BIODIVERSITY AND FARM PLANNING

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BEST Symposium 1st May 2019

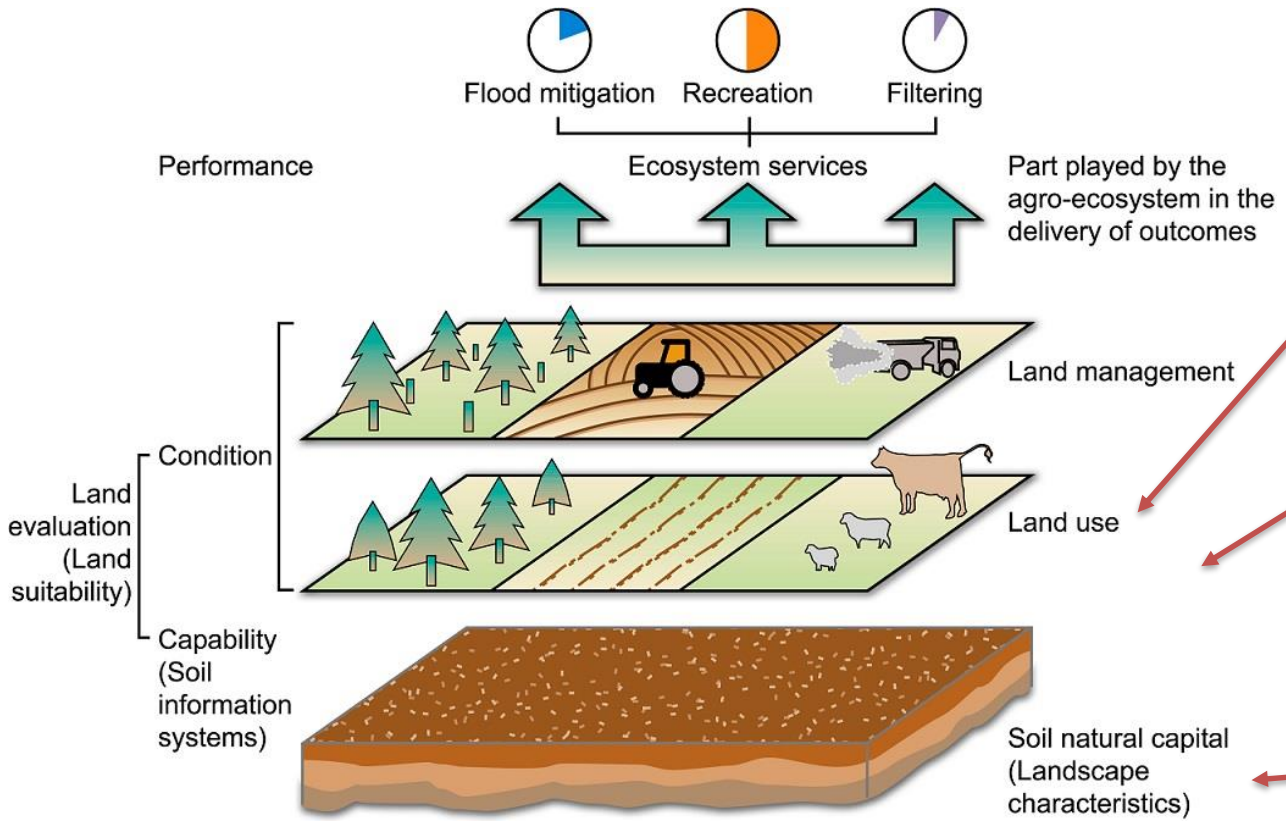
Current status of indigenous biodiversity

Total native vegetation (forest, shrubland, grassland and wetland)

Region	% region in native vegetation (area ha*1000)	Percentage of total native vegetation in different land uses					
		PCL	Sheep & beef	Dairy	Plantation	Urban	Other
New Zealand	43.0 (11,490)	61.5	24.5	1.4	2.8	0.0	9.8
Nelson & Tasman	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
West Coast	80.0 (1,868)	93.5	1.6	1.2	1.1	0.0	2.6
Canterbury	33.2 (1,500)	47.9	48.0	0.6	0.5	0.0	3.1
Otago	37.9 (1,207)	40.5	56.1	0.2	0.8	0.0	2.5
Southland	58.3 (1,856)	87.4	8.9	0.3	0.4	0.0	3.1

These differing statistics reflect the distinctly different landscapes that different sectors occupy.

Norton D., Pannell J. (2018) Desk-top assessment of native vegetation on New Zealand sheep and beef farms



Dominati, E.J., Mackay, A.D., Maseyk, F.J., Rendel, J.M. 2019. Farming in a changing environment: Increasing biodiversity on farm for the supply of multiple services. Science of the Total Environment. 662 703-713.

