

Understanding Animal Effluent

Freshwater Consultation Document

June 2024



Image: Agfirst

The purpose of this document is to begin discussions about some of the proposed high-level changes to the regional rules for animal effluent in Taranaki. Taranaki Regional Council (the Council) will use your feedback to prepare targets, limits and actions to manage and protect freshwater.

This fact sheet is one of a suite of documents (listed below) that explore the specific water quality challenges facing Taranaki. They include analysis of the current state of play for each issue in the context of national standards as well as examining trends. They also discuss potential actions and responses to address the identified issues.

- Understanding Water Quantity and Water Allocation
- Understanding *E. coli*
- Understanding Sediment
- Understanding Nutrients
- Understanding Earthworks and Land Disturbance
- Understanding Stormwater and Wastewater Discharges
- Understanding How Farm Practices can help Water Quality
- Understanding Animal Effluent
- Understanding the Taranaki Economy

Throughout these documents we pose specific questions that we would like your feedback on. Look for the question mark to guide your responses.

What we have heard so far

The information and options in this document reflect previous conversations with the community where we heard not only what people value about freshwater, but also what outcomes they want to see. The results of those conversations can be found on our website: <https://haveyoursay.trc.govt.nz/>.

Working with iwi

Through the development of the proposed Land and Freshwater Plan, work has been ongoing with Ngā iwi o Taranaki Pou Taiao to understand and develop our knowledge of tangata whenua freshwater values. In developing these fact sheets, we have had regard to the information shared and discussed with us, and this is reflected in the management options presented. We will continue work with tangata whenua to refine approaches as development of the proposed Plan continues.

We want to hear from you

Have your say via our online survey at <https://trc.govt.nz/helpshapetherules> or by getting along to one of 16 community drop-in sessions around the region. Meeting dates and locations are available online.

You can also respond in writing to the Council at 47 Cloten Road, Stratford or email policy@trc.govt.nz.



This phase of community consultation begins on Monday, 10 June and ends on Friday, 2 August.

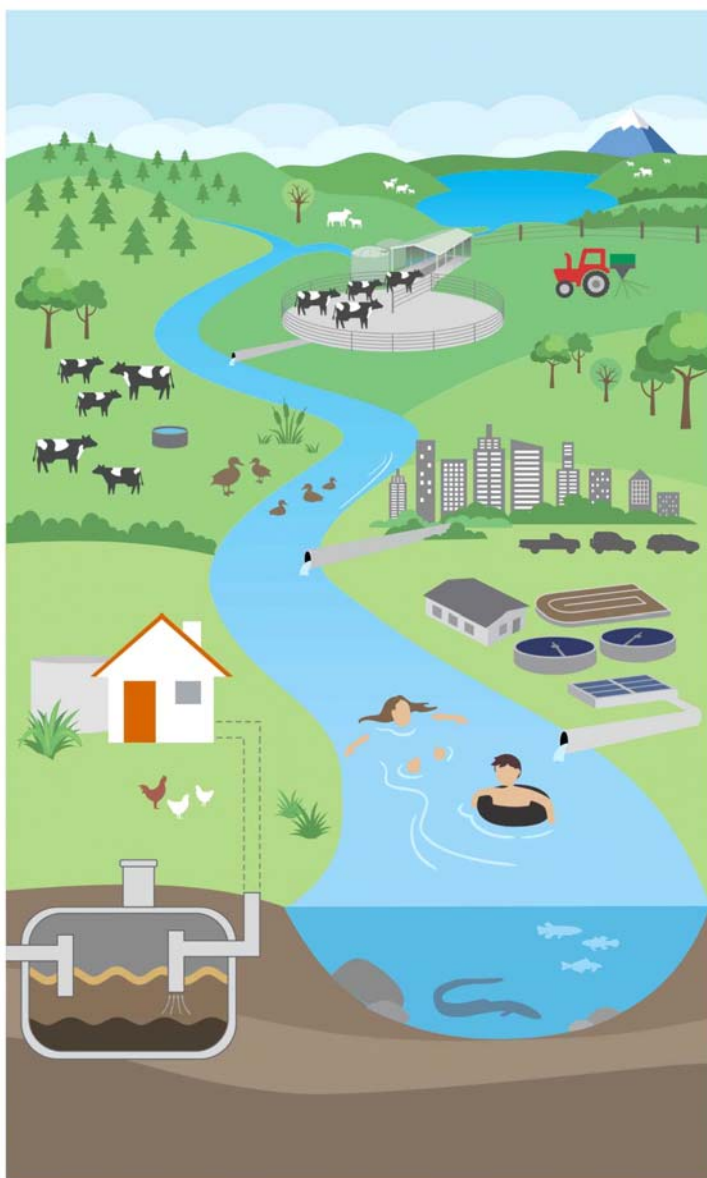
There will be additional opportunities to engage on the proposed Plan as we move toward Plan notification in mid-2025. See the timeline in the next steps section for further details.

