

REGULATORY AND NON REGULATORY OPTIONS IN ACHIEVING REDUCTION IN NON POINT SOURCE POLLUTION IN THE ROTORUA DISTRICT

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Intensive agricultural activities have attributed to an increased contribution of nonpoint source pollution. In particular the transfer of nutrients (nitrogen and phosphorus) from land to waterways has resulted in the impairment of water quality. The major pressure is from the intensification of farming activities which accounts for 75% of nitrogen and 46% of phosphorous entering the lakes in Rotorua. The water quality of the lakes has been declining for at least 30 to 40 years. This has resulted in eutrophication and increasing occurrence of toxic blue green algal blooms which are of particular concern.

The Rotorua's regulatory councils (Rotorua District Council (RDC) and Environment Bay of Plenty (EBOP)) have been implementing management options to improve the water quality of its lakes since the 1990's. The water quality of the lakes have been declining for at least 30 to 40 years. The major pressure is from the intensification of farming activities which accounts for 75% of nitrogen and 46% of phosphorous entering the lakes. This has resulted in eutrophication and increasing occurrence of toxic blue green algal blooms which are of particular concern.

The actions are under way to improve water quality of the Rotorua Lakes with the use of the Rotorua Lakes Protection and Restoration Programme as one of the initiatives, Resource Management Act 1991 (RMA) statutory plans, Ministry for the Environment support for further monitoring and research and Treaty settlement signed in 2004 by Te Arawa and the Crown for restoration of Rotorua Lakes.

For example, the Ohau Channel Diversion Wall has been placed by EBOP along the western edge of Lake Rotoiti for diversion of water from Lake Rotorua (via the Ohau Channel) away from the main body of Lake Rotoiti, and down the Kaituna River instead. This action is expected to improve Lake Rotoiti's water quality within the next five years, however it will not be certain if this will have a noticeable impact on the Kaituna River.

EBOP's environmental scientists monitor lake water quality and calculate trophic level index (TLI) as part of its state of environment monitoring and its assessment of the Lakes TLI targets.

RDC is using Rotorua Lakes Protection and Restoration Programme - Joint Strategy Committee as an initiative to monitor the lakes water quality. A major focus of the Programme is to reduce nutrients in the lakes. The group is responsible for coordinating policy and actions to improve the Rotorua lakes. The committee is now established in law, as part of the Te Arawa Lakes Settlement for coordinated management of the Rotorua lakes.

The main aim of the programme is to have an action plan for each lake. The programme has achieved in implementing the action plans for Lake Okareka and Lake Okaro. Lake Rotoiti and Rotoehu have proposed action plans that are undergoing a public consultation process. The Joint Strategy Committee are drafting the action plans for Lake Tarewera and Rotoma. Background work for Lakes Tikitapu, Okataina and Rotokakahi's action plans are underway. Background work for Lakes Tikitapu, Okataina and Rotokakahi's Action Plans are underway. An Action Plan process for Lakes Rotomahana and Rerewhakaaitu will start in July 2012. Rotokakahi's action plan is scheduled to start in 2011.

For example, Lake Okareka action plan has started the implementation process and some of the actions listed are:

- Full reticulated sewerage scheme for Lake Okareka area;•
- Construction of wetlands for reduction of nutrients to the lake;•
- Discussion on reduction of farming nutrients to the lake;•
- Land use change options;•
- Lake treatment options;•
- Monitoring ongoing levels of nutrients in the lake;•
- Regulation (EBOP Regional Water and Land Plan, Proposed Rule • 14 for management of nutrients).

Conclusion

Managing nonpoint source pollution from agricultural activities continues to be one of the more intractable challenges for environmental policy. The legislative and voluntary options are there to address non point source pollution however there needs to be an integration of regulatory and voluntary options to achieve environmental management. The Rotorua Lakes Protection and Restoration Programme is an example of an integrated approach of legislative and voluntary options and the programme is trying to achieve the water quality targets for reduction in non point source pollution.

References

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