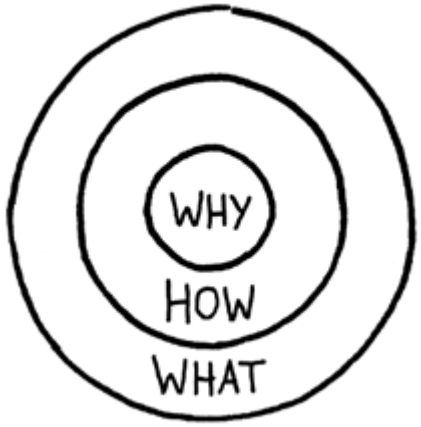
Forestry and catchment management into the future

by Simon Stokes, Catchments Manager (Eastern), Bay of Plenty Regional Council

3 themes

- History repeating itself
- Current state of affairs
- Conversation and participation

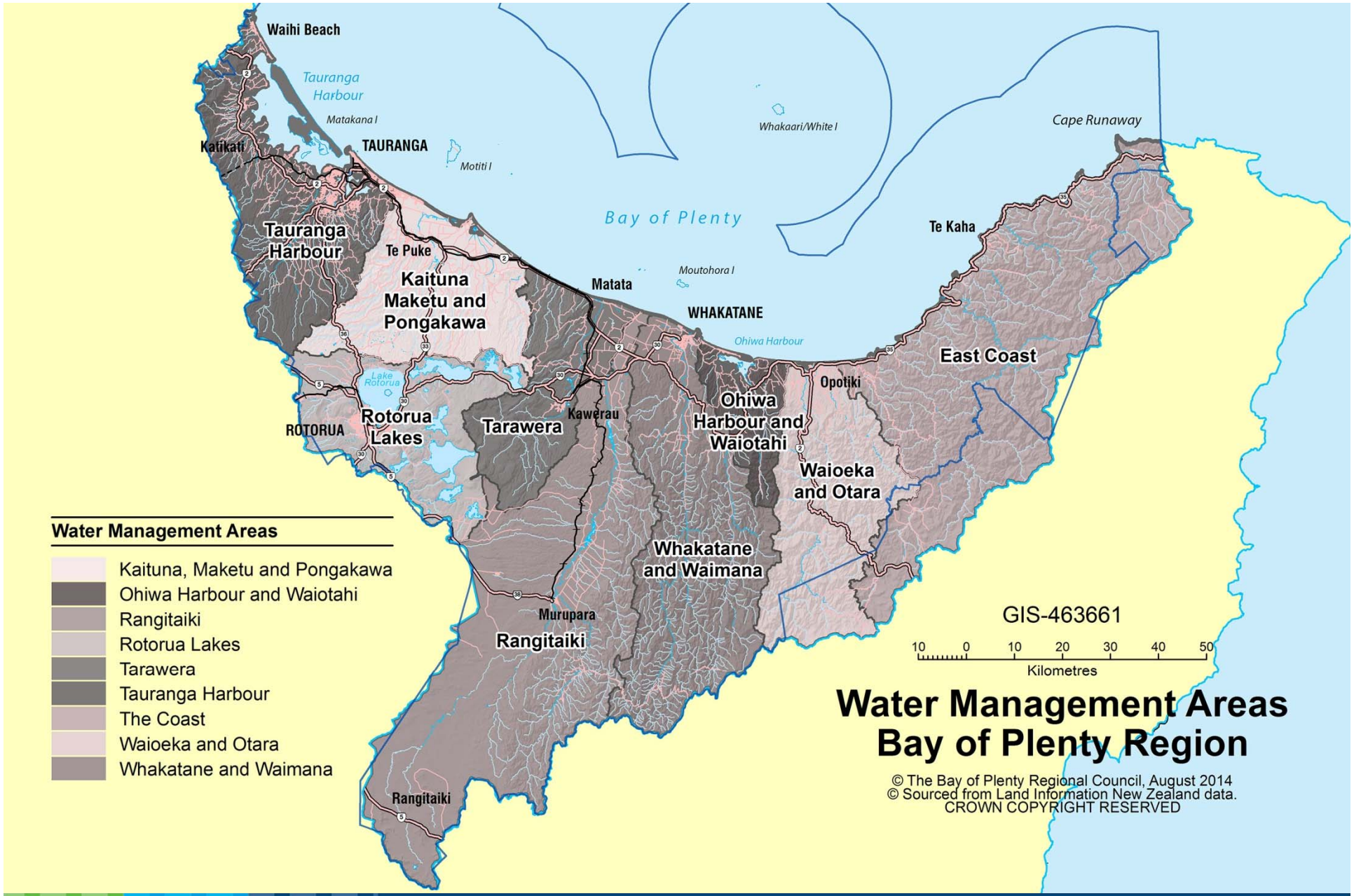


1 Message

- Extension and advocacy

36 + 70

- Catchment approach
- Farm planning
- Funding support
- Government ministry and departments
- Extension officers, soil conservators
- Whole infrastructure supporting and encouraging forestry



Bay of Plenty REGIONAL COUNCIL

BAY OF CONNECTIONS FORESTRY & WOOD PROCESSING STRATEGY 2014

Forestry and Wood Action group

The forestry and wood processing industries in the wider Bay of Plenty are a significant part of the regional and national economies, representing the central hub of New Zealand's forest and wood processing industry. The region produces 40% of the country's harvest and is set to provide New Zealand's largest single regional supply of uncommitted forest harvest in the next 30 years.