Want to know more?

This fact sheet is informed by the Council's scientific investigations into environmental issues affecting the region's freshwater including sedimentation, *E. coli*, nutrients, effluent and water allocation. The technical memorandums are available on our website at <https://trc.govt.nz/helpshapetherules/>.

Sources of *E. coli*

*Animal effluent is one of several sources of *E. coli* in our waterways. This fact sheet deals specifically with animal effluent, and other sources of *E. coli* contamination are discussed in other fact sheets in this series including the Understanding Stormwater and Wastewater Discharges and Understanding Nutrients factsheets.*



E. coli



Agricultural

Runoff is a diffuse discharge. Water travelling over land washes *E. coli* into rivers and streams. Cumulatively, farm dairy effluent directed to freshwater is the largest point source of *E. coli*.



Wastewater

Treated wastewater from sewage treatment plants is another example of a point source discharge.



Storm water infrastructure directs contaminants from urban environments into freshwater.



Domestic wastewater infrastructure can be a source of *E. coli* to freshwater if not installed or maintained correctly.



Wildlife

Such as birds, possums and wild goats.

Read our
*Understanding *E. coli**
fact sheet for more
information about *E.*
coli including proposed
targets.



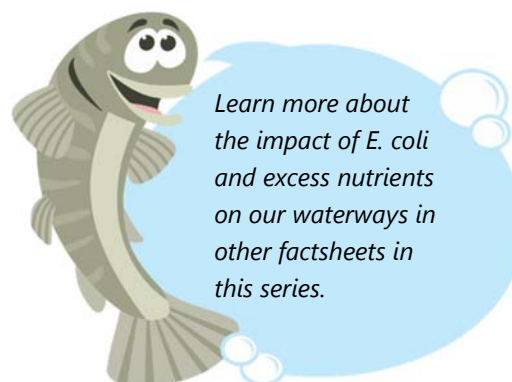
What is effluent?

Animal effluent is collected from areas where animals are contained. Some areas, such as dairy sheds, are washed down to meet health and hygiene requirements, increasing the amount of effluent collected. As well as stockholding areas, effluent can be collected from laneways and underpasses used for stock movement. Collected effluent is usually stored in an effluent pond then applied to pasture as a form of fertiliser or, less often, discharged directly to waterways.

Most animal effluent in Taranaki comes from dairy farms however other types of farms also produce effluent (including piggeries). On dairy farms, collected effluent makes up about 6-10% of the total effluent produced on farm, with the remainder deposited directly to paddocks during grazing (Bolan, N S., Laurenson, S, Luo, J, and Sukias, J. (2009)). Taranaki has the fourth largest dairy herd in the country, meaning there is a large amount of effluent to be managed.

Why do we manage effluent?

Animal effluent contains faecal bacteria and nutrients (nitrogen, phosphorus and potassium) which can degrade water quality. *Escherichia coli* (*E. coli*) is bacteria commonly measured to indicate whether water is likely to be carrying pathogens that can make us sick.

