Options for Trading Nitrogen Discharge Entitlements in the Lake Rotorua Catchment

Robin Connor

The Challenge

Among the StAG membership and primary sector organisations there appears to be an acceptance that trading of nutrient discharge allowances (NDAs) is desirable for the long-term. Trading increases flexibility, allowing adjustment to farming systems over time within a defined catchment limit on nutrient discharges. As new technology and techniques emerge to deal with environmental impacts and to increase productivity, and markets for products change, farming will need to adapt. Social preferences and requirements for the management of discharges from properties may also shift. Trading of NDAs will allow adjustments to farming to occur within defined target outcomes for the Lake.

In the shorter-term outlook to 2032, the requirement is to provide support for managed reductions of discharges to get the catchment load down to the NDA target level. Agreement has not yet been reached – in the way that it has been for NDAs – to clearly define and allocate these "above the line" discharges as short-term entitlements (STEs), to enable their use in a trading scheme. This will be a necessary first step if they are to provide the flexibility trading can offer.

The degree of challenge faced by farmers in getting to their NDA allocations by 2032 will vary significantly among properties. Some have a lot more reductions to make than others, but generally – for the same activity – the lower the current discharges the more costly the next reductions will be. With well-defined entitlements and trading in place, some high dischargers whose costs per kg of reduction are low may be able to make significant early progress, and free up some STEs for lower dischargers whose costs are high or for other high dischargers that find it more economic to delay mitigation measures for a few years.

Approaches to Trading

A number of approaches to trading of nutrient entitlements are possible, but when the detail of how they can be implemented is examined they have different advantages and disadvantages. The following analysis of options is set in the context of the general recommendations on trading in the transition period already put to the StAG and Council staff. The key elements of these recommendations are:

- Define "above the line" discharges as specific binding short-term entitlements allocated to each property as a stepped reduction to 2032
- Provide for trading of these STEs from the start of the scheme

- Enable trading of long-term NDAs from 2022 (or from the point where the reduction goals of the incentive scheme have been achieved)

Trading cannot be considered independently from other aspects of the management regime. Its usefulness depends on how other aspects of the scheme are set up. As discussed in my November report, three key elements provide incentives for trading: resource scarcity, well-defined rights, and heterogeneity (in this case, differences among properties in both costs of mitigation and value generated by the ability to discharge nitrogen).

Scarcity is created by demand exceeding supply. Setting the limit for the catchment at a level lower than current use makes it scarce. Differences in the value of use of the resource across pastoral properties in the catchment then create the potential for win-win transactions between property owners. However, for owners to pay for a transfer of discharge entitlements, these need to be well defined so that the value of them can be determined and protected. Important elements of the definition of entitlements include what they allow the holder to do, for how long, and what happens at the end of that period.

The general management scheme proposed to date includes resource consents for farms and management plans as attachments to the consents that show how nitrogen discharges will be managed over time to achieve specific targets in 2022 and 2032. By 2032 discharges must be at or lower than the NDA holdings for the property. By 2022 discharges need to have been reduced to a target specified for the property in the management plan, with the sum of all such targets matching the requirements of the Regional Policy Statement (RPS) to have achieved 70% of the 2032 target by 2022.

One proposal to achieve these goals discussed between council staff and industry groups supporting farm planning is to engage each farmer in planning how they will reach their 2032 NDA allocation in a way that best suits them. Each plan will contain what can be thought of as a trajectory from current discharge levels down to their long-term NDA levels. The shape of that trajectory will be determined by what actions farmers plan to take to reduce discharges and when. Because the end point for each farmer is clearly defined by their NDA allocation, if each plan achieves the farm target then end point across all farms at 2032 will be met. The total across all farms at any point in the timeframe to 2032 would need to fit within a defined "margin of flexibility" around the line from baseline discharges to the 2032 NDA target. This would translate into a similar proportional margin for each individual property.

There are some potential problems with this proposal. One is that, particularly over a period where a lot of attention is being given to methods for both reducing environmental impacts of farming and increasing productivity, predicting what management practices will be applied to a farm up to fifteen years in advance with any accuracy is not really possible. Of course the plans can be revised and a general

approach based on current knowledge is advisable, but intermediate targets and emphasis on more specific short term planning (e.g. five year blocks) will provide more certainty at both the individual property level and for the catchment targets.

Under this approach to planning, it is difficult to see how trading would be useful. If each farmer is free to establish a plan and reduction trajectory that they are confortable with and intend to follow, why would they want to trade? Under this scenario there is little incentive to build in early action to reduce, and what would you be trading anyway if the entitlements are not defined and allocated to individuals?

In addition, the RPS target for 2022 is unlikely to be met unless individual targets for each property are set that add up to what is required. One approach to this problem would be to create management plans for all farms to suit their individual chosen trajectories, and from these add up where the catchment would be in 2022. If, as is distinctly possible, the total across plans turns out to be greater than the catchment target, a significant amount of further work would be required to revise and adjust plans to fit. Criteria would need to be devised for deciding which plans need to be changed and significant time and resources would be used in trying to make things work.

