Proposed Rules – Collective Meeting

Ngongotaha Hall, 7 March 2016

- **Rules summary**

- **Nitrogen allocation, plus examples**

- **OVERSEER reference files, example**

Simon Park

Some key regional plan terms

NDA = Nitrogen Discharge Allowance

- **To be fully met by 2032, intermediate 2022 & 2027 targets**

- **Measured as:**
    - kilograms N per hectare per year, kg N/ha/yr
    - Kilograms N per year for a whole property, kgN/yr

NMP = Nitrogen Management Plan

- **Shows how your NDA will be achieved through actions**

- **Supported by OVERSEER files**

N trading = transfer of NDA between properties

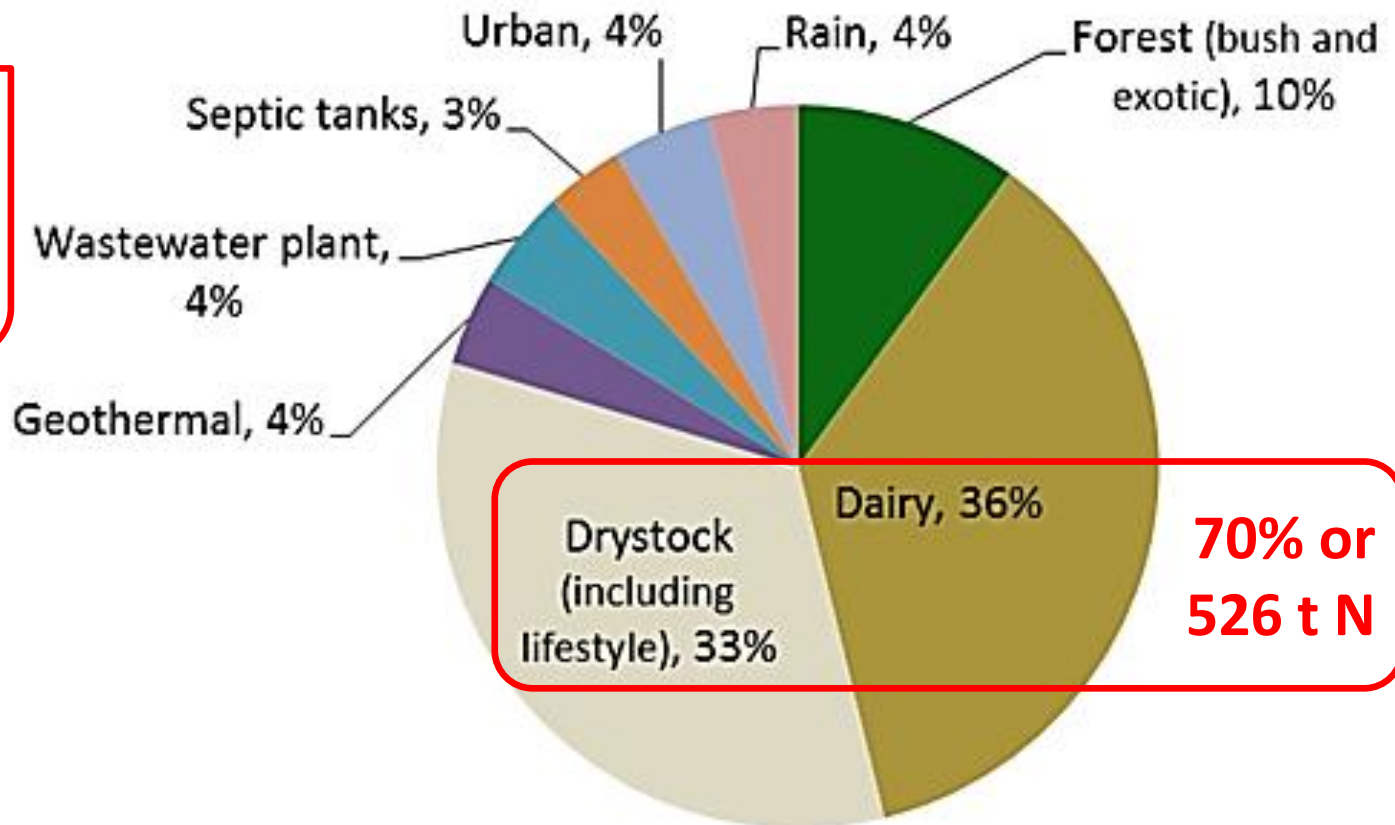**Permitted Activity = "as of right" activity with no resource consent, IF regional plan conditions met**