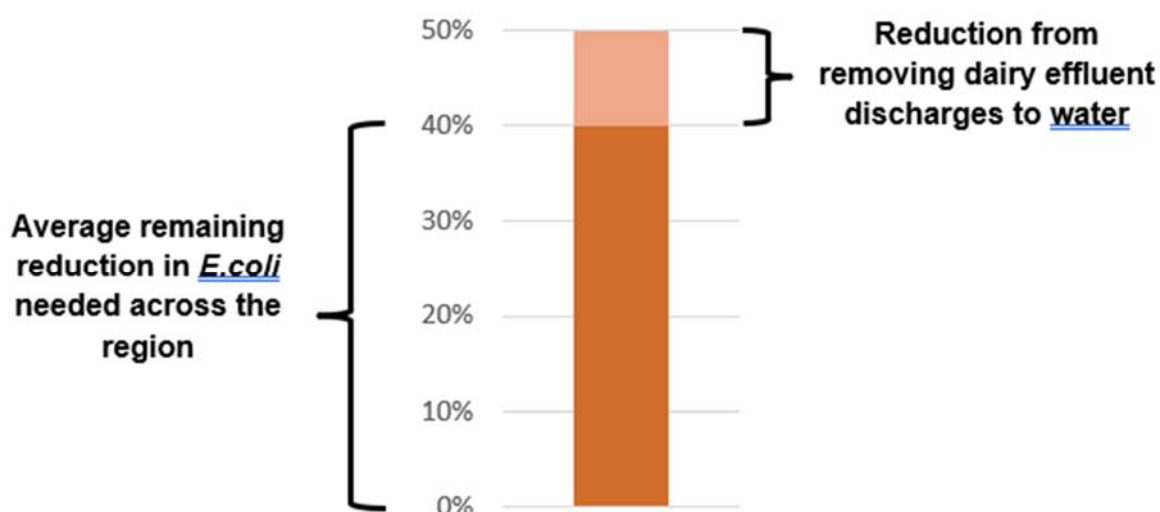


*Learn more about the impact of *E. coli* and excess nutrients on our waterways in other factsheets in this series.*

Freshwater with high levels of *E. coli* presents a higher risk to people, particularly during recreational activities such as swimming.

Too many nutrients in water causes excessive growth of weeds, slime and algae, which affects the number and health of aquatic insects, fish and birds. Under certain conditions, elevated nutrients can result in toxic algae blooms that can be harmful to humans and fatal for dogs.

For tangata whenua, the discharge of animal effluent to water is culturally offensive, diminishing the mauri (life force or vital essence) of the water and affecting the ability of tangata whenua to undertake customary practices such as mahinga kai. (Mahinga kai generally refers to freshwater species that have traditionally been used as food, tools or other resources. It also refers to the places where those species are found and to the act of catching them.)





Managing animal effluent

When applied to land, animal effluent is a valuable fertiliser source. Improving our management of effluent can therefore have financial as well as environmental benefits.

Practices have changed a lot over the last 20 years and Taranaki farmers have adapted their systems in response to industry and regulatory requirements.

A significant change has been the shift away from discharging collected effluent from treatment ponds directly to water. Most farmers now store effluent in ponds before applying it to land when conditions are suitable.

When applied to land, effluent filters through the soil, allowing plants to use some of the nutrients as fertiliser. If managed appropriately, applying effluent to land can reduce the amount of contaminants getting into waterbodies.

Although there has been steady improvement, effluent management in Taranaki has lagged behind other regions. The Current Freshwater Plan (Current Plan) still allows discharges of effluent to water. This has been phased out in most other regions, including Waikato, Manawatū-Whanganui, Canterbury, Southland and Otago, including areas with high rainfall.



An average 50% reduction in E. coli loads across Taranaki is required to meet our draft environmental outcomes for water quality.

Discharges directly to water is not good practice and is often prosecuted in other parts of the country. In this respect, Taranaki is an outlier.



Of the 357 resource consents authorising animal effluent discharges to water or to land and water, only six are for discharges of effluent from animals that are not dairy cows.

Phasing out existing discharges of animal effluent to water

The number of effluent discharges to land has been steadily increasing over the past decade and reflects the investments farmers have made in upgrading infrastructure and improving on-farm practices. Based on resource consent data, as of May 2024 approximately 77% of animal effluent discharges were already solely to land. The remaining resource consents authorise either only a discharge to water or a combination of discharges to land and to water.

In response to the issues across the region with nutrients and *E. coli* in particular, and the cultural offense caused by animal effluent discharges direct to water, we propose to prohibit all new discharges of effluent directly to water after the Proposed Land and Freshwater Plan (Proposed Plan) is introduced.

We do not expect this to have much impact on farmers because new systems are typically

designed for discharging to land. This is consistent with the Council's current approach but ensures there is clear direction for farmers and a better regulatory backstop to support the shift to land application.

