
19 Monitoring and Plan Review

19.1 Introduction

The Resource Management Act establishes a general duty for Environment Bay of Plenty to monitor the suitability and effectiveness of this regional plan (section 35(2)(b)). The Act also requires regional councils to gather such information as is necessary to carry out its resource management functions effectively. It further requires regional councils to monitor the state of the environment and the exercise of resource consents.

19.2 Monitoring Programmes

Environment Bay of Plenty has been involved in extensive monitoring of water quality and quantity in the Tarawera River. This has included detailed studies of water chemistry, toxicology, ecology, oxygen content, colour and clarity.

Monitoring activities which Environment Bay of Plenty carries out in the Tarawera River catchment include the following:

19.2.1 Natural Regional Monitoring

Environment Bay of Plenty has established an effective monitoring system in the form of its Natural Environment Regional Monitoring Network (NERMN)¹¹⁵. The goal of this network is:

To provide scientifically defensible information on the important physical, chemical and biological characteristics of the Bay of Plenty region as a basis for the preparation of Council policy statements and management plans and the monitoring of the suitability and effectiveness thereof.

This network includes ongoing investigations into the natural and physical resources of the Bay of Plenty, with regular reporting on both status and trends. A summary of the NERMN sites in the Tarawera River catchment and the parameters measured is described in Appendix 10.

19.2.2 Compliance Monitoring

Compliance monitoring takes place through self-monitoring by the consent holder and additional monitoring by Environment Bay of Plenty. Under this regional plan any discharge of a contaminant to surface water must comply with rules given in Chapter 15 – *Water Quality*. In addition, certain consents may include specific conditions which will require compliance monitoring.

19.2.3 Impact Monitoring

Monitoring of the environmental impact of specific consents (particularly discharges) will be carried out by Environment Bay of Plenty. This monitoring is not necessarily directly related to compliance with the rules presented in this regional plan.

¹¹⁵ Environment Bay of Plenty, 1993.

19.2.4 Dissolved Oxygen Monitoring

Dissolved oxygen and temperature are at present monitored at 15 minute intervals by recording instruments at Pipe Bridge, Awakaponga and Matata. This monitoring assesses both the impact of the organic discharges at Kawerau and compliance with dissolved oxygen standards. River flow is monitored at Pipe Bridge and Awakaponga.

Environment Bay of Plenty intends to rationalise its permanent sites by discontinuing intensive dissolved oxygen monitoring at Pipe Bridge and Awakaponga. It is considered that the extra cost of maintaining these sites outweighs the benefit of the additional information. Dissolved oxygen levels are always lowest at Matata and this is therefore the logical site to maintain intensive monitoring.

Numerical modelling has allowed the relationship between the discharge of BOD at Kawerau and dissolved oxygen depletion in the lower Reach of the Tarawera River to be calculated. Discharge load for BOD from Tasman Pulp and Paper Company Limited and Carter Holt Harvey Tissue are to be calculated from the river temperature at Matata and the river flow recorded at Awakaponga. The continued existence of the flow recording site at Awakaponga and the dissolved oxygen and temperature monitoring site at Matata is therefore essential for the operation of this regional plan. This information will provide feedback to Environment Bay of Plenty and industry on the efficacy of the dissolved oxygen model.

19.2.5 Toxicity and Ecological Monitoring

Extensive baseline toxicity and ecological monitoring was carried out during the technical investigations that preceded the compilation of this regional plan. These investigations provide details of the state of the Tarawera River between 1990 and 1994. Environment Bay of Plenty intends to carry out similar toxicity and ecological investigations in 1997/98 and 1999/2000 to monitor the success of this regional plan. The following methods of investigation will be undertaken.

- Instream macroinvertebrate monitoring;
- Resin acid content of effluents and river water;
- Chlorinated organic compounds in effluents and feral eels;
- Blood plasma enzymes, blood chemistry and liver inspection of feral eels;
- EROD activity in feral eel livers;
- Chronic and acute toxicity testing.

The results of the above investigations should reflect the classification of the river and satisfy the requirement that there shall be no detectable increase in toxicity as a result of any discharge of a contaminant into the water.

19.2.6 Other Monitoring

Environment Bay of Plenty also has access to information on land management practices through the use of aerial photography, soil conservation assessments, the preparation of Farm Environment Plans and the issuing and the monitoring of landuse consents. In addition Environment Bay of Plenty collates social and economic information, as well as conducting surveys on community perceptions and issues relating to resource management.

There are a number of areas, such as the preservation of natural character, the protection of flora and fauna, recreational opportunities, and natural hazard avoidance and mitigation on which Environment Bay of Plenty is developing monitoring strategies. These additions to Environment Bay of Plenty's monitoring programmes are important for evaluating the effectiveness of the objectives, policies and methods of implementation contained within this regional plan.

Finally, it is emphasised that the purpose of monitoring is to assist in decision making as well as to ensure that provisions within this regional plan or conditions on consents are appropriate. In addition to Natural Environment Monitoring, there may be circumstances in which monitoring will be contracted out to other agencies or set as a requirement on a consent. In some cases it may be appropriate for iwi and community groups to be involved with monitoring.

