Our Group

• Made up of 11 farm owners/family farms running deer and mixed stock farms in the Woodbury Area.
• Knocklyn Holdings is one of the farms within the Group.
• Danette McKeown; Farmer and Environmental Geologist (MSc) – NES-CS, DINZ Environment Stewardship Reference Group, Australasian Land and Groundwater Association, Woodbury BoT.
• Woodbury Deer Industry Environment Group; formed 2 years ago, DINZ facilitator Phil McKenzie.
  • Peer review of environmental practices, successes, learning opportunities, innovations
  • Winter grazing field day (ECan LMO)
  • Bat monitoring
  • Hosting FEP Auditors Training Workshop in association with DINZ and ECan.
  • Previously hosted public field days, ECan and Forest and Bird review of riparian margins and effectiveness
  • Barkers Creek Catchment Group
Extensive Hill Country

Intensive Lowland Deer Farms
Riparian Fencing and Planting
Steps; 2006 - 2020

Blokes Gully – Home Block (Blue):
- $7212 worth of materials (north side fence only, ~2000 plants and tree guards)
- $1800 follow up costs – replacement plantings, releasing trees, weed control; gorse, sycamore, blackberry, silver poplar, elderflower
- $Time?
- 1km done ~3km to go
Riparian Fencing and Planting
Sediment Trap and Riparian Fencing
<table>
<thead>
<tr>
<th>Date</th>
<th>Upstream</th>
<th>Water</th>
<th>Rock Test</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 2014</td>
<td></td>
<td></td>
<td></td>
<td>• Waterway ephemeral but often flowing during autumn months when stags are set-stocked in paddocks for the roar</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Waterway constantly being widened by deer wallowing</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• No vegetation/shade in/over waterway</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Waterway makes shifting deer through and out of paddock difficult</td>
</tr>
<tr>
<td>1 Oct 2018</td>
<td></td>
<td></td>
<td></td>
<td>• Waterway fenced off during Winter 2018 with new lane way system and subdivision to improve utilisation efficiencies</td>
</tr>
<tr>
<td>Weather, Recently wet</td>
<td></td>
<td></td>
<td></td>
<td>• Recently sprayed with glyphosate</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Springs running, water clear</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Rock test – two mayfly larvae</td>
</tr>
<tr>
<td>Feb 2020</td>
<td></td>
<td></td>
<td></td>
<td>• Water flowing slowly, most of waterway full of vegetation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Weeds growing in between native but not competing too much, mainly clovers and small broadleaf weeds</td>
</tr>
</tbody>
</table>
Outline of Our PC7 Submission

• High Risk Runoff Phosphorus Zone (HRRPZ) requirements for consent
• 20ha limit/risk trigger
• ‘Part of Property’ in HRRPZ
• Offal pits
• Clarification around springs and drains
• Compliance cost vs environmental actions
• Unintended consequences; riparian maintenance, intensification, consenting
HRRPZ - 20ha limit?

Oppose 14.5.17; The use of land for a farming activity on a property greater than 20 hectares in area is a permitted activity provided the following conditions are met: “For any property greater than 20 hectares in area that has part of the property located within the High Runoff Risk Phosphorus Zone, the area used for winter grazing of cattle or deer does not exceed 20 hectares.”
HRRPZ - 20ha limit?

- HRRPZ based on soil type (Claremont silty loam over clay)
- David Kelly Study (Ecan Technical Report R14/88, March 2015) and OTOP Zone Committee Memo for PC5*
- Highest correlation of P loss comes from high P levels in soil (Massey 2020). High Risk Phosphorus or High Risk Sediment?
- On-farm P loss ranges from 0.3 – 1.1 kg P/ha/year. Management blocks range from 0.1 – 2 kg P/ha/year. Winter feed blocks <1 kg P/ha/year. Indicates low to moderate P loss. This is consistent with our farming practices...
- Overseer modelling of wallows and impact on P loss (not winter feed). Overseer mitigations and impact of wallows

* Noted that there is an “elevated risk of surface water body contamination from runoff from these high-risk farming activities, particularly those that do not breach the resource consent threshold”
HRRPZ - 20ha limit?

