae • Amount of toxins (if the guideline value for numbers of cells is exceeded). 	<ul style="list-style-type: none"> • Number of cells meet current guideline value for recreational waters (15,000 cell per mL)⁹ • See http://www.ew.govt.nz/enviroinfo/water/healthyivers/waikato/algalbloom/questionsandanswers.htm 	Yes	EW, TDC

Safe swimming

Indicator	How measured	Target, guideline or standard	Currently monitored?	Who monitors?
36 Water quality for recreation	<ul style="list-style-type: none"> Faecal bacteria (<i>Escherichia coli</i>) Water clarity (Secchi Disk). 	<ul style="list-style-type: none"> Water quality for contact recreation (such as swimming, windsurfing and jet skiing) is "excellent" (for details refer to table at end of Appendix) See http://www.ew.govt.nz/enviroinfo/indicators/inlandwater/lakes/lake9/techinfo.htm 	Yes	EW
37 Toxic algal blooms	<ul style="list-style-type: none"> Number of cells of potentially toxin-producing algae Amount of toxins (if the guideline value for numbers of cells is exceeded). 	Number of cells meet current guideline value for recreational waters (15,000 cell per mL) - see http://www.ew.govt.nz/enviroinfo/water/healthyivers/waikato/algalbloom/questionsandanswers.htm	Yes	EW, TDC
38 Rubbish on beaches	<ul style="list-style-type: none"> Rubbish volume Rubbish type (paper, plastic, glass and other sharp objects, other). 	Reduction of litter on beaches, especially glass and other sharp objects, by x percent by 2020.	No	TDC?, Schools?
39 Navigation safety incidents	<ul style="list-style-type: none"> Log of regulatory patrols Log of reported incidents and injuries Log of complaints. 	<ul style="list-style-type: none"> Undertake at least 30 patrols per annum No increase in the number of offences, incidents, injuries and complaints. 	Some	DIA?
40 Swimming only beaches	Total length of beaches (and proportion of total shoreline) free of motorised watercrafts (and ski lanes).	Maintain current extent of beaches where motorised watercrafts are prohibited.	No	DIA?
41 Dwellings on reticulated sewage	Percentage of dwellings on reticulated wastewater.	Increasing proportion of dwellings are connected (x percent by 2020).	Yes	TDC

⁸ Standards are currently under review - see Draft New Zealand Drinking Water Standards, Ministry of Health, 2004 at www.moh.govt.nz

⁹ The current Draft New Zealand Drinking Water Standards (Ministry of Health, 2004) propose a trigger value of 100 potentially toxic cyanobacteria in 100 mL of water.

Weed-free Lake

Indicator	How measured	Target, guideline or standard	Currently monitored?	Who monitors?
42 Distribution of weeds	Mapping of weeds, by type (such as filamentous algae, Egeria densa and Hornwort) and total area.	No further expansion of weeds.	Some	EW, DoC
43 Occurrence of new weeds	Surveillance programme to detect new weeds.	<ul style="list-style-type: none"> No detection of new weeds Any new species are detected quickly and a management regime is put in place as soon as possible to eradicate or control. 	No	EW, DOC
44 Toxic algal blooms	<ul style="list-style-type: none"> Number of cells of potentially toxin-producing algae Amount of toxins (if the guideline value for numbers of cells is exceeded). 	<ul style="list-style-type: none"> Number of cells meet current guideline value for recreational waters (15,000 cell per mL) See http://www.ew.govt.nz/enviroinfo/water/healthyivers/waikato/algalbloom/questionsandanswers.htm 	Yes	EW, TDC

Wilderness areas, Outstanding scenery and Geological features

Indicator	How measured	Target, guideline or standard	Currently monitored?	Who monitors?
45 Threats from pests	<ul style="list-style-type: none"> Inventory of major land-based pests (type, numbers and distribution) Pest damage in significant areas Inventory of stock fence condition. 	<ul style="list-style-type: none"> Pest impacts managed in significant areas No net loss of wilderness areas, outstanding scenery or significant geological sites due to pest damage. 	Some	EW, DoC
46 Protected landscapes and sites	Mapping and description (inventory) of significant wilderness areas, landscapes and geological sites.	<ul style="list-style-type: none"> Increase in area/number of protected sites by type (x percent increase by 2020) Management regime in place to protect significant wilderness areas, landscapes and scenic qualities and geological features (includes guidelines for development). 	Some	EW, TDC, DoC