- **Non-permitted activities need resource consent from BOPRC**

Rule type	Size	Main Criteria	Rule
Permitted = meet conditions in plan	Any	Permanent bush and forestry;	R2
	<5 ha	No commercial dairy	R3
	>5 ha total and < 10 ha effective	Meet st	R4
	10-40 ha effective		R5
	Non Rul	2022; provide annual records	R6
		68% of drystock reference file = 18 kgN/ha in Overseer 6.2.0; provide annual records and file	R7
Cont = will be granted with conditions	ha effective or non Rule 11 land	Consent, NDA and NMP from 2022	R8
	>40 ha effective	**Consent, NDA and NMP from 2017** **main commercial farm rule**	**R9**
	Any	N trading from 2022	R10
	Any	Land uses not readily modelled by Overseer	R11
Non-complying	Any	Not meeting any of above criteria; Can be declined or granted with conditions	R12

Nitrogen allocation background

Annual load to lake, tonnes N		
Current	755	ROTAN model, NIWA 2011
Sustainable	435	Regional Policy Statement, 2014
Reduction by 2032	320	

Current N load sources, ROTAN 2011

Urban, 4%
Rain, 4%
Forest (bush and exotic), 10%
Septic tanks, 3%
Wastewater plant, 4%
Geothermal, 4%
Dairy, 36%
Drystock (including lifestyle), 33%

70% or 526 t N

N allocation: dividing the 320 tN reduction

	Reduction, tN/yr	
Engineering actions	50	• **Tikitere plant** • **Septic tank upgrades** • **Sewage and stormwater upgrades**
Pastoral	270	Integrated Framework policy, 2013
Total	320	

Pastoral sector to go from 526 - 270 = 256 tN i.e. less than half

Integrated Framework developed to make this possible

	Reduction, tN/yr		
Rules	140	• **96 tN from dairy** • **44 tN from drystock**	**adapted to dairy & drystock ranges**
Incentives	100	$40 m fund	
Gorse	30	$2.5 m fund	

All figures are in-lake N loads

Nitrogen NDA allocation – who gets what

- **Dairy, drystock and other sectors treated differently**

- **Reductions from "effective area" = pasture, crop, horticulture**

- **Effective area % clawback from Rule 11, but fit to a range**

- **Trees, grazed trees and house block NDAs @ Rule 11 levels**

- **NDA calculation based on OVERSEER 6.2.0**

- **Non-benchmarked land to get default NDA**

	R11 average	NDA average	average reduction	NDA range	Effective area clawback
	100	64.5	35.3%	54.6-72.8	31.3%
	31	25.6	17.2%	18-54.6	20%

Integrated Framework

NDA sector ranges in OVERSEER 6.2.0

Drystock
Range = 18-54.6 kgN/ha/yr
20% clawback from BM
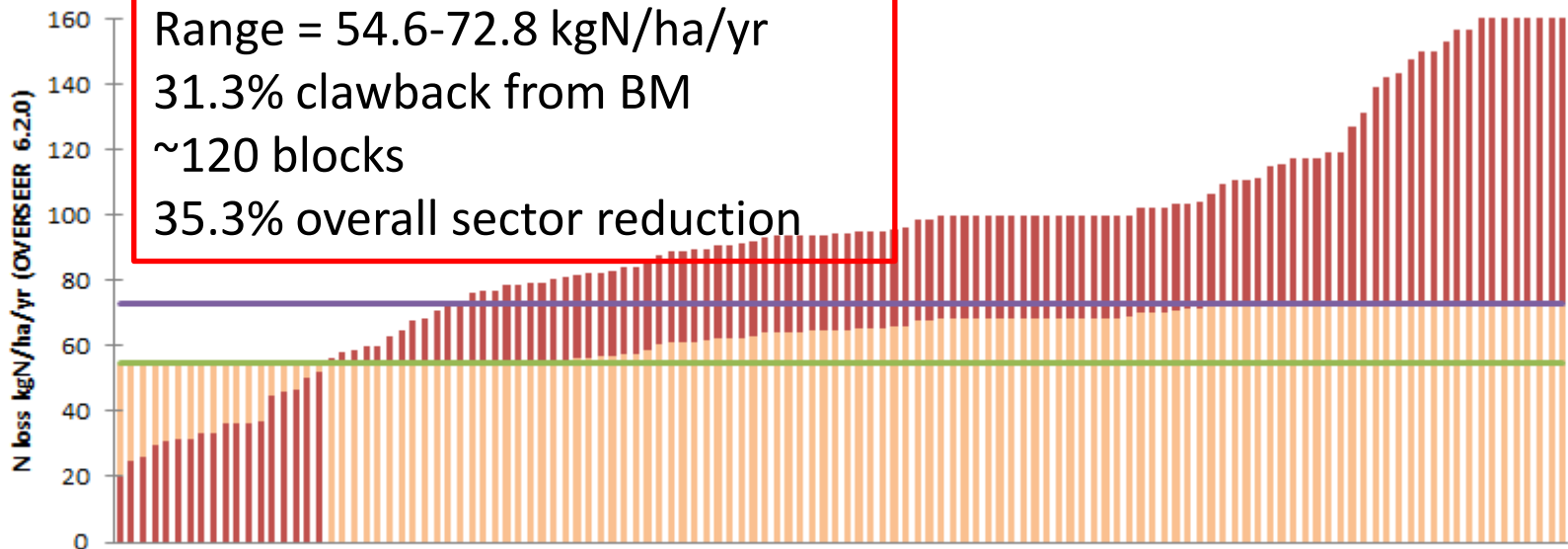~1000 blocks
17.2% overall sector reduction