- We know that sediment loss is of higher risk in our area due to soil type. Needs recognition that ‘strategic grazing of winter fodder crops and management of critical source areas can reduce losses of sediment and phosphorus from winter grazing* by 80-90% (Orchiston et al. 2013)’*

- N risk currently managed by prescribed proportional threshold. Why not P?

- On farm examples; 20 ha farm 50%, Knocklyn 3%, Orari Gorge Station 0.4%

- Farmers manage soil erosion regardless of whether winter feed 20 ha or 100 ha. GMP applied regardless of area.

- No recognition that deer and cattle management practices on winter feed are often very different and P loss on deer farms can be less than for dairy**

- Sediment loss/entrained P can be and is mitigated.

- Optimum soil test P provides effective and value added mitigation compared to restricted grazing of crops***

* FEP Auditors Training Workshop, 2020 and OTOP memo

**“In general, dairying emits more P than deer farms, which in-turn lose more P than sheep and beef farms” (Envirolink.govt.nz., Online, nd.)

*** McDowell, 2010. The efficacy of strategies to mitigate the loss of phosphorus from pastoral land use in the catchment of Lake Rotorua
HRRPZ - 20ha limit


<table>
<thead>
<tr>
<th>Strategy</th>
<th>Effectiveness (%)</th>
<th>Cost (NZD $/kg P conserved)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimum soil test P</td>
<td>5-20†</td>
<td>highly cost-effective†</td>
</tr>
<tr>
<td>Low solubility P fertilizer</td>
<td>0-20</td>
<td>0-30</td>
</tr>
<tr>
<td>Stream fencing</td>
<td>10-30</td>
<td>5-65</td>
</tr>
<tr>
<td>Greater effluent pond storage</td>
<td>10-30</td>
<td>30</td>
</tr>
<tr>
<td>Low rate effluent application to land</td>
<td>10-30</td>
<td>45</td>
</tr>
<tr>
<td>Tile drain amendments</td>
<td>50</td>
<td>25-100</td>
</tr>
<tr>
<td>Restricted grazing of cropland</td>
<td>30-50</td>
<td>150-250</td>
</tr>
<tr>
<td>Alum to pasture</td>
<td>5-30</td>
<td>150-&gt;500</td>
</tr>
<tr>
<td>Alum to grazed cropland</td>
<td>30</td>
<td>160-260</td>
</tr>
<tr>
<td>Grass buffer strips</td>
<td>0-20</td>
<td>&gt;250</td>
</tr>
<tr>
<td>Sorbents in and near streams</td>
<td>20</td>
<td>350</td>
</tr>
<tr>
<td>Retention dams / water recycling ‡</td>
<td>10-60</td>
<td>&gt;500</td>
</tr>
<tr>
<td>Constructed wetlands ‡</td>
<td>-426-77</td>
<td>&gt;500</td>
</tr>
<tr>
<td>Natural seepage wetlands ‡</td>
<td>&lt;10%</td>
<td>&gt;500</td>
</tr>
</tbody>
</table>

† depends on existing soil test P concentration, but no cost if already in excess of optimum.

‡ upper bound only applicable to retention dams combined with water recycling

§ potential for wetlands to act as a source of P renders upper estimates for cost infinite.
HRRPZ - 20ha limit?

• "Regarding where the threshold should be set, while various submitters suggest preferred alternatives they do not include evidence supporting their submissions to show that these options would deliver the same environmental gains as 20 ha. We invite the submitters to elaborate on this in evidence exchange and at the hearing." ECan s42A.

• Environmental gains not defined by ECan? 20ha ineffective as unlikely to get the amendment, just the compliance.

• Mitigation of P loss is desired outcome for both parties. No consultation on this particular policy or rule?
Beet (Winter Feed for Deer)
Stags on Kale (Winter Feed)
Deer on Beet (Winter Feed)
Concern over wording in 14.5.17 “For any property greater than 20 hectares in area that has part of the property located within the High Runoff Risk Phosphorus Zone, the area used for winter grazing of cattle or deer does not exceed 20 hectares.”
HRRPZ – Part of Farm?

