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## **Nitrogen trading in the Lake Rotorua catchment**

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### **Executive Summary**

Achieving the sustainable nitrogen limit set in the Bay of Plenty Proposed Regional Policy Statement (Proposed RPS) for the Lake Rotorua catchment will be challenging. Providing landowners with options on how they can get to where rules will require them to be will be essential to get buy-in of any framework developed.

Nitrogen trading is one of the possible tools that could be developed to support the allocation of nitrogen in the catchment. It can enable landowners to manage in the most efficient way possible by aligning economic returns with environmental issues.

To date, staff and the Stakeholder Advisory Group have been working under the assumption that nitrogen trading will be one of the possible tools available to landowners to help them work within the sustainable nitrogen limit. Decisions so far have reinforced this assumption, in particular the Oturoa agreement.

Council has not yet made an explicit decision to include nitrogen trading as part of the rule regime for achieving Lake Rotorua's sustainable limit. Confirmation is needed that nitrogen trading should be investigated as a potential tool to support the management of nitrogen in the catchment.

### **1 Recommendations**

**That the Strategy, Policy and Planning Committee under its delegated authority:**

- 1 Receives the report, Nitrogen trading in the Lake Rotorua catchment.**
- 2 Approves the development of options for nitrogen trading in the Lake Rotorua catchment.**
- 3 Notes that this report will be presented to the Rotorua Te Arawa Lakes Strategy Group for endorsement at their next meeting.**
- 4 Confirms that the decision is within the Bay of Plenty Regional Council's strategic planning framework (Council's Ten Year Plan, and planning documents and processes under the Resource Management Act 1991,**

**Biosecurity Act 1993, Land Transport Management Act 2003, Civil Defence and Emergency Management Act 2002, and Local Government Acts 1974 and 2002).**

## 2 **Purpose**

To provide an overview of nitrogen trading and get confirmation that nitrogen trading should be investigated as a potential tool to support the management of nitrogen in the Lake Rotorua catchment.

## 3 **Background**

Achieving Lake Rotorua's sustainable nitrogen limit is the focus of another report on this agenda "Rules and Incentives Framework for the Lake Rotorua Catchment". The detail of what is required and by when is provided in that report.

To date, staff and the Stakeholder Advisory Group have been working under the assumption that nitrogen trading will be one of the possible tools that landowners can use to help them achieve nitrogen reductions required. Options analyses undertaken for the rules and allocation work have been developed under this assumption.

Decisions to date have also reinforced this assumption, in particular the Oturoa agreement, which notes:

"Nutrient trading can offer an additional tool to achieve the target set in the Proposed Regional Policy Statement and that a key role of the Stakeholder Advisory Group will be to provide advice on the development of a scheme that may involve trading and/or purchasing of nitrogen."

Despite these assumptions, Council has not yet made an explicit decision to include nitrogen trading as part of the rule regime for achieving Lake Rotorua's sustainable limit and confirmation is needed that nitrogen trading is a potential tool to support the management of nitrogen in the catchment.

This confirmation is also needed because of the considerable work required to navigate the complexity of trading.

## 4 **Comment**

### 4.1 **What is trading?**

Trading, in the context of the environment, is a market-based mechanism that can be used to help achieve an environmental goal. In a nutrient reduction scenario, such as the Rotorua situation, trading provides economic incentives for supporting overall catchment reductions. It is premised on the fact that the costs to reduce discharges will differ among individual entities depending on their size, location, scale, management and overall efficiency.

Trading operates where there is a limit (or cap) on the total annual discharge permitted in a catchment at a level that will achieve a specified environmental goal. This cap is then allocated between the relevant dischargers (e.g. farms, factories) in the catchment, as discharge allowances.

Landowners are required to hold sufficient allowances to cover their total discharge. Those landowners that do not hold enough allowances to cover their discharge must reduce their losses or buy additional allowances from other participants who have surplus – this buying and selling of allowances is market-based trading.

In the case of the Lake Rotorua catchment, the environmental goal is to achieve a trophic level index of 4.2 for the lake. The Proposed Regional Policy Statement has set a sustainable limit for nitrogen (435 tonnes/yr) and rules are currently being developed to achieve the reductions required. As a part of this current framework a trading scheme, if pursued, would focus on trading nitrogen within the sustainable limit.

Theoretically this should provide benefits, as it will build the market for nitrogen trading which can then be utilised by the incentives scheme<sup>1</sup> and also allow efficient production within the environmental constraint.