19.2.7 Environmental Standards and Research Protocols

When testing and assessing the physical, ecological and chemical effects of discharges into the Tarawera River or its tributary lakes and streams, Environment Bay of Plenty will seek to use accepted contemporary environmental standards and research protocols to provide comparable environmental protection and high quality research results. Environment Bay of Plenty may also choose to adopt, as appropriate, any research standards or protocols in order to further national or international understanding of the impact and consequences that discharges may have on surface and groundwater quality. In its investigations, Environment Bay of Plenty may also include research into effects of particular compounds or components in a discharge, or any synergistic or cumulative effects resulting from the mixing of discharged contaminants. To achieve quality and comparable results, Environment Bay of Plenty may adopt international or agency standards or protocols, including those developed and used by OPEC, USEPA, ANZEC or any other recognised standard.

19.3 Issues, Objective, Policies, Methods of Implementation and Principal Reasons

19.3.1 Issues

Issues relating to monitoring include:

- 19.3.1(a) There is a need to acquire and maintain sufficient information to allow the effective management of natural and physical resources in the catchment of the Tarawera River.
- 19.3.1(b) The understanding of the fate and effect of contaminants in the aquatic environment is continually evolving.
- 19.3.1(c) In order to be effective, the review of this plan must have consideration to advances in environmental knowledge, research protocols and the setting of standards for environmental protection.

19.3.2 Objective

Effectively monitor the natural and physical resources of the catchment of the Tarawera River and the effects of activities upon these.

19.3.3 Policies

- 19.3.3(a) To acquire and maintain sufficient information on natural and physical resources through:
- Natural Environment Regional Monitoring;
 - Compliance monitoring;
 - Impact monitoring;
 - Other monitoring as required.
- 19.3.3(b) To maintain sufficient monitoring facilities and programmes to ensure the adequate monitoring of the resource management issues addressed in this regional plan.

- 19.3.3(c) To ensure that monitoring of natural and physical resources is oriented to provide information for the evaluation of the objective and policies of this regional plan.
- 19.3.3(d) To use accepted contemporary environmental standards and research protocols to provide comparable high quality environmental and research results, including, as appropriate, any national, international or agency standards of protocols.

19.3.4 Methods of Implementation

Environment Bay of Plenty will:

- 19.3.4(a) Maintain the present Natural Environment Regional Monitoring programme within the Tarawera River catchment in order to provide baseline data and trend monitoring of natural and physical resources.
- 19.3.4(b) Document and report on the natural and physical resources of the catchment of the Tarawera River and the effects of the use, development and protection of these resources.
- 19.3.4(c) Assess information needs and undertake or require special investigations and/or research as is appropriate within the catchment of the Tarawera River.
- 19.3.4(d) Adopt or use, as appropriate to circumstances, accepted contemporary or comparable national, international or agency accepted environmental standards or research protocols, including those standards or protocols developed by OPEC, USEPA and ANZEC.
- 19.3.4(e) Require, as appropriate, self-monitoring by resource consent holders as a condition of consent.
- 19.3.4(f) Maintain a database of all resource consents granted by Environment Bay of Plenty or its predecessors.
- 19.3.4(g) Maintain a compliance and impact monitoring programme to ensure that consent conditions on resource consents and activities permitted by Environment Bay of Plenty, are met and that no unanticipated adverse environmental effects are occurring.
- 19.3.4(h) Maintain a database of structures located on, in, under or over the beds of rivers and lakes in the Tarawera River catchment.

19.3.5 Principal Reasons

This regional plan is intended to ensure the monitoring of the state of the catchment of the Tarawera River. It has the dual role of establishing the evaluation of the effectiveness of objectives, policies and methods contained within this regional plan. It refers primarily to both natural and physical resource management issues, as well as related social, economic and public perceptions monitoring.

The policies are intended to ensure that there is adequate information to allow the ongoing evaluation of the effectiveness of this regional plan. In addition, Policy 19.3.3(a) promotes the setting of monitoring priorities.

The principal reasons for the methods of implementation relate to the need to maintain continuous or regular monitoring and investigation of the state of the catchment of the Tarawera River and provide baseline data and trend monitoring. In addition, impact and compliance monitoring is essential to the continued assessment of the effects of activities.

19.4 Plan Review

Environment Bay of Plenty is required to begin a full review of this plan no later than ten years after the regional plan becomes operative. The Resource Management Act 1991 requires that Environment Bay of Plenty state the procedures to be used to review the matters set out in section 62(a)-(h) of the Act, which are dealt with in this regional plan. The decision to review this regional plan after ten years is based on a number of factors including:

- The current and future likely effects of wastewater discharges to the Lower Reach of the Tarawera River.
- Changing production demands and processes, including the planned construction of recycled paper processing facility by the Tasman Pulp and Paper Company Limited.
- The development and installation of enhanced wastewater treatment systems.
- Changing public perceptions about environmental standards.
- The need to analyse the effectiveness of the policies and methods contained in this regional plan, some of which deal with complex issues.