Wilderness areas, Outstanding scenery and Geological features

Indicator	How measured	Target, guideline or standard	Currently monitored?	Who monitors?
47 Area of significant natural features fenced	<ul style="list-style-type: none"> Length of completed fencing as proportion of total boundary Area of significant natural features fenced. 	100 percent fenced.	Some	DoC
48 <ul style="list-style-type: none"> Public satisfaction with wilderness experience Natural character and vistas Condition of geological sites 	<ul style="list-style-type: none"> Random sample surveys (percentage of population who rank natural and landscape values in the Lake Taupo catchment as important) Complaints received. 	75 percent of survey respondents are satisfied.	No	TDC?
49 Area of land in natural state	Area and proportion of land in native vegetation (baseline 1840) per ecosystem type.	No loss of land in natural state.	Yes	EW, DoC, TDC

Table of water quality guidelines and standards used

From <http://www.ew.govt.nz/enviroinfo/indicators/inlandwater/lakes/lake9/techinfo.htm>

Water quality variable (units)	Relevance	Categories		
		Excellent	Satisfactory	Unsatisfactory
Ecological health				
Secchi disc clarity (m)	Light penetration	>15	12 – 15	<12
Chlorophyll a (mg/m ³)	Algal abundance	<0.7	0.7 – 1.4	>1.4
Total nitrogen (mg/m ³)	Causes nuisance plant growths	<70	70 – 140	>140
Oxygen depletion (mg/m ³ /d)	Oxygen for fish to breathe	<5	5 – 15	>15
Contact recreation				
Clarity, horizontal (m)	Visibility	>4	1.6 – 4	<1.6
<i>Escherichia coli</i> single sample (no./100 mL)*	Human health	<55	55 – 550	>550

* Notes

1. The 'action' level of *E. coli* in the 2003 national guidelines is 550 units per 100 mL. We use this value to define unsatisfactory conditions.
2. "Excellent" conditions have an *E. coli* level one-tenth of the 'action' value (55 units per 100 mL).

Appendix 4

List of 2020 Project reports

The following is a list of documents prepared as a part of the 2020 Project. Copies of the full reports are available on the 2020 Project website www.taupoinfo.org.nz. The website also includes a searchable bibliography of over 800 documents relevant to Taupo and the 2020 community values.

Britton, R. (2004). *2020 Taupo-nui-ā-Tia Policy Review. Prepared for 2020 Taupo-nui-ā-Tia, March 2004.*

This document provides an overview of key agencies existing policy which contributes to achieving the community values identified through the Taupo-nui-ā-Tia 2020 project. The purpose of the overview was to identify responsibilities of different agencies and to identify gaps or overlaps in policies. The agencies included are Department of Conservation, Department of Internal Affairs, Environment Waikato, Ngāti Tūwharetoa Māori Trust Board and Taupo District Council. There is a wide range of existing policy which contributes to these values. There is a significant amount of policy in relation to managing water. Safe swimming, Good trout fishing and Commercial opportunities were also well covered. Further policy may be required in relation to Diverse plants and Weed-free Lake, Recreational opportunities and Foreshore reserves (particularly access issues), Wilderness areas, Outstanding scenery and Geological features, Cultural values (particularly identifying and protecting significant features and decision-making processes). This policy overview should only be regarded as a snapshot in time.

Donaldson, C. and Huser, B. (2004). *Proposed Indicators and Performance Standards for 2020 Taupo-nui-ā-Tia. Prepared for 2020 Taupo-nui-ā-Tia, Environment Waikato.*

The report contributes to the establishment of a monitoring framework for the 2020 Taupo-nui-ā-Tia project - in particular the development of indicators and performance standards to:

- track progress towards achieving the community/iwi values
- assess the effectiveness of the identified actions
- identify any emerging issues.