#### **4.2 How does trading work?**

Trading places the focus of regulation on the issue of public interest (e.g. a clean Lake Rotorua) rather than issues of private interest (e.g. on which properties nitrogen discharge occurs). In doing so it gives landowners flexibility:

- (i) around their discharge level - they can increase, maintain, or decrease their discharge, as long as they hold sufficient allowances to cover this
- (ii) in how they mitigate their discharge levels - so long as the limit (or cap) is set and monitored in such a way that compliance with it ensures that the environmental goal is met, the regulatory system does not need to define how that cap is achieved

The flexibility that trading provides encourages profit maximizing landowners to mitigate as long as their cost of mitigation is less than the market price of allowances; those with low mitigation costs will mitigate and profit by selling allowances to those with higher mitigation costs.

Theoretically, this will ensure that that mitigation is carried out by those who can do so most cheaply, lowering the overall cost of meeting the limit set.

#### **4.3 What are the benefits and limitations of nitrogen trading?**

There are limited examples of trading schemes in place in New Zealand from which to draw from. The New Zealand Emissions Trading Scheme (NZ ETS) is the most well-known, however the scale and complexity of this scheme doesn't reflect the Lake Rotorua context.

The experience of trading for water quality purposes both internationally and nationally is very limited. Where examples exist, predominantly these have been set up to address point source reductions e.g. sewerage schemes.

Rule 11 of the Bay of Plenty Regional Water and Land Plan includes trading of sorts. The rule places a freeze on nutrient losses but allows offsetting of any increase of nitrogen or phosphorus through the use of various nutrient management options within and between properties in the same catchment. This type of

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<sup>1</sup> As referred to in the previous report Rules and Incentives Framework for the Lake Rotorua Catchment

offsetting is considered to be at the lowest end of the spectrum of what can be called trading, and has had a very limited uptake in practice.

The Lake Taupō nitrogen trading scheme established by Waikato Regional Council is the first non-point source to non-point source trading scheme in the world. The Lake Taupō scheme is more akin to Rotorua, albeit with a much smaller nitrogen reduction target required. The Waikato experience may provide some useful material from which to draw from in the development of any scheme for Lake Rotorua.

Further explanation of each of these examples can be found in Appendix 1.

Key learnings from the examples noted as well as from literature highlight the following limitations and benefits of nitrogen trading.

### **Limitations**

- Will support achieving the environmental goal defined by the cap but no more
- Requires supportive policies that allow flexible and 'real-time' responses
- Is appropriate only in catchments with large numbers of varied participants and where there is pressure to change
- Will only work if compliance is strictly enforced
- Often requires new technology (e.g. new software, database systems) and modification of existing procedures (e.g. consents process)
- Relatively new concept and so up-skilling will likely be required by any party that is operating an environmental market
- Can have high processing/transaction costs, such as Section 36 charges applied when a change to a consent is required
- Tradable activities relating to land use or practice change can pose challenges in ensuring these changes are permanent and not reversed in the future
- Risks associated with behaviours such as hoarding allowances or price speculation and windfall gains must be managed.

Notwithstanding the above, if carefully considered, a well-designed and operated tradable nitrogen regime can have the following benefits:

### **Benefits**

- Can theoretically lower the costs of achieving environmental goals
- Is performance not practice based - goals are achieved with the maximum possible flexibility, meaning the programme is not locked into a specified set of practices that require updating over time
- Promotes innovation - farmers, foresters and others have a direct interest in finding and implementing methods to reduce nutrients
- Complements and incentivises other policies in place for achieving reductions in nitrogen e.g. education and advice provided as part of the sustainable land management programme

- Provides flexibility in how the costs of achieving the goal are spread e.g. allowances can be allocated to groups who seem to face unreasonably high costs.

#### 4.4 **What are the costs of nitrogen trading?**

It is important to note that a trading scheme will result in some costs to Council and is also likely to result in costs to landowners. Although specific costs are unknown at this stage, likely costs are identified below.

##### ***Designing the trading mechanism***

This is designing the process of trading for the catchment. It is likely to include a start-up cost with staff time and most likely contractors bought in to assist with development.

##### ***Establishing the trading infrastructure***

This is the market place where landowners wanting to trade can find other parties. It is not a 'must have' and can be expensive depending on what is required. Waikato Regional Council developed a page on their website to fulfil this role and enable those wishing to buy allowances to find those wishing to sell them.