Main focus – protecting waterways and water quality

Researchers from AgResearch and The University of Queensland, with help from Taranaki Regional Council, recently undertook a research project to improve understanding of farmer's experiences and perceptions of the costs, benefits, and liabilities of planted riparian margins. Taranaki ring plain dairy farmers were invited to participate in the project.

A total of 22 farmers and one rural professional attended one of two interactive meetings held in Stratford in May 2015. Participants were divided into
Group A who are currently implementing riparian plantin
have fenced but are not currently planting the
two meetings involved presentatio
voting exercises.

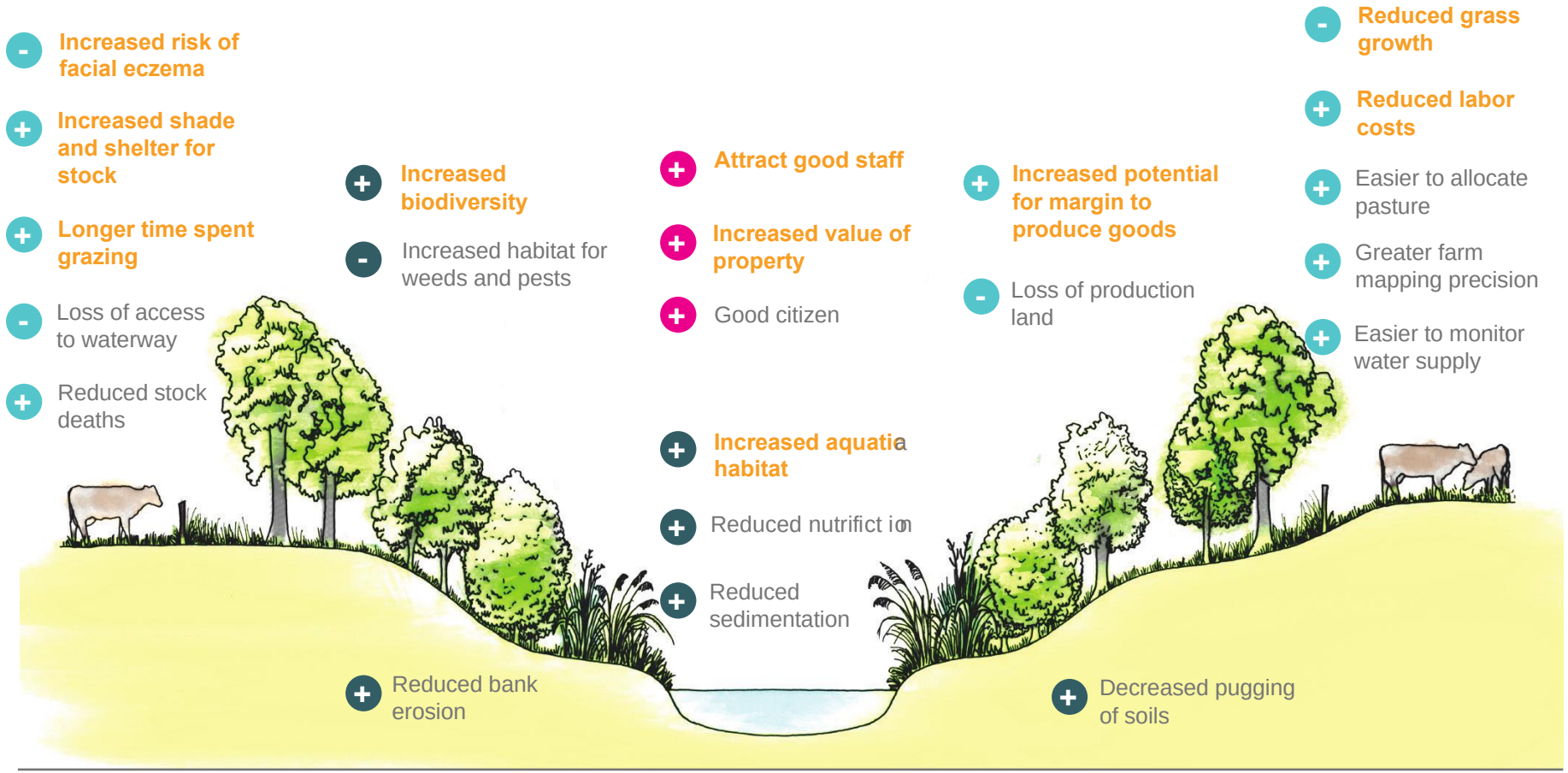
Meeting participants reviewing the issues raised by group discussion and asking the question: Which of these are most important to me?