- Intended or mis-worded?
- Are paddocks in high risk zone or not? Rule should be based on risk not property titles. Un-necessarily capturing land that would not be at risk of sediment runoff or P loss
- On farm examples; Blair (Parkhurst), Peacock (Orari Gorge) and McKeown (Knocklyn) Families.
HRRPZ – What we are seeking

- Recognise HRRPZ but remove >20 ha winter feed area as requirement for consent
- Retain proportional winter feed rule for permitted activity.
- Recognition that environmental gains for sediment and P loss are happening and can be managed without ineffective amendments to restrict winter grazing rules
- Mitigations can be demonstrated through FEP; ECan acknowledge that in proposed PC7 policy; “farming activities [with] in the HRRPZ and which use more than x% of land for winter grazing of cattle or deer, to demonstrate through their FEP how active management of the loss of phosphorus, sediment and microbial contaminants to water will be achieved” (4.4.17)
Offal Pits

Oppose change of wording in 5.24 “at least 3 m of soil or sand between the point of discharge and the highest groundwater level”;

- Preferred reference to seasonal groundwater table
- Given poorly drained soils and following high or repeated rainfall events, groundwater table would be at the surface
- Composting offal piles would also not comply?
- All offal pits in our area would require consent?
Offal Pits – What we are seeking

- Retain ‘seasonal water table’ with reference to Offal Pits
Livestock Exclusion - Springs and Drains

• 14.4.15 “Intermittently flowing springs (Waipuna) and artificial watercourses with surface water in them”

• Springs and seepages occurring intermittently and/or ephemerally... can cover multiple areas with flow and location altering with hydrogeological conditions/appearing/disappearing with recharge (can cover whole paddocks for very short periods of time).
• Drains or grassy swales; designed to be grazed by stock. Puddles? Short term flow events?
• Recognition of extreme events/floods? Council keep flood records and could correlate with those.
Livestock Exclusion - Springs and Drains – What we are seeking

• Clarify springs and drains with regards to stock exclusion.

• Would like recognition of extreme events/floods. Council have flood records and occurrence zones, could correlate with those. Provision that floods would not be included (can be tied in with flood records/time frames)
Compliance vs Outcomes

- 4 year consent limit?
- Generally looking at ~$10 000 cost for consent if include first audit; includes certified Overseer nutrient budget (~$3-4k), consent application fee (> $2700), and audit costs (~$1500). Does not include farmer time or costs of consultant.
- What could you get for $10k? ~0.5 km of deer fencing - 4 seasons colony of dung beetles which have been shown to reduce sediment runoff in NZ soils by 49 - 97%, particularly on sloping land*.
- Consenting is not the solution, working with people and ‘doing it’ means more to us...Joint Venture for pro-active outcomes i.e. dung beetles and Greater Wellington Regional Council.
- For 10k, could get my first ever dishwasher with a bench high enough to put it under..

Really...
Collaboration rather than consenting

• Don’t spray out whole paddock to get a few pricks (thistles)
• Hope some of the people who have not been making efforts to improve environmental outcomes realise they need to take action now
• Counter-productive or disenfranchise responsible farmers
• Impact on farming families
• ‘Doing our bit’ – apparent dichotomy between Ecan LMO and ECan policy makers
• Unintended consequences with further compliance required
  • Waterway and riparian management (Group or Catchment Consent)
  • Intensification in order to provide income to pay for compliance
Summary

• Recognise HRRPZ - Remove 20 ha winter feed area trigger as requirement for consent - Retain current proportional winter feed rule
• Have the rules appropriate to the risk (the area of risk, not the property)
• Recognition that environmental gains for sediment and P loss are likely to be more effective and better value with management rather than amendments
• Mitigation of P loss is being undertaken, is demonstrated in FEP’s. Know we need to keep on improving but our industry bodies and peers are more efficient than compliance
• Retain ‘seasonal water table’ with reference to Offal pits
• Clarify springs and drains with regards to stock exclusion.
• Recognise extreme events with regards to stock exclusion rules.
• Proposals to show ‘positives’
Any Questions?

Thanks for your time and consideration