##### ***Establishing the platform for trading***

This is the mechanism or registry through which trades are tracked. As there is unlikely to be a huge number of trades at the outset this could be something as simple as a database that attaches to the consents database initially. Ensuring that staff are familiar with what they have to do to approve a trade will need to be incorporated into this process. Charges for this approval process could be included as part of the consenting process.

##### ***Nutrient budgets for new practices to trade***

This is a cost borne by landowners to demonstrate that they have reduced their nitrogen losses by X and that the purchaser has increased their nitrogen losses by X, and there is no net nitrogen increase to the lake.

There will be some staff (and other time) to get the mechanism set up, perhaps some infrastructure costs and then the rest are costs that are borne by the person wishing to trade.

##### ***Compliance/monitoring costs***

These are part of the allocation/rules process and are a cost that must occur whether trading is allowed or not. The only additional costs from trading would come about as a result of the administration and processing of changing the consent.

#### 5 **Why use nitrogen trading for Lake Rotorua?**

The scale of nitrogen reduction required in the catchment is vast and will be challenging to achieve. Providing landowners with options on how they can get to where the rules will require them to be will be essential to get buy-in of any framework developed.

Nitrogen trading provides landowners with an additional tool. It enables them to manage in the most efficient way possible by aligning economic returns with environmental issues. Landowners want and need this flexibility to ensure they have a range of land use options available to them and are not limited in their ability to seek the best outcome within the limit set.

While there can be limitations and risks associated with trading, many of the elements required for trading to occur are either already in place or in the process of being developed for the catchment. The proposed RPS has set the nitrogen limit (or cap). This is generally the most difficult element of trading to establish. The allocation of nitrogen allowances is currently being developed and once finalised, and rules are in place, landowners will be required to meet and report on their allocated allowance.

The following are three differing scenarios of how trading might occur in the catchment:

- Trade to buy e.g. using the incentives fund to purchase nitrogen allowances
- Trade to transfer e.g. the internal management of allowances across properties with the same owner
- Trade to operate e.g. the purchasing of allowances from others in the catchment to increase a properties discharge allowance.

The rules and incentives framework that is being presented to Council for a decision will achieve the sustainable pastoral load (256 tonnes nitrogen/yr) through a mix of nitrogen allocation and incentivised nitrogen reduction. The way in which trading can operate within this framework will need careful consideration. For example, it is proposed that the dairy sector will receive an average nitrogen discharge allowance of 35 kg nitrogen/ha/yr, and the drystock sector will receive 13 kg nitrogen/ha/yr. This will result in a pastoral load of approximately 386 tonnes nitrogen/yr. If trading is to occur the interaction with the incentives scheme will need to be clearly understood. The incentives scheme will have to participate in the market to reach the sustainable pastoral load.

Given the assumptions made to date in developing the framework, and that many of the elements required to establish a nitrogen trading scheme are already in place, it is the view of staff that carefully designed trading is a viable tool and that options for an appropriate trading regime should be explored.

## 5.1 **Lake Rotorua Catchment Stakeholder Advisory Group view**

The Stakeholder Advisory Group supports the investigation of options for trading nitrogen in the Lake Rotorua catchment. The Oturoa Agreement is clear that trading is a potential tool that could help achieve the catchment's sustainable nitrogen load. The Group are keen to work with staff throughout an assessment of trading options, including identification of a preferred approach.

## 6 **Next Steps**

If Council agree that trading is a viable tool to support the management of nitrogen in the catchment, the following steps are proposed:

- (i) Engage expert advice to investigate possible nitrogen trading options in the catchment, including mechanisms, set up requirements, costs and limitations of

each option. These options would be specific to the rules and incentives framework agreed by Council, rather than a theoretical exercise.

- (ii) Work with the Stakeholder Advisory Group throughout the assessment of trading options, including identification of a preferred approach
- (iii) Provide Council with options for implementing nitrogen trading in the catchment.

## **7 Financial Implications**

### **Current Budget**

The investigation of nitrogen trading options for the Lake Rotorua catchment is included in the existing programme budget.

### **Future Implications**

There will be costs involved in implementing nitrogen trading should it be progressed. Costs will vary depending on the complexity of the final option chosen. Any options that result in significant future budget implications will need to be considered and decided through Council's finance planning processes.

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**for Programme Leader (Water Policy)**

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