Progressing the Rules

Lake Rotorua Stakeholder Group

23 June 2015

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Methodology supporting the Nutrient Rules

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Context

- StAG process to reach this point
- Approach is based on a methodology with points of certainty
- Start with numbers and then proportional approach

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Land use	N yield	Original Area	Unmitigated N load	Mitigation	Incentives	Adj. N load	Attenuation	Non-mitigated Attenuated load	Mitigated and Attenuated N Load	N load
	(kg N ha y^{-1})	(ha)	(kg N y^{-1})	(%)		(kg N y^{-1})				(%)
Bush and Scrub	3.7	9416.3	34558	0		**34558**	**0**	**34558**	**34558**	5.8
Crop	65.5	215.1	14098	17	1732	**11674**	**28**	**10151**	**8405**	2.0
Cut and Carry	15.1	315.3	4752	17	584	**3935**	**28**	**3422**	**2833**	0.7
Forestry	2.8	8869.1	24922	0		**24922**	**0**	**24922**	**24922**	4.2
Fruit Crop	11.9	31.4	373	17	46	**309**	**28**	**269**	**223**	0.1
Gorse	38.0	705.0	26790	100		**0**	**28**	**19289**	**0**	0.0
House	65.0	490.3	31869	0		**31869**	**28**	**22945**	**22945**	5.4
Lake or waterway	6.7	8173.7	54764	0		**54764**	**40**	**32858**	**32858**	9.2
Non-productive	3.0	477.3	1432	0		**1432**	**0**	**1432**	**1432**	0.2
Pastoral (Dairy Support)	36.8	2514.9	92477	17	11360	**65214**	**28**	**66584**	**46954**	11.0
Pastoral (Dairy)	71.3	5014.3	357325	35	90114	**141057**	**28**	**257274**	**101561**	23.7
Pastoral (Dry Stock)	21.1	13654.2	288008	17	35379	**203100**	**28**	**207366**	**146232**	34.2
Urban	3.0	3709.7	11129	0		**11129**	**0**	**11129**	**11129**	1.9
Wetland	0.0	234.4	0	0		**0**	**0**	**0**	**0**	0.0
							0	**0**	**0**	
Geothermal			33500	70		**10050**	**0**	**33500**	**10050**	1.7
							0	**0**	**0**	
Wastewater (Septic tanks @ 100 pp)			365	0		**365**	**0**	**365**	**365**	0.1
Wastewater (LTS load-to-lake)			30000	0		**30000**	**0**	**30000**	**30000**	5.0
Unspecified engineering reductions						**-29760**	**0**	**0**	**-29760**	
Total	**344**	**53821**	**1006362**		**139215**	**594617**		**756063**	**444708**	105

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755 tonnes

- ROTAN 2011 – steady state
- Calibrated to groundwater, stream and lake monitoring
- Uses coefficients
- Robust model

N source	Area ha	load tN/y (ROTAN 2011)		
		current	reduction	target
pasture	21175	526	270	256
geothermal	59	30	30	0
urban incl. sewage	3961	93	20	73
forest	21182	75	0	75
rain on lake	8079	30	0	30
total	**54456**	**755**	**320**	**435**

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Integrated Framework

Component	Reductions in nitrogen loss
Engineering (Tikitere, sewerage)	50 tonne reduction
Rules	140 tonne reduction
Incentives Programme	100 tonne reduction
Gorse Programme	30 tonne reduction
Total	**320 tonne reduction**

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Integrated Framework

- Based on ROTAN 2011
- Gives proportions of sector reductions: **35%** from Dairy and **17%** from Drystock
- Proportions from sectors for 140 tonnes (96 tonnes and 44 tonnes)

- Social compact

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435 tonnes

- Regional Policy Statement
- Comes from NIWA modelling in the 1980s (Rutherford et al 1989, and confirmed a number of times)
- High degree of confidence

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Best Science/Good Data

- Self explanatory
- Implications for rules
- For example:
  - OVERSEER version management
  - Science reviews (commitment)

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The Approach

- We recognise and acknowledge the uncertainty
- We have a good start point (755t)
- We have a good end point (435t)
- We have a social compact around the Integrated Framework
- We need to set a firm pathway in place to provide certainty to the pastoral sector
- We need to start and review as we go……

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Allocation of Nitrogen Using OVERSEER 6.2

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Current position

Dual sector averages (drystock 20.4 kgN/ha dairy 46.6 kgN/ha) with ranges:

- drystock range of 16-32 kgN/ha
- dairy range of 39-52 kgN/ha

Delivers 35% and 17% sector reductions

Standard reduction/clawback

Majority support from StAG

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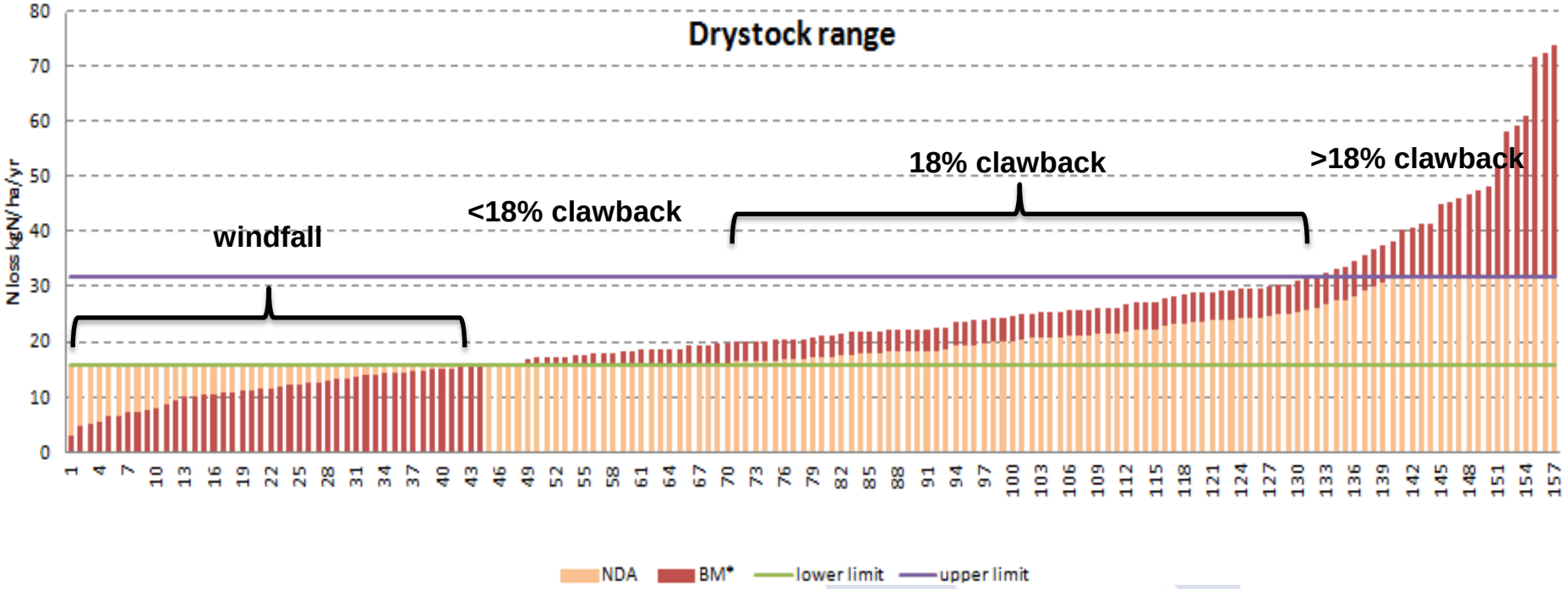

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OVERSEER version and allocation

- We have discussed NDA allocation using 6.1.3 data
- Files are being updated to 6.2
- 6.1.3 and 6.2: collectively improve drainage and soils (two critical elements for Rotorua)
- Allocation occurs through the rules

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Proposed Position

- Options to “fix” allocation: now or future

Now	Later 2017
Certainty for pastoral sector to begin planning	Updated versions
Incentives Board needs certainty to start	Property results may vary from current
Reference files approach	Winners and losers

- Preferred: Fix now at point rules are adopted using OVERSEER 6.2 on the basis that the integrity of the agreed allocation methodology is maintained.

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NMP requirements

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Schedule in Rules

- **A -** NMPs prepared for farm property or a farming enterprise derived from an industry environment management programme
- **B -** NMPs prepared for farm property or a farming enterprise that are not derived from an industry environment management programme.

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Information

- Property details and map
- Benchmark
- Nitrogen budget (current system)
- Pathway to 2032 – startpoint, interim planning targets (2022, 2027)
- Schedule of mitigation actions
- Phosphorus, fertiliser, effluent, gorse, irrigation management

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Points defining the pathway

- Start Point (as previously defined)
- 2022
- 2027

Interim Planning Targets

- End point 2032 NDA

Implication is 5 year planning blocks

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Purpose of NMP

- To confirm a pathway
- Schedule of mitigation actions
- Allow Council to track progress: farm – has mitigation occurred?
- Allow Council to track progress: catchment

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Implementation Plan

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Rules Implementation Plan

- Supports staff implementing the rules
- Detail that is not suitable for the rules
- How things will be interpreted
- How details might be treated

- For example, pre-BM environmental work

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NDAs:
Blocks or Sectors?

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NDAs: Blocks or Sector

- Benchmark talked about in terms of a property
- But is the sum of the blocks
- BM to NDA modelling has been looked at in terms of sector land use
- Blocks within each property were aggregated into three major sectors (drystock, dairy and trees)

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NDAs: Blocks or Sector

- NDA could be based on sector land use
- But blocks more pragmatic, obvious
- Allocation would operate the same way as benchmarking: blocks then sum to property
- “Actual nitrogen” for Incentives Scheme and trading

- Houseblocks will be separated out (to reflect septic tanks and gardens)

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Property BENCHMARK Aggregate into sectors

Sum

Block A - BM
Block B - BM
Block C - BM
Block D - BM
Block E - BM
Block F - BM

Allocation methodology

Property NDA

Sector basis

Block basis

Sum

Block A - NDA
Block B - NDA
Block C - NDA
Block D - NDA
Block E - NDA
Block F - NDA

Allocation methodology

Block A, B and D - Dairy NDA
Block C and E – Drystock NDA
Block F – Trees NDA

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Preferred Approach

NDAs on a block basis

- Pragmatic, obvious
- Data management an issue either way
- “Actual nitrogen” transactions for Incentives Scheme and trading
- Same outcome (but doing more work to check this)

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Grazing under trees….

