



Ministry for the
Environment
Manatū Mō Te Taiao

Ministry for Primary Industries
Manatū Ahu Matua



To: Hon David Carter, Minister for Primary Industries
Hon Amy Adams, Minister for the Environment

Water Reform: Objectives and limits – location-based discharge allowances

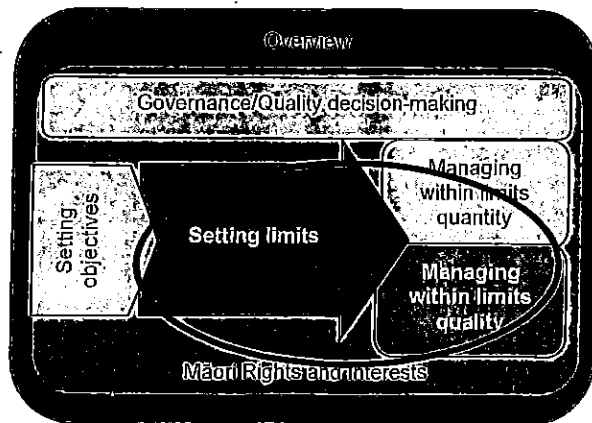
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Action Sought:	Nil- note only	Response/Signature Needed by:	N/A

Water Reform Directorate Contacts

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<i>Withheld under section 9(2)(a)</i>				
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Executive Summary

- You requested information about allowing different contaminant loads at different locations within a catchment.
- This briefing note provides information about identifying and quantifying contaminant loads from diffuse sources in a catchment, and potential implications of location-based discharge allowances (or allocations) and managing within water quality limits at a range of scales.
- In many cases, large amounts of contaminants are generated or attenuated within relatively small areas. Setting location-based discharge allowances for all sources in a catchment could manage the worst areas while enabling continued activities in other areas. It can also guide land users to prioritise mitigation efforts to efficiently manage their discharge allowance and achieve environmental and economic benefits with the greatest 'bang for buck'.
- There are challenges to using this concept in a planning and regulatory framework. All contaminant sources need to be identified and quantified, which relies on complex modelling that could reduce transparency of decisions and process to stakeholders. Detailed data and field assessments are required to accurately model contaminant loads. Location-based allowances may transfer liabilities and opportunities inequitably to land users within a catchment.



5. Public feedback on the discussion document will help understand the views of the public, industry and councils on approaches for setting and managing within water quality limits.

Situation Analysis

6. This briefing note provides information about identifying and quantifying contaminant loads from diffuse sources in a catchment, and potential implications for distributing discharge allowances (or allocations) based on location. While this briefing focuses on diffuse sources, point sources also need to be accounted for in identifying and quantifying catchment contaminant loads and considering discharge allowances for a catchment.
7. The National Objectives Framework Reference Group recommends a cascade of decisions for freshwater quality management, each with greater levels of specificity and rules; objectives, limits and managing within a limit (an example of this approach is included as Appendix 1).
8. Objectives describe the desired state of a management unit or sub-unit and the level of water quality attributes required to deliver that objective. Management units may be multiple or single catchments, sub-catchment or zones that are defined for water management purposes. Management units should reflect community and iwi interests as well as biophysical realities (eg, upper and lower Manawatu River, Canterbury water management zones).
9. Limits represent the maximum total amount of a contaminant that is discharged in a catchment and meet the specified objective. Limits are catchment specific, and reflect characteristics such as catchment size and river flow. Several limits may be set in a catchment at junctions of major tributaries.
10. Within a limit, discharges of the contaminant can be managed using rules or resource consent conditions, such as discharge allowances (or allocations). Land users have options on how to manage their property discharges to stay within their allowance.