As outlined in the *E. coli* fact sheet, an average 50% reduction in *E. coli* loads across the region is required to meet the draft environmental outcomes for water quality. Phasing out all remaining dairy effluent discharges to water would achieve 10% of the reduction required and bring Taranaki practice into line with other dairying regions, as well as with industry expectations.

The science modelling focused on dairy effluent discharges because these are the most common. Of the 357 resource consents authorising animal effluent discharges to water or to land and water, only six are for discharges of effluent from animals that are not dairy cows.



As of May 2024 approximately 77% of animal effluent discharges were already solely to land. The remaining resource consents allow either a discharge to water only or a combination of discharges to land and to water.

All resource consents for discharges to water expire before 2033. If the Proposed Plan is introduced in 2025, this would not allow much time for resource consent holders to make the required changes.

For some farms, the costs of completely moving away from discharging effluent to water will be significant. It is important that resource consent

holders have certainty about expected standards and an appropriate transition time for making any required changes.

For these reasons, we are considering several options to transition these remaining discharges to land application. The table below sets out the proposed options. Tell us what you think. What is your preference?

Option	Description	Phase out ends	Flexibility	Fairness
No transition	All discharges to water must stop when their current resource consent expires. This would give very little time for some resource consent holders to transition but more time for others.	2033	Low	Low
Staged transition	All resource consents expiring before a certain date (for example 2028) can be replaced once, with a short duration resource consent. This would give those with early expiry dates similar transition times to those with later expiry dates and would likely speed up the overall phase out.	2033	Medium	High
Individual transition	All resource consents can be replaced once with a duration based on the individual circumstances of the farm and the upgrades required to shift to a land discharge up to a maximum of 10 years. This would allow for a longer transition period for all current resource consent holders but also delay the improvements to water quality.	2043	High	Medium

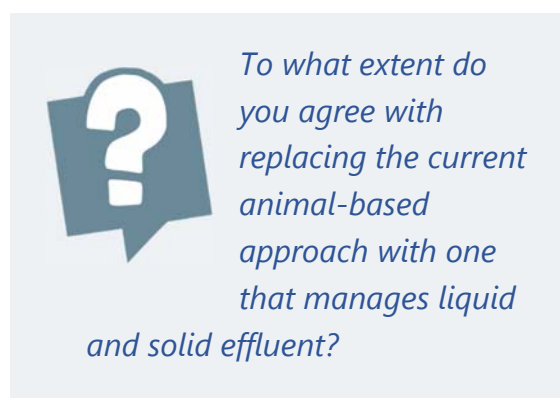


What option do you prefer for phasing out direct discharges of effluent to water?

Risk-based approach

Types of effluent

Our Current Plan has different rules for different types of effluent (dairy, poultry and piggery). However, we know that the biggest risk to water quality is whether effluent is liquid or solid. Liquid effluent poses a higher risk to the environment because it is more easily transported to water, particularly through run-off. In comparison, solid effluent will not run off during application and there is a lower risk of run-off if rain occurs after application. We propose to remove the distinction between animal types and instead have different rules for liquid and solid effluent.



Less regulation for small activities

Our Current Plan requires resource consent for all animal effluent discharges, regardless of how much is discharged. Some effluent systems are very small, such as a sump for a feed pad. We propose to include some permitted activities for small activities so that they no longer need resource consent:

- Discharging up to 35 m³ of liquid animal effluent to land each year.
- Discharging solid effluent to land.

There would be conditions on these rules, such as minimum setbacks from waterbodies and preventing ponding of effluent on the land.



Improving outcomes with industry best practice

It is important that effluent systems are designed, maintained and operated properly to reduce the risk of discharges of effluent that can harm water quality. The Current Plan contains good management practices for effluent, however industry guidance has superseded these. We want to ensure farmers can rely on evolving best practice guidelines and that the Proposed Plan supports this. We are focusing on two things in particular: the overall management of effluent systems and the sizing of effluent ponds.

