

## Appendix 3.29.2 Background Paper: Livestock Exclusion from Water Bodies

This paper outlines the proposed Unitary Plan policy approach for the exclusion of livestock from water bodies.

### Background

The degradation of stream water quality has been linked to livestock grazing in many parts of the world<sup>1</sup>. Poor livestock management impacts on rivers and riparian margins in a number of ways including the removal and damage of existing riparian vegetation, the breakdown of the riparian soils by trampling<sup>2</sup>, the loss of stream bank stability (which can induce stream channel erosion)<sup>3</sup>, the mobilisation of stream bed sediments, and the direct input of dung and urine. These effects can then culminate in the degradation of water quality and ecosystem health.

This issue has been highlighted in the March 2012 report by the Parliamentary Commissioner for the environment titled *Water quality in New Zealand: Understanding the Science*. The Commissioner observed:

“Fencing off streams and bridging crossings to keep stock out of water is the first step in preventing diffuse pollution on farms. These actions prevent stock from directly urinating and defecating into water, reducing inputs of pathogens and nutrients. Fencing and bridging also prevent stock from breaking down banks, thus reducing the sediment entering the water.”<sup>4</sup>

### Current Issues

In Auckland there are around 10500km permanent streams and around 2800 km of intermittent streams in rural pastoral land. It is estimated that only 25% of the permanent streams have been effectively fenced on both sides to exclude livestock.

In Auckland forested areas generally have better stream water quality than rural areas, which in turn, are generally better than urban areas. Monitoring shows that microbial contamination is high with 25 out of 27 sites exceeding recreational guidelines and 11 out of 13 sites exceeding stock drinking guidelines. Sediment and turbidity is also high.

Stream water flows to the coast and the coastal environment is highly valued by Aucklanders for many reasons. However, studies<sup>5</sup> in Auckland estuaries show that sediment accumulation rates (SAR) have increased significantly during the last 150 years or so due to human activities and it is likely that sediment infilling of Auckland estuaries will continue at several mm per year in the foreseeable future.<sup>6</sup> As an example of this, Mahurangi Harbour studies<sup>7</sup> show that the major sources of sediment in the upper harbour are pasture, native forest and exotic pine forest. The majority of sediment entering the Mahurangi Harbour was derived from pastoral land use (10-30%). Furthermore, a third of the sediment sources are entirely natural, an eighth are created by human modifications to channel beds or banks, and over half are induced or exacerbated by the unrestricted access of farm livestock to streams banks and beds<sup>8</sup>.

Auckland Council must give effect to the NZCPS 2010, which requires stock exclusion from the coastal marine area where water quality has deteriorated such that it is having a significant adverse

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<sup>1</sup> McKergow, et al, 2003, p.253

<sup>2</sup> Davis-Colley & Parkyn, 2001

<sup>3</sup> Magner, et al, 2008

<sup>4</sup> Page 54

<sup>5</sup> See Swales et al. 2002a; TP221

<sup>6</sup> Carbines, M., 2011, Auckland Council internal correspondence

<sup>7</sup> Gibbs, 2006

<sup>8</sup> ARC, 2004

effect (Policy 21). Various objectives and policies of the NPS: FWM and the Auckland Plan also require the causes of water quality degradation to be addressed.

Any policy response that excludes livestock from water bodies and coastal marine areas will have beneficial effects on water quality. Specifically, studies show that reducing livestock pressure on the riparian zone, by approaches ranging from permanent fencing through to 'incentives' for stock to seek shade and water off-stream, has the potential to appreciably reduce a range of impacts on streams.<sup>9</sup> However, this must be tempered by the fact that stock exclusion requirements affect private land and they come at what can be a significant cost to landowners.

### Options Considered

Five Unitary Plan options have been considered:

#### **1 Roll over of existing provisions**

No regional land use rules (or discharge or stream bed disturbance related rules) controlling livestock access to streams and retention of the existing prohibition on grazing stock in CPA 1 areas.<sup>10</sup> Education and advocacy approaches to landowners would continue. Ad-hoc legacy district plan requirements for stream fencing also retained.

#### **2 Using financial incentives only – no regulation**

Council grants (financial incentives) to assist farmers with fencing and planting riparian areas are an important management tool used by many councils nationwide. However, this method alone is unlikely to achieve a significant improvement in stream and coastal water quality. Stock exclusion will only occur if landowners volunteer it. It is unlikely that entire reaches of streams (or both sides of streams) will be excluded from stock which significantly denigrates the benefits of any exclusion achieved on individual properties. This option would not achieve the desired level of stock exclusion over an acceptable period of time. For example, if \$500,000/year of Council grant funds were allocated to incentivise 3-wire electric fencing at a subsidy rate of 30% of the capital cost, only 210 km of stream length would be fenced each year.