How do riparian margins impact on the farm system?

How do riparian margins contribute to wider benefits?

What additional benefits does planting bring?

B



KEY

Type of impact:

- \+ Positive
- \- Negative

Values:

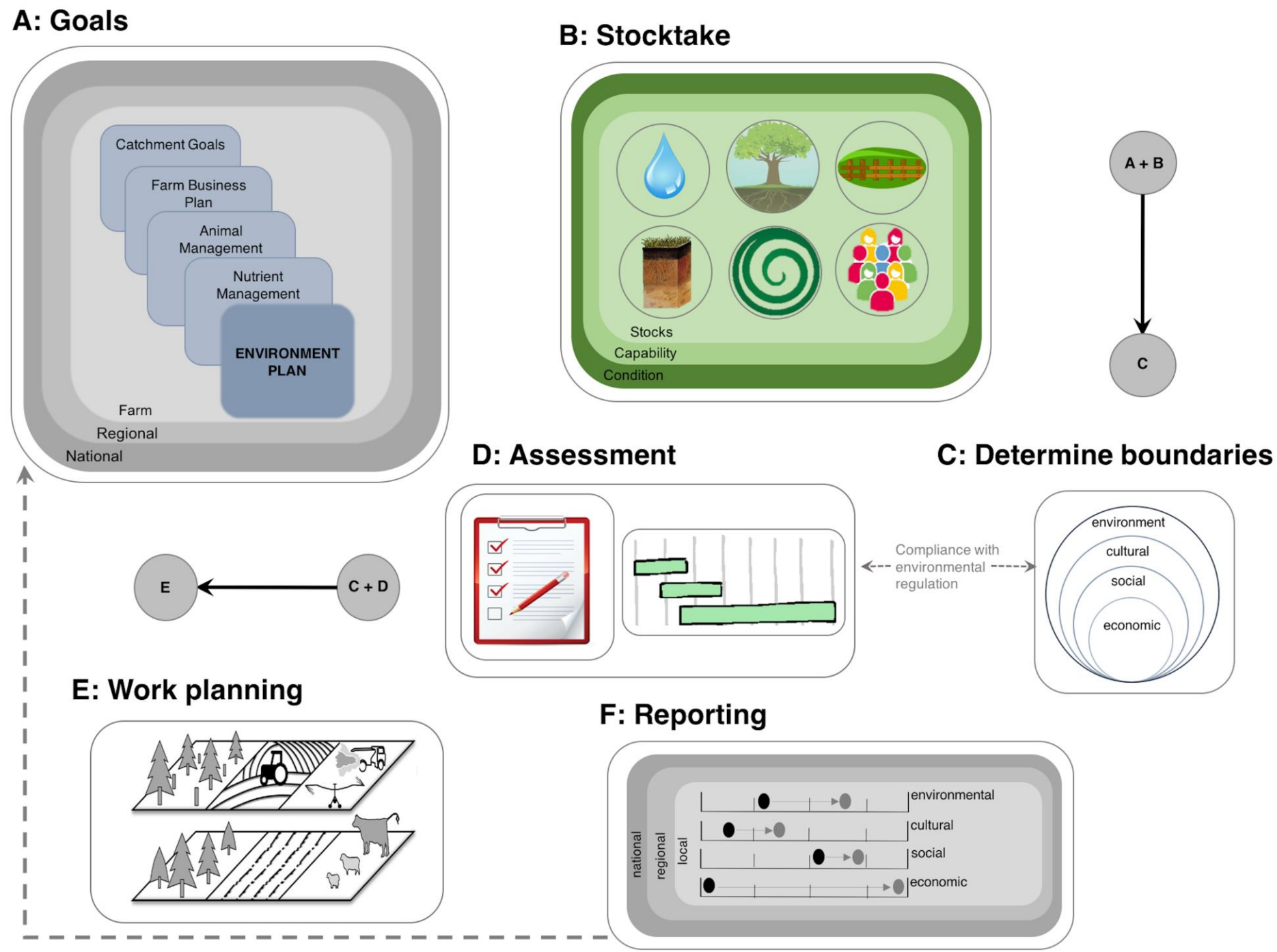
- Production
- Environmental
- Social

Graphic production: Michelle Baker. Adapted from TRC support material

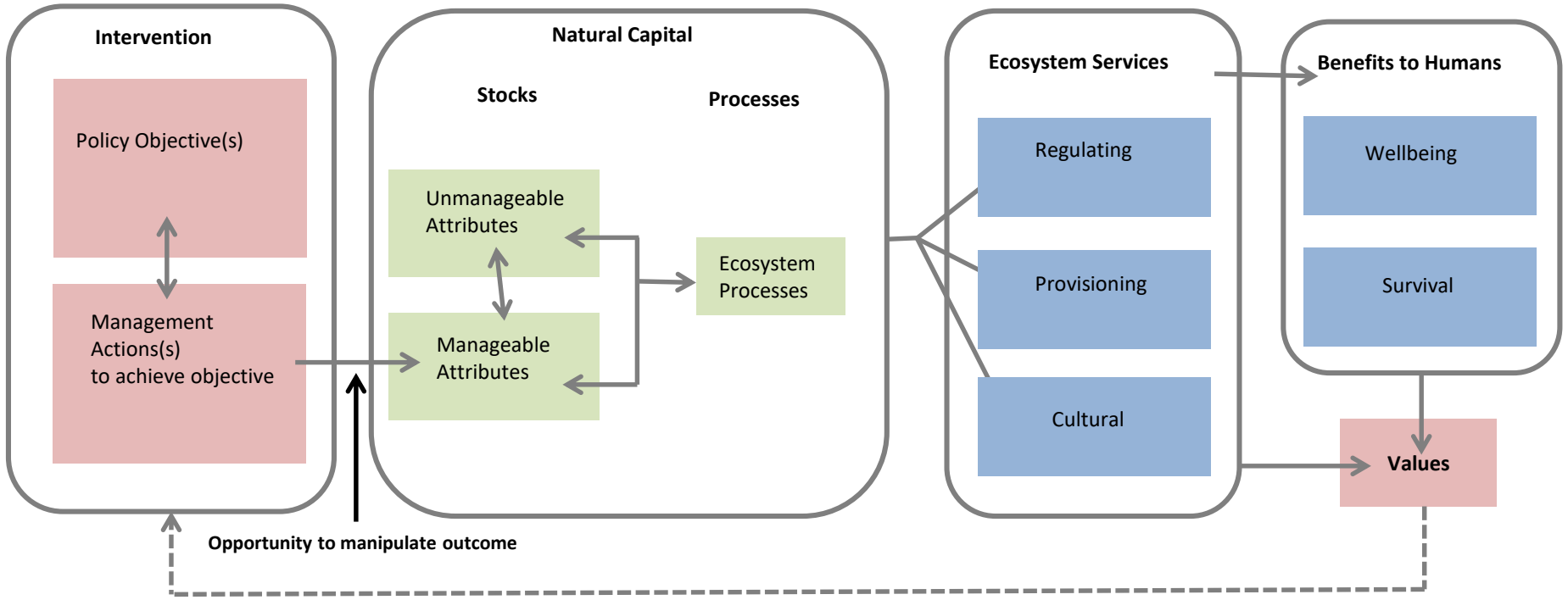
Quantification of wider benefits

	Provisioning	Regulating	Social/Cultural	
				
	Food provision via milk production	Water quality via nutrient attenuation	Contact recreation	Amenity
Performance level of the services	Milk yield	N & P losses	*Escherichia coli* concentration (frequency of exceeding red alert)	Landscape diversity index (proba LDI>0.7)

Maseyk F, Dominati E, Mackay A 2017. Change in ecosystem service provision within a lowland dairy landscape under different riparian margin scenarios. International Journal of Biodiversity Science, Ecosystem Services & Management.


A: Goals
Catchment Goals
Farm Business Plan
Animal Management
Nutrient Management
ENVIRONMENT PLAN
Farm
Regional
National
B: Stocktake
Stocks
Capability
Condition
A + B
C
D: Assessment
C: Determine boundaries
Compliance with environmental regulation
environment
cultural
social
economic
E
C + D
E: Work planning
F: Reporting
national
regional
local
environmental
cultural
social
economic

How we connect ecosystem services to farm business and resource management?



Maseyk FJF, Mackay AD, Possingham HP, Dominati EJ, Buckley YM 2016 **Managing natural capital stocks for the provision of ecosystem services** Conservation Letters

agresearch
āta mātai, mātai whetū

Challenges

- Sourcing data on the extent, condition and function of indigenous biodiversity at farm scale
- Poorly defined set of measures for monitoring the condition and function of indigenous ecosystems.
- Limited quantitative data on the provision of services from indigenous biodiversity and potential value to the farm business
- Understanding more about how services change as the ecosystem degrades or improves
- Understanding how service provision is changed if exotic species are providing the services rather than predominantly native
- The interactions between adjoining exotic and indigenous ecosystems and how current practices impact on those interactions are poorly understood
- Limited recognition and use of traditional knowledge (i.e. Mātauranga Māori)
- Biodiversity strategies are of limited value in informing farm scale decisions on biodiversity..