ES values of key land uses in Ōhiwa catchment

*The graph showing trade-off value by land use in $/ha has been temporarily removed as this is currently in the review process for journal publication.

SCION
forests · products · innovation

Scenario 1 – Planted forest ↑10%, S&B ↓320 ha

*The graph showing trade-off value by land use under a scenario of increased planted forests by 10% and reduction of S&B by 320 hectares, overall value of catchment increases, has been temporarily removed as this is currently in the review process for journal publication.

SCION
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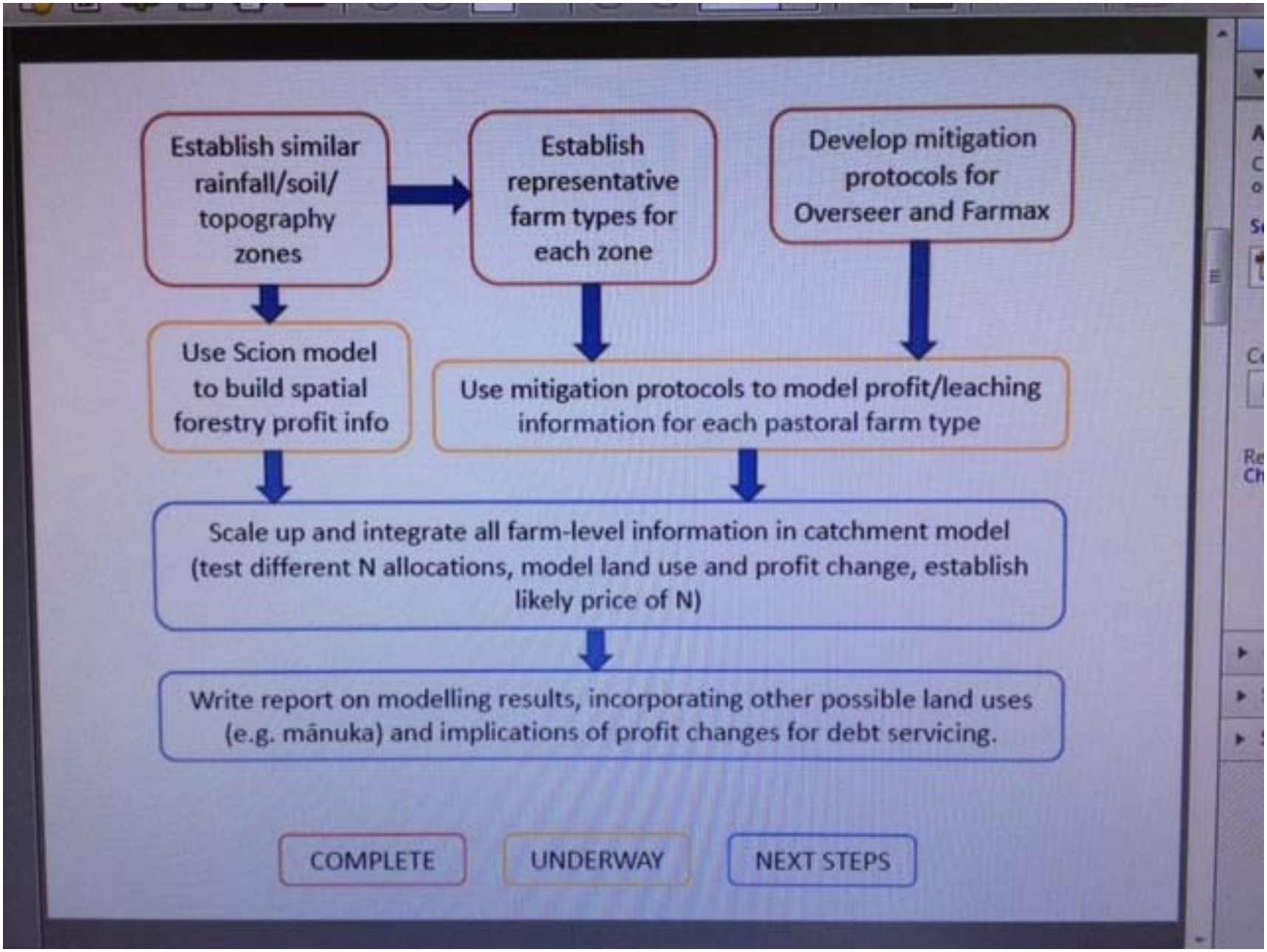
Lake Rotorua