The review of the regional plan must be carried out in accordance with the procedures in Part 1 of the First Schedule to the Resource Management Act 1991. The review process needs to focus on resource management issues, and on whether the policies and methods contained within this regional plan are effective or still appropriate, and the objectives are realistic and achievable. All reviews and any intermediary changes to the regional plan must be undertaken in consultation with iwi authorities and all relevant agencies and interest groups, regardless of whether they are specifically noted in the First Schedule to the Act.

To provide continuity and a wide consultation and perception base from which to assess the effectiveness of the plan, Environment Bay of Plenty supports the continuation of the Tarawera River Liaison Group. The group has contributed valuable information, perspectives and problem resolution ideas and means during the process of developing this regional plan. Although it is recognised and respected that there are and remain philosophical differences of opinion between members of the group, and that these differences will probably need to be assessed through a judicial process, the constructive consultation and debate at group meetings have resulted in the setting of definitive goals for the plan. Environment Bay of Plenty will support extending the representation base of the group as appropriate.

19.5 Issues, Objective, Policies and Methods

19.5.1 Issues

Issues relating to plan review include:

- 19.5.1(a) Without the review of this regional plan within a realistic time frame, it would be extremely difficult to assess the attainment of the stated objectives or to take account of changes in industrial technology, environmental research and standards, and community aspirations.
- 19.5.1(b) Dialogue, information sharing and debate at Tarawera River Liaison Group meetings have greatly contributed to the establishment of standards and goals to focus this regional plan. It would be of benefit if the group would continue to contribute to the development, review and monitoring of the plan.

- 19.5.1(c) There needs to be a continued availability of information to the community from both Environment Bay of Plenty and water users on progress with the implementation of plan goals.

19.5.2 Objective

Continued improvement of objectives, policies, and methods of implementation that ensure the sustainable management of natural and physical resources within the Tarawera River catchment.

19.5.3 Policies

- 19.5.3(a) To commence a review of this regional plan within ten (10) years of it becoming operative.
- 19.5.3(b) To assess the effectiveness of the policies and methods in achieving the objectives and stated environmental outcomes.
- 19.5.3(c) To inform the community of the effectiveness of the policies and methods in achieving the objectives and stated environmental outcomes.
- 19.5.3(d) To continue the Tarawera River Liaison Group as a consultative organisation.
- 19.5.3(e) To promote reports from nominated industries that use the water of the Tarawera River catchment for supply of discharge purposes, as part of the liaison process.
- 19.5.3(f) To produce annually a report on the effectiveness of achieving the aims, objectives,, policies and implementing methods in this regional plan.

19.5.4 Methods of Implementation

Environment Bay of Plenty will:

- 19.5.4(a) Initiate a full review of this regional plan not later than nine (9) years from the date the plan became operative.
- 19.5.4(b) Operate a register of matters that may require consideration in any review of the regional plan, including but not limited to the following:
- 19.5.4(2)(i) Matters of concern, data, or information provided by any person;
- 19.5.4(2)(ii) The results of Environment Bay of Plenty's Natural Environment Regional Monitoring Network;
- 19.5.4(2)(iii) The results of monitoring activities undertaken by resource consent holders;
- 19.5.4(2)(iv) The results of monitoring activities undertaken by Environment Bay of Plenty;
- 19.5.4(2)(v) The results of ecology and toxicity monitoring carried out in 1997/98 and 1999/2000;
- 19.5.4(2)(vi) The results of monitoring activities or evaluations undertaken by other agencies;
- 19.5.4(2)(vii) The results of periodic monitoring of the views and aspirations of the regional or local community with regard to the management and use of natural and physical resources;
- 19.5.4(2)(viii) Other monitoring or research results which have relevance to the regional plan.
- 19.5.4(c) In viewing this regional plan, determine:

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- 19.5.4(3)(i) Whether or not the policies and methods are achieving the objectives;
- 19.5.4(3)(ii) Whether or not the policies and methods are achieving the anticipated environmental results;
- 19.5.4(3)(iii) Whether or not the objectives continue to be realistic or achievable;
- 19.5.4(3)(iv) The relevance of issues;
- 19.5.4(3)(v) Whether new or additional issues have arisen which require attention in the regional plan;
- 19.5.4(3)(vi) The necessity of the objectives, policies, and methods of implementation to continue to reside within this regional plan or to form part of a separate regional plan or plans.
- 19.5.4(d) In reviewing this regional plan, make an assessment of the degree to which the relevant policies and methods are reflected in district plans.
- 19.5.4(e) Initiate meetings of the Tarawera River Liaison Group as required, to consider matters arising from the performance monitoring of the regional plan, or any other relevant matter relating to the Tarawera River catchment.
- 19.5.4(f) Produce for public information an annual Status Report on the effectiveness of the aims, objectives, policies and methods in this regional plan.