Advice

11. In many cases, large amounts of contaminants come from relatively small areas, known as critical source areas (CSAs). These are areas where contaminants accumulate and they can easily get to rivers, lakes or groundwater. In contrast, some areas may attenuate greater amounts of contaminants through their flow path (eg, groundwater or wetlands).
12. This concept presents opportunities for regional councils to vary contaminant allowances by location at the catchment scale, and to inform good management practice for land users at the property scale.
13. CSAs guide catchment planners to identify the highest contaminant load areas and manage the worst areas while enabling continued activities in other areas. This efficiently promotes the achievement of both environmental and economic benefits at the catchment scale. For example in Lake Rerewhakaaitu, a phosphate sensitive lake in the Rotorua District, it has been found that sediment detention dams in a small number of sites would be very effective at reducing phosphate inflows to the lake.
14. Effective use of catchment discharge allowances requires that all contaminant sources are identified and quantified, including both point and diffuse sources. Identifying and quantifying contaminant loads from CSAs is difficult and relies on complex models with detailed data requirements. Stakeholders may have concerns about clarity and

transparency of decision making when using complex and uncertain modelling to identify CSAs for setting allowances.

15. CSA research has shown that modelling to assess CSAs within a catchment needs to consider slope, soil types (eg, erodible, shallow or fast draining soils) water flow paths (eg, gullies, drains, culverts), size and frequency of storms, intensive land use and opportunities for mitigation. Current national and regional scale data is too coarse to accurately quantify CSA contaminant loads at large scales. While it is resource intensive, supporting modelling with field evaluation and measurement may help to reduce model uncertainty and assuage stakeholders' concerns.
16. Equity issues may also need to be addressed if setting or managing to differing allowances based on CSAs. Location-based allowances could constrain and transfer liabilities to particular land users within a catchment, while enabling others to continue or expand activities. For example, the Lake Rerewhakaaitu sediment detention dams collect and impound phosphate rich sediment from a whole catchment, but impose costs on the land user for installation and periodic loss of pasture behind the dam.
17. CSAs can also be used at the property scale to enable land users to prioritise mitigation efforts and efficiently manage a property discharge allowance for the greatest 'bang for buck'. CSAs could inform users about where to locate and how to manage effluent disposal land, water troughs, feed pads and raceways. The small scale of properties has enabled researchers to successfully model CSAs for farms and small catchments by using farm scale data as model inputs.
18. The water reform discussion document invites feedback to inform officials development of policy options and understanding of implications of:
 - methods and tools to identify, account for and manage all sources of contaminants
 - the use of models to guide decision making and in the regulatory framework
 - approaches to developing good practice management toolkits.
19. Such feedback will help officials assess how the CSA concept may fit within measures for setting and managing within water quality limits. This will inform advice when Ministers consider decisions for implementing a water reform strategy in May 2013.

Risks and Mitigations

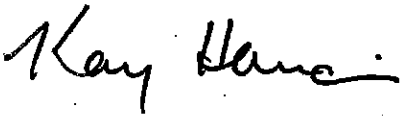
20. The scope of this briefing note is limited to information about the science for identifying and quantifying diffuse contaminant loads in a catchment, and potential implications for distributing discharge allowances (or allocations) based on location. This does not consider other options for distributing allowances (eg, equal allowances, grandparenting) or analyse the relative costs and benefits of CSAs with other options.
21. This briefing does not provide any advice on preferred options or require Ministerial decisions, so there are no significant risks associated with this briefing.

Recommended Action

We recommend that you:

- a) Note the contents of this briefing.
- b) Refer this briefing note to Hon Bill English, Hon Steven Joyce and Hon Kate Wilkinson for their information.

Yes / No



Kay Harrison

Director, Water Reform

Date 22/1/13

Hon David Carter

Minister for Primary Industries

Date

Hon Amy Adams

Minister for the Environment

Date

Minister's feedback on quality of briefing note:	1	2	3	4	5
1 = Was not satisfactory	2 = Fell short of my expectations in some respects		3 = Met my expectations		
4 = Met and sometimes exceeded my expectations	5 = Greatly exceeded my expectations				