#### **3 Codifying Industry Best Practice (Clean Streams Accord)**

The Dairying and Clean Streams Accord is an agreement between the Ministry of Primary Industry (formerly Ministries of Agriculture and Forestry) and for the Ministry for the Environment, Fonterra Co-operative Group and Local Government New Zealand (on behalf of regional councils). One of the Accord's targets is to have dairy cattle excluded from 90 per cent of permanently flowing streams by 2012.

Option 3 has separate permitted activity land use rules for "intensive" pastoral farming (i.e. 18 or greater stock units per hectare) and "extensive" pastoral farming (i.e. less than 18 stock units per hectare).

For intensive farms (such as dairy farms), the rules would require the exclusion of livestock (cattle, pigs, deer) from permanent streams (and the CMA and wetlands) by the use of fences, vegetation barriers or natural barriers (e.g. high banks). The fences would not be set back from the top of the stream bank and no riparian planting would be required. Livestock exclusion would only be required from permanently flowing streams and a period of 5 years would be given to comply. Auckland Council grants would be available to assist with fencing in priority areas for the first 5 years.

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<sup>9</sup> Davies-Colley & Parkyn 2001

<sup>10</sup> Contained in the legacy Regional Plan: Coastal

For extensive farms, the rules would be “effects based” such that fencing would only be triggered where the effects of livestock access to a water body were clearly more than minor. In reality this would mean that fencing only occurred in response to public complaints (or Council monitoring observations) about poor water quality in particular streams. Again, Auckland Council grants would be available to assist with fencing in priority areas.

This option would have low cost implications for dairy farmers since they already need to comply with the “Clean Streams Accord”, e.g. they should have already fenced a large proportion of permanent streams on their farms and installed alternative water supplies and cattle crossings. Cost implications for intensive dry stock farmers would be greater, depending whether an alternative water supply is present and how much fencing currently exists.

#### **4 Codifying Industry Best Practice (Clean Streams Accord) “Plus”**

This option would have the same basic structure (intensive farming and extensive farming permitted activity rules supported by Council funding grants) as Option 3, except that fencing would be required for permanently flowing and intermittently flowing streams.

A staged approach would be adopted with livestock to be excluded from permanently flowing streams within 5 years of the rule being notified, and exclusion from intermittently flowing streams occurring over the following 5 years. The total timeframe for compliance would therefore be 10 years.

This option would require dairy farmers to additionally fence the intermittent portion of streams on their farms. Five year compliance timeframes are proposed in recognition of likely costs, for example, 1000m of stream fencing would cost \$14,000 (both banks) using a 3-wire electric fence. Cost implications for intensive dry stock farmers would be greater, depending whether an alternative water supply is present and how much fencing currently exists.

#### **5 A comprehensive stock exclusion rule**

This option would introduce a region-wide permitted activity rule requiring stock exclusion to be achieved on all permanent and intermittently flowing streams (but not ephemeral streams) and the CMA over a reasonably short period of time – say 5 years. The stock exclusion would be targeted to problematic stock that are known to cause stream bank erosion or to wallow in streams (not sheep for example) and it could be achievable by natural barriers, fencing (with the type of fence to be at the discretion of the landowner) or by the dense planting of riparian margins. Council grants would be available to assist with fencing in priority areas.

Any required fencing would be located a minimum of 3 metres from the top of the stream bank and the enclosed area would be planted with native riparian species. Actual total costs to individual farmers would be quite high.

#### Other Considerations

The Auckland Plan requires:

- Manage land to support the values of waterbodies by protecting them where they are high and reviving them where they are degraded.” (Directive 7.10)
- Protect coastal areas, particularly those with high values – including special natural character, significant marine habitats and recreational importance – from the impacts of use and development, and enhance degraded areas. (Directive 7.12)

The Auckland Council Rural Advisory Panel (RAP) supports Option 4. This option (amongst others) was presented at the Panel's 20 April 2012 meeting and was endorsed at their subsequent meeting of 25 May 2012.

### Analysis of Options

A livestock exclusion policy response is required that implements the Auckland Plan directives and moves Auckland beyond the status quo (Clean Streams Accord for dairy farms and voluntary riparian fencing on all other farms) so that existing water quality degradation in rural areas and estuarine waters is addressed. However, the significant costs of livestock fencing, riparian planting and taking farmland out of production for riparian buffer strips means that a balanced response is required that incorporates a reasonable timeframe for compliance.

Option 4 best meets those requirements.

### Decision Sought

Confirmation that the recommended approach is appropriate, namely:

Option 4 Codifying Industry Best Practice (Clean Streams Accord) "Plus":

- Fence permanent streams in years 1 to 5
- Fence intermittent streams in years 6 to 10

### Next Steps

Assuming Option 4 is confirmed, the next steps are for Auckland Council staff to continue consultation (including with the Rural Advisory Panel) to finalise wording for the necessary permitted activity rules for inclusion in the Unitary Plan. This will also involve liaison with consent and compliance staff (and possible legal advice) to ensure that the developed provisions are practical and enforceable.

### References

The footnoted references are available upon request.