Overall management of effluent systems

Engineering NZ's Practice Notes 21 (Farm Dairy Effluent Ponds) and 27 (Dairy Farm Infrastructure) outline best practice methods for the design, construction and operation of effluent systems. It is not practical to apply these standards retrospectively to systems constructed before the standards existed. For that reason, we propose to require any systems designed and constructed after the Proposed Plan is introduced to be consistent with Practice Notes 21 and 27, but not existing systems.

For existing systems, we propose that:

1. Systems are visually inspected by a suitably qualified and experienced person on a regular basis to confirm they have no visible defects, holes or leaks.
2. All resource consent holders prepare and implement a management plan for their

systems that includes how ongoing maintenance and operation will occur as well as contingency measures and procedures in the case of equipment failure or adverse weather events. This could form part of a Freshwater Farm Plan.

Sizing effluent ponds

One of the main parts of an effluent system is the pond. The size of the pond determines how long effluent can be stored for, influencing how often and when effluent is discharged to land. Best practice in sizing effluent ponds is to use the Dairy Effluent Storage Calculator (DESC).

The calculator is based on a scientific model that applies climate and soil information to determine how many days are suitable for effluent application to land on individual farms. It helps farmers understand how much storage they need on their farm, based on a range of different

factors such as herd size, stormwater management and discharge practices.

For existing ponds, the calculator allows farmers to explore different mitigations to fit within their existing storage capacity, potentially preventing the need to build more storage. For example, using low depth irrigation so effluent can be applied to land more often or implementing water conservation techniques with yard washing to produce less effluent.

For new ponds, the calculator allows farmers to optimise their storage requirements to best suit their management and workload.

We propose to require all ponds, new and existing, to be sized in accordance with the 90th percentile as calculated by the calculator. This would be assessed when a new or replacement resource consent is processed.



- *Do you agree with the proposed approach of applying Engineering NZ's Practice Notes 21 and 27 to new effluent management systems?*
- *Do you agree with the approach of requiring visual inspections and management plans for existing effluent systems?*
- *What are your concerns about applying DESC to size new and existing systems? Are there alternatives we should consider?*

Next steps

Conversations with the community will help us set targets for various measures of water quality and quantity, which over time will help improve freshwater quality in the region.

Feedback you provide through this process ultimately helps shape the rules that the Council will put in place to protect and manage freshwater. The rules will appear in the Proposed Plan that will replace the Current Plan, which is more than 20 years old.

Next steps for the Council are to:

- Continue to develop the science on sediment, nutrients, *E. coli*, effluent and a range of other measures of water health as well as the potential options to manage these challenges
- Use your feedback on proposed targets to help shape rules that apply to animal effluent in the Proposed Plan.
- Work toward further community engagement on refined policy options and additional science.

We want to hear from you



There are many ways that you can share your views with us:

Join us at one of 16 **community meetings** around the region. Meeting dates and locations are available online.

You can also **write to us**:
Policy Manager, Freshwater

Consultation, Taranaki Regional Council,
47 Cloten Road, Stratford.

Email us at policy@trc.govt.nz

Take our **online survey** at
<https://trc.govt.nz/helpshapetherules>

Timeline



Jan 2021–Sept 2022

Understanding the story so far
Collating the story of what's happening with Taranaki freshwater to inform conversation with the community, special interest groups and iwi.



Apr 2021–Dec 2022

Vision, values and FMUs
A chance for people across Taranaki to give their feedback on the region's draft FMUs, the visions that will establish the long-term goals for those units and the values which apply to them.



2023

Te Mana o te Wai
Exploring how Te Mana o te Wai can be applied in Taranaki and how our planning framework can improve the way that tangata whenua and communities are involved in freshwater management decisions.



Sept–Oct 2023

Freshwater outcomes and change drivers
Closing the loop on what we learned with our engagement so far and what it will mean for how we go forward with improving the quality of our water, the timelines and where the pinch points might be.



June–July 2024

Setting targets
Exploring potential targets for key areas linked to improving water quality.



Nov–Dec 2024

Limits
Exploring the potential rules that may be introduced through the proposed Land and Freshwater Plan to drive the change to achieve the targets we set for freshwater.



Feb–April 2025

Feedback on Draft Plan
Iwi, special interest groups and stakeholder engagement and feedback on the draft Land and Freshwater Plan.



Mid 2025

Plans notification
The Land and Freshwater Plan will be publicly notified prior to a formal submissions and hearing process.



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