1. Practices to improve water quality focused on N mitigation strategies

- Whole farm planning and business analysis: *Involves assessment of farm resources, stocking policies and farm business risk. A good starting point that will help clarify the most useful practices to consider in this menu.*
- Nutrient management via a nutrient budget: Farm consultant/advisor should use OVERSEER 6 to create a nutrient budget for the whole farm with recommendations to be included in nutrient management plan


Establish similar rainfall/soil/ topography zones
Establish representative farm types for each zone
Develop mitigation protocols for Overseer and Farmax
Use Scion model to build spatial forestry profit info
Use mitigation protocols to model profit/leaching information for each pastoral farm type
Scale up and integrate all farm-level information in catchment model (test different N allocations, model land use and profit change, establish likely price of N)
Write report on modelling results, incorporating other possible land uses (e.g. mānuka) and implications of profit changes for debt servicing.
COMPLETE
UNDERWAY
NEXT STEPS

Forestry

- Perceptions
- Policy Certainty and Equity
- Land Value
- Investment capital
- Land competition
- Scale and distance

Tools -

Forecaster

•AEM

•MyLand

•NuBalm

•Forest Investment Finder

•Biomass model

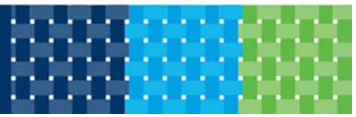
•‘Octopus’

- Forestry a very valuable land use
- Forests are far more than ‘radiata blanket’
- Key component of a land use mosaic
- Many environmental benefits on top of the timber economics
- Forestry has a continuing key role to play in BOP

Science Challenges

- New Zealand's Biological Heritage $63.7m
- Building Better Homes, Towns, and Cities $47.9m
- Resilience to Nature's Challenges $59.4m
- Sustainable Seas $71.1m
- Our Land and Water $96.9m
- Deep South (climate change) $51.1m
- Total $390.1m

No.	Research Priority (RP)	Owner(s)
1	Identify and quantify the costs and benefits of different BMPs, including whole farm plans	LMG
3	Determine rate and impact of the loss of high class soils, change in ownership and land fragmentation on economic potential and ecosystem service provision	LMF
4	Test alternative options / refresh NZLRI and LUC to better account for contemporary and alternative land uses and allow use in regulating nutrient loss	LMG & LMF
5	Enhance the coverage, quality, and interoperability of S-map, land cover and land use information	LMF
6	Quantify the value of ES to water quality, production, biodiversity & carbon outcomes	LMF
9	Establish a cost-effective and easy to implement indicator of soil health	LMF
11	Develop improved input data on erosion and sediment generation to enhance the performance of erosion and sediment modelling	LMG & LMF
14	Classify NZ catchments according to pressure, state and impacts	Cross-SIG
15	Understand farmer motivation, behaviour, and psychology to improve uptake of BMP and technologies	LMG



What science is needed moving forward for land?

- Catchment based modelling to analyse actual state and scenarios of potential change and effects of those changes – farm scale is also important
- Ecosystem services modelling to understand the ‘value’ of land cover/land use as a service
- Modelling erosion risk rates and sediment volume rates to land uses and landforms - erosion and sediment metrics for reporting e.g. TGA HBR
- Developing a soil loss tolerance level for our land uses and receiving environment
- Detection technology

How? Conversations and participation

1. Need more people outside of the sector understanding forestry and trees to grow confidence - real problem…..
2. Need NPS based catchment and council groups participation? Who will influence policy setting
3. Need to be answering the major question arising of how to change land use patterns from existing state (market forces/incentives/regulations
4. Need more pan sector professionals (extension based or foresters) who can promote and support forestry into business decisions - forestry/woodlots and trees in the environmental farm planning thinking
5. Need to be heavily involved in the science challenges to integrate the thinking and outputs

How? Continued…

6. Need to advocate to MPI/MfE and Regional Council's – more champions/knowledge brokers/boundary organisations
7. Need to find levy funding for supporting forestry advocates/experts into the future catchment groups

8. For catchments focus research on steepland management, erosion and sediment modelling, spatial and detection precision and ecosystem services and whole tree harvesting and use

Summary

Low and behold history has repeated itself and we're back with integrated catchment management, albeit more complex, minimal grant funding, land use capability and spatial tools and farm planning and still the same problem that existed when our forebears decided it was a problem.

Now is the time to be involved as the next 10 years will be crucial to forestry.

What is missing is the support and infrastructure (and funding) to provide the extension and advocacy that will allow conversations and participation to occur to support forestry appropriately into the future.

Status quo - Storm event - Future proofing

The Plan

Land Use Capability

Farm inventory information

Recommended Land Use

Soil/ Geology/Water resource

↓

Resource management plan
- options for implementing sustainable land and water management including other environmental issues

↓

Revised Farm inventory and Business operation