The process of developing the suggested indicators is based on a web and literature review, various 2020 Taupo-nui-ā-Tia documents and a workshop with the 2020 Taupo science advisory panel. The indicators suggested in this document are the first step in a process of developing and selecting 'milestones' for reporting on the ongoing health of Lake Taupo and its surrounding catchment. It is expected that the approach and the proposed indicators will be further modified through input from community groups (LWAG, 2020 Forum) and stakeholders as the development of the 2020 Action Plan progresses. The indicators developed so far are mostly ecologically focused, although some attempt has been made to include indicators for quality of life and economic values. It is expected that the community will provide input into the indicator set, which will more fully represent quality of life concerns.

Hall, J. and Matheson, F. (2004). *2020 Taupo-nui-ā-Tia Research Plan. Report prepared for Sustainable Management Fund (Ministry for the Environment) and Environment Waikato. NIWA Client Report HAM2004-054, June 2004. National Institute of Water and Atmospheric Research Ltd.*

This report presents the Research Plan for the 2020 Taupo-nui-ā-Tia project for the purpose of preparing a priority list of research needs. The research needs were matched to the threat priorities identified in the Ecological, Human health and Quality of life risk assessments and the priority placed on the value by the Taupo community. Each research need was assigned an Ecological, Human health and Quality of life threat priority score and a community value score. All four scores were then combined to produce an overall ranking. High, medium and low priority research need lists were formulated based on these overall rankings. Research needs identified under the High quality inflowing water, Safe swimming and Safe drinking values ranked most highly. The ranking process used in this report is transferable and could be used in other lake management projects to rank and prioritise research needs. To ensure the research needs identified in this plan are considered widely, the high and medium priorities have been included in the Taupo-nui-ā-Tia 2020 Action Plan. It is intended that researchers will take into account the research needs and priorities when proposing research programmes and that in turn a wide variety of funding agencies (including the Foundation for Research Science and Technology (FRST), Regional and District Councils and District Health Boards) will refer to this research plan when considering research proposals for funding.

Huser, B. (2002). *A Review of Current Information on Taupo Community Values. Prepared for 2020 Taupo-nui-ā-Tia, Environment Waikato.*

Prepared as part of the project *2020 Taupo-nui-ā-Tia: an action plan to protect the health of Lake Taupo and its surrounding areas*, this report collates a series of reviews of the scientific information on various topics that are important for the Taupo community. The reviews were undertaken by a team of experts under the guidance of the science co-ordinator of the 2020 Taupo-nui-ā-Tia project.

Huser, B. (2003). *Inventory of Current Research and Monitoring in Taupo. Prepared for 2020 Taupo-nui-ā-Tia, Environment Waikato.*

This report provides an outline of the monitoring framework for the 2020 Taupo-nui-ā-Tia Project. The aim of the monitoring framework is to gather the information necessary to support implementing the 2020 Action Plan. As a first step, an inventory of current monitoring and research activities undertaken in the Lake Taupo catchment has been prepared. The inventory includes four parts: regular monitoring activities (ongoing), research projects and investigations (one-off), resource consents that include significant monitoring requirements as part of consent conditions and indicators used by local and central government agencies. The inventory shows that a lot of effort is currently going into monitoring and research in the Lake Taupo catchment, indicating a solid basis for sustainable planning and decision-making.

Huser, B. (2004). *2020 Taupo-nui-ā-Tia Monitoring Plan. Report prepared for 2020 Taupo-nui-ā-Tia, Environment Waikato (in prep).*

The 2020 Taupo-nui-ā-Tia Monitoring Plan identifies over 50 indicators that will be measured to track progress towards the 2020 community outcomes and values. For each indicator the plan provides details about what will be measured, how this will be done, when measurements will be undertaken and how often. The plan also identifies the agency responsible for monitoring and how the data will be analysed and reported. The indicators help to assess the effectiveness of the actions identified in the 2020 Taupo-nui-ā-Tia Action Plan and to highlight any emerging issues. To ensure cost effectiveness the selected indicators make best use of existing monitoring activities carried out in the Taupo catchment.