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Background

- OVERSEER concerned with whether animals are on a block rather than the land cover
- As a result, a number of tree/scrub covered blocks that have been classified as drystock or dairy because animals had access to these blocks during the benchmarking years
- Typically these blocks have low N discharges and under the proposed approach would receive windfalls.

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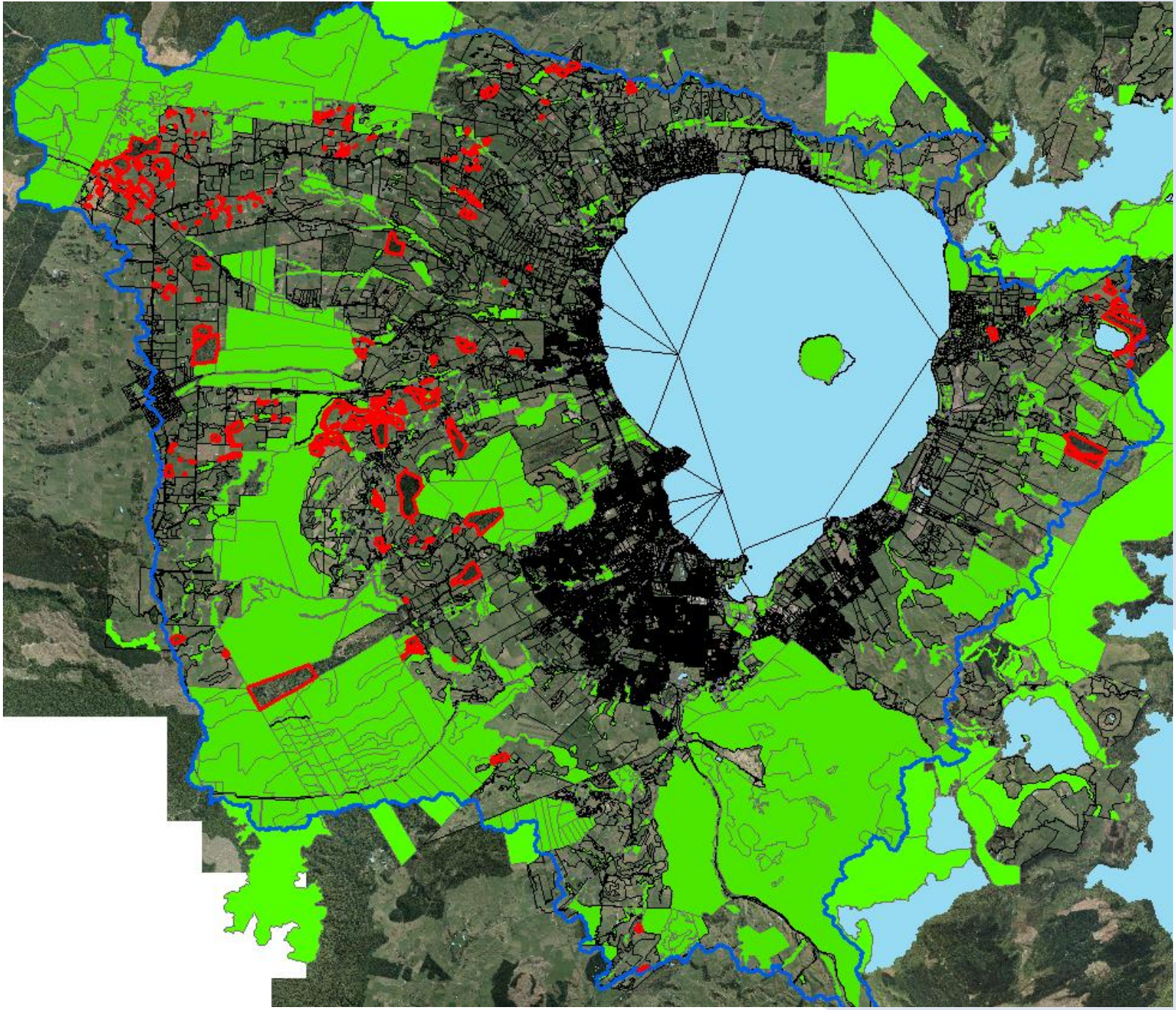

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The Numbers

- Total area is 1114 ha
- Total N discharge is 8427 kg N/yr
- 7.6kg N/ha/y

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The Numbers

Options

1. No change to current structure resulting in a 8.5 tonne windfall to farms on the basis that they were benchmarked that way
2. Reclassify these blocks as trees but leave the discharges on them so they get there BM value but no windfall
3. Reclassify as trees and remove discharges
4. Adopt some sort of case by case approach probably in combination with 2

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Thank you, questions?

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