Dairy
Range = 54.6-72.8 kgN/ha/yr
31.3% clawback from BM
~120 blocks
35.3% overall sector reduction

Drystock allocation examples

- **Hypothetical, per hectare (kgN/ha/yr), OVERSEER 6.2.0**

	R11	Clawback	= x	18 - 54.6?	NDA	% change
Drystock A	16	20%	12.8	no	18	12.5%
Drystock B	30	20%	24	yes	24	-20%
Drystock C	50	20%	40	yes	40	-20%

Dairy allocation examples

- **Hypothetical, per hectare (kgN/ha/yr), OVERSEER 6.2.0**

	R11	Clawback	= x	54.6 - 72.8?	NDA	% change
Dairy A	60	31.3%	41.2	no	54.6	-9.0%
Dairy B	100	31.3%	68.7	yes	68.7	-31.3%
Dairy C	130	31.3%	89.3	no	72.8	-44.0%

Reference file system

- **Schedule LR Five of proposed plan change 10**

- **Addresses version changes in OVERSEER**
  - Based on Perrin Ag report "Methodology for creation of NDA reference files and stocking rate table February 2016"
- **Why?**
  - OVERSEER changes are ongoing
  - Include new farm systems, mitigations and bug fixes
  - Avoid being locked in to old numbers or old versions
  - Maintain original allocation relativities

- **What are reference files?**
  - Hypothetical 100 ha dairy and 100 ha drystock farms
  - Soils, slope and climate representative of benchmarked catchment
  - Modelled as viable economical farms, at approximate average NDA:
    - Dairy ref file @ approximately 64.5 kgN/ha/yr
    - Drystock ref file @ approximately 25.6 kgN/ha/yr

100 ha base drystock farm

- 26 soil types
- Corresponding:
  - Slope
  - Rainfall
  - Catchment area %
- E.g. Mamaku podzol:
  - 2128 mm;
  - 11.4% of all benchmarked drystock land in the catchment

Block name	Type	Effective area (ha)		
Hapa_1a.1	Pastoral	0.6	✏	✖
Hapa_2a.1	Pastoral	1.9	✏	✖
Horo_2a.1	Pastoral	0.8	✏	✖
Kopu_2a.1	Pastoral	3.8	✏	✖
Kopu_8a.1	Pastoral	4.5	✏	✖
Matat_2a.1	Pastoral	0.2	✏	✖
Mku_11a.1	Pastoral	1.8	✏	✖
Mku_1a.1	Pastoral	11.4	✏	✖
Mku_2a.1	Pastoral	2.3	✏	✖
Mku_4a.1	Pastoral	3.0	✏	✖
Mku_5a.1	Pastoral	0.8	✏	✖
Ngak_15a.1	Pastoral	10.4	✏	✖
Ngak_24a.1	Pastoral	4.2	✏	✖
Ngong_14a.1	Pastoral	7.8	✏	✖
Opot_6a.1	Pastoral	0.4	✏	✖
Oraka_1a.1	Pastoral	6.3	✏	✖
Oropi_2a.1	Pastoral	4.1	✏	✖
Paeng_2a.1	Pastoral	1.1	✏	✖
Taup_90a.2	Pastoral	1.1	✏	✖
Teran_9a.1	Pastoral	6.2	✏	✖
Turan_10a.1	Pastoral	2.4	✏	✖
Turan_16a.1	Pastoral	3.1	✏	✖
Turan_1a.1	Pastoral	4.4	✏	✖
Turan_3a.1	Pastoral	6.0	✏	✖
Wind_10a.1	Pastoral	0.3	✏	✖
Wyma_2a.1	Pastoral	11.1	✏	✖

Select block type and add
Pastoral ▼ **Add**

Total farm area 100.0 ha ?

Total area declared as blocks 100.0 ha ?

How reference files are used

- **Each block NDA "referenced" as % against reference file N loss**
  - Hypothetical example (values in kg N/ha/yr):

OVERSEER® version	Sector Reference File	Block NDA	% of Reference File = NDA expressed as a %
Allocation version	**40**	**50**	**125%**
Version X	**43**	**53.8**	**125%**
Version Y	**51**	**63.8**	**125%**
Version Z	**33**	**41.3**	**125%**

- **NDAs will move <u>exactly in proportion</u> to reference files**

- **Actual N loss will move <u>generally in proportion</u> to reference files**