Huser, B., Donaldson, C. and Thomson, J. (2002). Risk Assessment Report. Prepared for 2020 Taupo-nui-ā-Tia, Environment Waikato.

Prepared as part of the 2020 Taupo-nui-ā-Tia Project: an action plan to protect the health of Lake Taupo and its surrounding area. The 2020 project is a three-year Sustainable Management Fund (Ministry for the Environment) initiative to develop an action plan for Lake Taupo and its catchment in order to protect community identified values. The 2020 Taupo-nui-ā-Tia project is being implemented using three strands: science, iwi, and community. Each strand has a co-ordinator who manages the relevant information collection and review. For the final stage, the preparation of a strategy and Action Plan for the sustainable management of Lake Taupo and its surrounding area, the information from the three strands will be combined to feed into a participatory multi-stakeholder process (2020 Forum). One of the steps identified in the project is a comparative risk assessment as a method of identifying and prioritising risks to the community values to set priorities for action.

McBride, G. (2003). Human Health Risk Assessment. Prepared for 2020 Taupo-nui-ā-Tia, NIWA/Environment Waikato.

This report describes and ranks the threats to the 2020 community values from a human health perspective. From the list of over 100 potential threats identified in the 2020 Taupo-nui-ā-Tia project, 32 were identified as threats to human health. All these threats relate to drinking water and recreational water use. The relative ranking of these risks was established using comparative risk analysis methodology. The majority of the threats pose only a low (eight) or medium (three) risk. The risks with the highest relative ranks were faecal micro-organisms in roof tank water (from birds), in lake water (from septic tanks, pipe failure, stormwater and wildfowl), in groundwater (from surface leakage), beach litter (nails and glass shards) causing wound infection, toxic algal blooms in lake water (impairing drinking water quality at source) and chemicals in groundwater (As, B, Mn) for susceptible persons.

Ngāti Tūwharetoa. (2003). Ngāti Tūwharetoa Environmental Iwi Management Plan. Prepared for 2020 Taupo-nui-ā-Tia by Maria Nepia, Ngāti Tūwharetoa Maori Trust Board.

The Ngāti Tūwharetoa Environmental Iwi Management Plan (Ngāti Tūwharetoa EIMP) is based on Ngāti Tūwharetoa tikanga and kawa and builds upon the foundation established by the Ngā Hapū o Ngāti Tūwharetoa Environmental Strategic Plan 2000. The Ngāti Tūwharetoa EIMP establishes Ngāti Tūwharetoa environmental base lines and provides tools that will help hapū/whanau and the tribe as a whole achieve and protect those base lines. The Ngāti Tūwharetoa EIMP is driven by the desire to protect Lake Taupo-nui-ā-Tia. However, it does not exclude other taonga within the rohe, as a holistic view of the environment is at the very core of Tūwharetoa resource management. While the process of developing this document has been administered by the Tūwharetoa Māori Trust Board, the Ngāti Tūwharetoa EIMP has been authored by and for Tūwharetoa interests (such as ngā hapū, whanau and economic authorities).

Ngāti Tūwharetoa. (2003). Ngāti Tūwharetoa Comparative Risk Assessment Report. Prepared for 2020 Taupo-nui-ā-Tia by Maria Nepia, Ngāti Tūwharetoa Maori Trust Board.

This report establishes a Tūwharetoa comparative risk assessment process, which has been identified as a tool to help protect and achieve those environmental goals identified in the Ngāti Tūwharetoa EIMP. The Tūwharetoa comparative risk assessment is only the half way mark of a bigger process. The next step is identifying and implementing the solutions to those issues identified in the top ten list. The top ten issues include a number of threats related to lack of partnership between Ngāti Tūwharetoa and government agencies and confusion of roles and responsibilities, intellectual and cultural property rights, adverse effects of mauri, wāhi tapu and mahinga kai.

Pearson, J. and Huser, B. (2003). 2020 Taupo-nui-ā-Tia Communications and Dissemination Tools Report. Prepared for 2020 Taupo-nui-ā-Tia, Environment Waikato.