To increase certainty across the board it seems sensible to have property targets for 2022, and by extension, for the following five-year step to 2027. This would provide the same certainty of achieving the intermediate goals as if provided by the 2032 NDAs, and could be implemented in the same way, by allocating STEs as part of consents. The time frame of five years for detailed planning to achieve a specific target is much more realistic.

It can be argued that such intermediate constraints will make things more difficult for farmers restricting them to reduction steps that may be difficult to achieve. This is of course where trading can help. Trading in STEs for these five-year blocks will allow some farmers to delay reductions or even intensify in the short term while they work towards adjustments to their farm system over time. A very similar approach is in fact already in place under Rule 11, as offsetting.

Scheme Options

From the above discussion it can be seen that there are close links between achievement of the reduction goals for the catchment, farm planning, the definition and allocation of discharge entitlements, and potential entitlement trading. Three general scheme options can be drawn out.

1. Do not allocate or trade STEs. Establish a margin of flexibility around the straight line between the total baseline amount for the affected properties and the sum of their 2032 NDA targets, and apply this proportionally as a

constraint on individual farm plans. Requiring user defined 5 year measurable targets to be set in plans; and

Either

a. accept that at 2022 the catchment target for these farms may not be met, but will be within the margin of flexibility;

Or

b. engage is some process to rationalise across plans to ensure the overs and unders at 2022 balance, ensuring the RPS target is met.

2. In addition to the 2022 and 2032 catchment targets, establish an intermediate target for 2027, splitting the total reductions of above the line discharges into three 5 year blocks. Then apply option 1.

3. Adopt the three step targets as per option 2. Allocate STEs for each 5 year time period in proportion to baselines for each property (i.e. if a property baseline is 3% of the total of all baselines, then they will be allocated 3% of each of the five year targets). Enable trading of STEs.

Another option between 2 and 3 could use the stepped targets and proportional allocation but without trading of STEs. As discussed in the November report, trading in NDAs is not recommended before the incentive scheme target is achieved and this remains the recommendation under all of the options here.

Allocation and Trading Options

Establishing trading for STEs requires consideration of how the entitlements are defined and allocated. Three options are considered here.

1. A single type of STE (i.e. not 3 different time-bound blocks of entitlements), allocated to individuals as a share of the total available load represented by all STEs.
   - The total number of shares is arbitrary but could for example be 100,000. As the amount of STE load being allocated at the beginning of the scheme is 140 tonnes, this would make 1 share equivalent to 1.4 kg of nitrogen discharge per year.
   - In 2022 when the total STE load is reduced to 96 tonnes, the discharge entitlement of 1 share would reduce to 0.96 kg/yr. Similarly, in 2027, if the STE load was reduced to 48 tonnes, each share would be the equivalent of 0.48 kg/yr of discharge entitlement.
   - Under this option the STE loads could be established in the regional plan as targets that automatically become binding limits at the specified time. Therefore no change would be required to consents to adjust the amount of entitlements at the step down points.

- Trading of shares would be enabled from the start and could occur at any time. Farmers would need to bear in mind the fact that all shares devalue at the load step-down points.

2. A single type of STE (as option 1) but allocated to individuals as an absolute amount of discharge entitlements.
   - This would work in the same way as option 1 except that all consents would need to be amended at the step down points to change the absolute amount of entitlements.
   - In effect, the calculation of the new amount would be by proportion as would happen automatically under option 1 and if trading had taken place, this would be a different proportion to the original allocation.
   - This option provides a clearer guide to farmers as to how many kg/yr they have at any time, but is administratively more complex and costly at the steps. However, this could be made relatively painless through incorporation into an IT system.

3. Three different blocks or types of STEs would be created – one that expires in 2022 (44t), another that expires in 2027 and another that expires in 2032 (both 48t). These would be allocated in absolute amounts and would all be tradable at any time.
   - This option makes it clear at all times what amount of entitlement a farmer holds and when they will expire. They have the option to trade amounts of entitlements that expire on specific dates.
   - Again this is administratively more complex with 3 different types of STEs potentially being traded that will require tracking. However, this could be made relatively painless through incorporation into an IT system.
   - No consent changes would be required at the step-down with this option.

Implementation

To some extent, the offsetting provision under Rule 11 is a prototype for a trading regime.

[Need more information here, from Dwayne, on exactly how offsets work currently, how many times they have been used, how he sees entitlements being recorded in nitrogen management plans/consents and the associated changes required when a trade happens. I don't really understand the legal link between a number in a plan that is a means by which the conditions of the consent are given effect, and how this would be enforceable essentially as a condition (I think that is what Dwayne was saying). Anyway, does it matter, or is it just as easy to write the numbers on the consent and change them when a trade happens? Does a trade require a revised plan? Assume so.

If you can work out during the rule writing sessions how you think the above type of scheme could be implemented on consents in a way that makes compliance action as simple as possible then I will incorporate that and get it checked by the MPI legal section. Do you think I should put the options into a table and/or include diagrams of the steps and trajectories? The other thing to include would be Mike's proposal for the IT system that would provide the basis for storing plans and other information associated with nutrient management including tracking NDA and STE holdings and trades.

Don't hold back on feed back on what we have here so far. ☺ Rob]