This report identifies the tools and communications methods used to disseminate the science information gathered and to assist with completing a strategy which will be accepted and acted on by the Lake Taupo community. It also includes a Communications Strategy.

Sanders, T. (2001). Taupo-nui-ā-Tia Summary of Community Values. Prepared for 2020 Taupo-nui-ā-Tia, Taupo District Council.

This report provides a summary of community values, issues and objectives captured in the Draft Lake Taupo Accord validation survey and three other community surveys. The summary will provide the foundation for subsequent phases of the 2020 Taupo-nui-ā-Tia community values strand and the science (research and monitoring) strand. It is important for the science and research phase of the 2020 Taupo-nui-ā-Tia project to be clear on what the community values about Lake Taupo and its catchment, so scientists can accurately assess risks to those values in a useful manner to guide future decision making.

Sanders, T. (2002). Draft Organisational Activities Wiring Diagram. Prepared for 2020 Taupo-nui-ā-Tia, Taupo District Council.

This document details the roles and responsibilities of agencies and identifies the opportunities for the involvement of other stakeholders with regard to Lake Taupo and the catchment. The diagrams identify who is responsible for different management aspects of the Lake and catchment.

Stewart, C. (2002). Economic links to the 2020 community values. Unpublished report prepared for the 2020 Project Team.

This document identifies economic considerations relevant to the 2020 community values. The first part is a background review of general economic information available for the Taupo district and catchment. Building on this, the second part identifies and discusses threats and risks both to economic development, and from economic development to the community values. Threats to economic development are grouped into: threats to business development, diversification of land use, energy generation, 'added value' developments for primary industries, tourism expansion and community development. Threats to Lake Taupo's community values from economic development include threats to water quality, recreational resource, habitat and ecological values and aesthetic qualities. The project also used information from the Taupo District Economic Development Strategy prepared by APR Consultants Ltd to help identify the list of threats.

Stewart, C., Donaldson, C. and Pearson, J. (2004). Quality of life risk assessment. Report prepared for 2020 Taupo-nui-ā-Tia, Environment Waikato.

This report describes the process used to conduct a risk assessment of threats to Quality of life and presents the results. The purpose of the risk assessment was to rank the threats in order of importance to set priorities for actions (refer to the 2020 Taupo-nui-ā-Tia Action Plan). Quality of life includes human concerns and values relating to public access, recreational amenities, heritage, security and safety and aesthetic values such as landscape and scenery. The ranking was achieved by surveying a number of representative community groups using a questionnaire (ballot system). A total of 73 forms were completed from five groups. The summed scores for each of the 22 threats were grouped into 'high', 'medium' and 'low' risks. The four highest ranking threats were sewage pollution in the water, toxic algal blooms, declining water clarity and weed growths along the shoreline.

Stewart, C., Leonhard, G., Johnston, D. and Huser, B. (2004). 2020 Taupo-nui-ā-Tia: Involving the Community in the Protection of Lake Taupo and its Surrounding Area. Report prepared for 2020 Taupo-nui-ā-Tia, Institute of Geological and Nuclear Sciences science report 2004/04.

This report presents the results of a recent resurvey of Taupo district residents to determine:

- the effectiveness of the 2020 Project communication tools
- public awareness of and involvement with the 2020 Project
- any changes in attitudes and perceptions in the longitudinal sample of people who participated in the previous survey in 1999
- a robust set of baseline data against which to assess future trends in the above.

Of 1203 questionnaires delivered to households throughout the Lake Taupo catchment, 451 were sent back. The general public are reasonably well-informed about risks to Lake Taupo. Key messages of the 2020 Project appeared to have been assimilated by the survey respondents. There were two main exceptions to this encouraging picture: a lack of understanding of the long-term nature of Lake Taupo's groundwater system (which implies a considerable time-lag between management actions and environmental improvements) and confusion over the main causes of Lake Taupo's water quality problems. Respondents identified a strong preference for print media, particularly local newspapers, as a source of information about the 2020 Project. Other findings were that the 2020 Project has created a high public profile, with 44 percent of respondents aware of it.





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2020 Forum

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Ngāti Tūwharetoa hapu

Economic authorities

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