

**Workshop - Setting Limits for Nutrient Loss  
Implications of policy implementation for science,  
resource requirements and capability building**

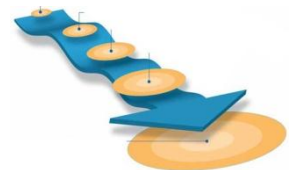
# **Hawke's Bay Regional Council**

## **Approach to nutrient management in the Tukituki Catchment**



# Key Issues in the Tukituki

- Excessive growths of algae and slime particularly in the Lower Tukituki
- Impacts on swimming, trout fishing, amenity, ecosystems
- Inadequate physical habitats at times of low flow – trout and native fish
- Demand for more water for irrigation



# Tukituki Water Strategy

## Resilient Ecosystems

We want:

Improved summer flows

Improved water quality

Improved aquatic and riparian habitats

## Resilient Economy

We want:

Improved water security

Increase business certainty

Increased inwards investment

Sustainable economic growth

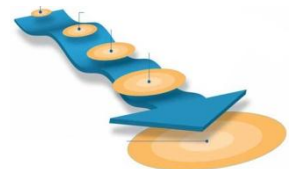
## Resilient Communities

We want:

Improved amenity

Restored mauri

Improved social well being



# Tukituki Water Strategy

## Resilient Ecosystems

How do we get there:

Harvest winter flows

Minimum flow, allocation and water quality limits

Wastewater upgrade

Minimise sediment and nutrient inputs to rivers

## Resilient Economy

How do we get there:

- Storage based Community irrigation scheme

Plan provides allocation framework (water quantity and quality)

## Resilient communities

How do we get there:

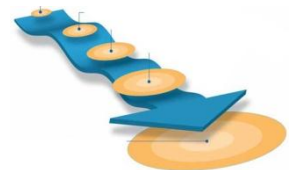
Flow on effects from business certainty and security

Flow on effects from allocation framework



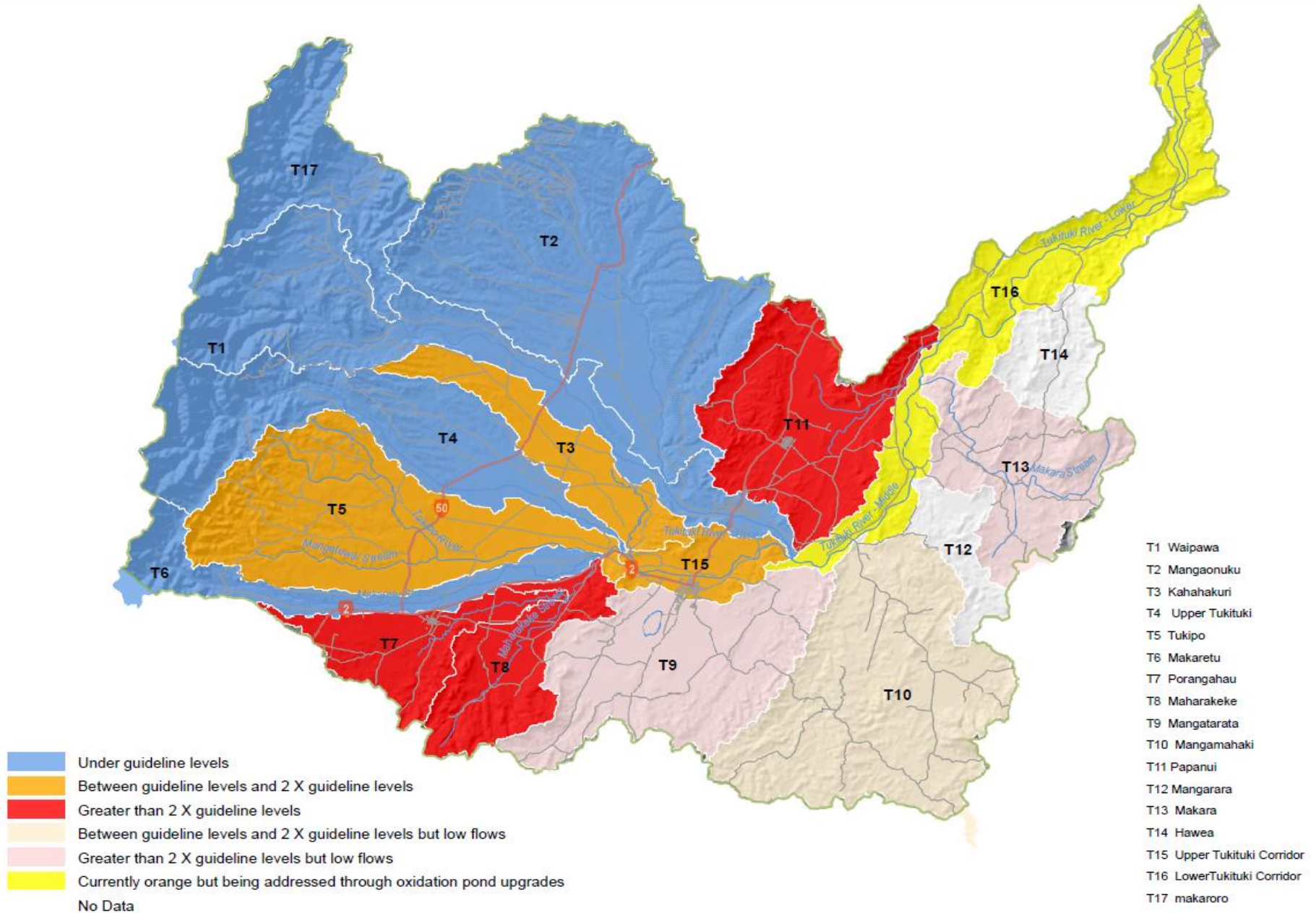
# Tukituki Plan Change 6

- To be adopted by Council on 27 February
- Nutrient management approach
  - P for Periphyton
  - N for Fish and Invertebrates
- Instream water quality limits for DRP and Nitrate
- Not setting limits for N and P loss from land



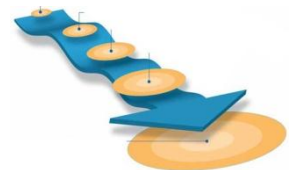


# Phosphorus (DRP) Targets for periphyton control



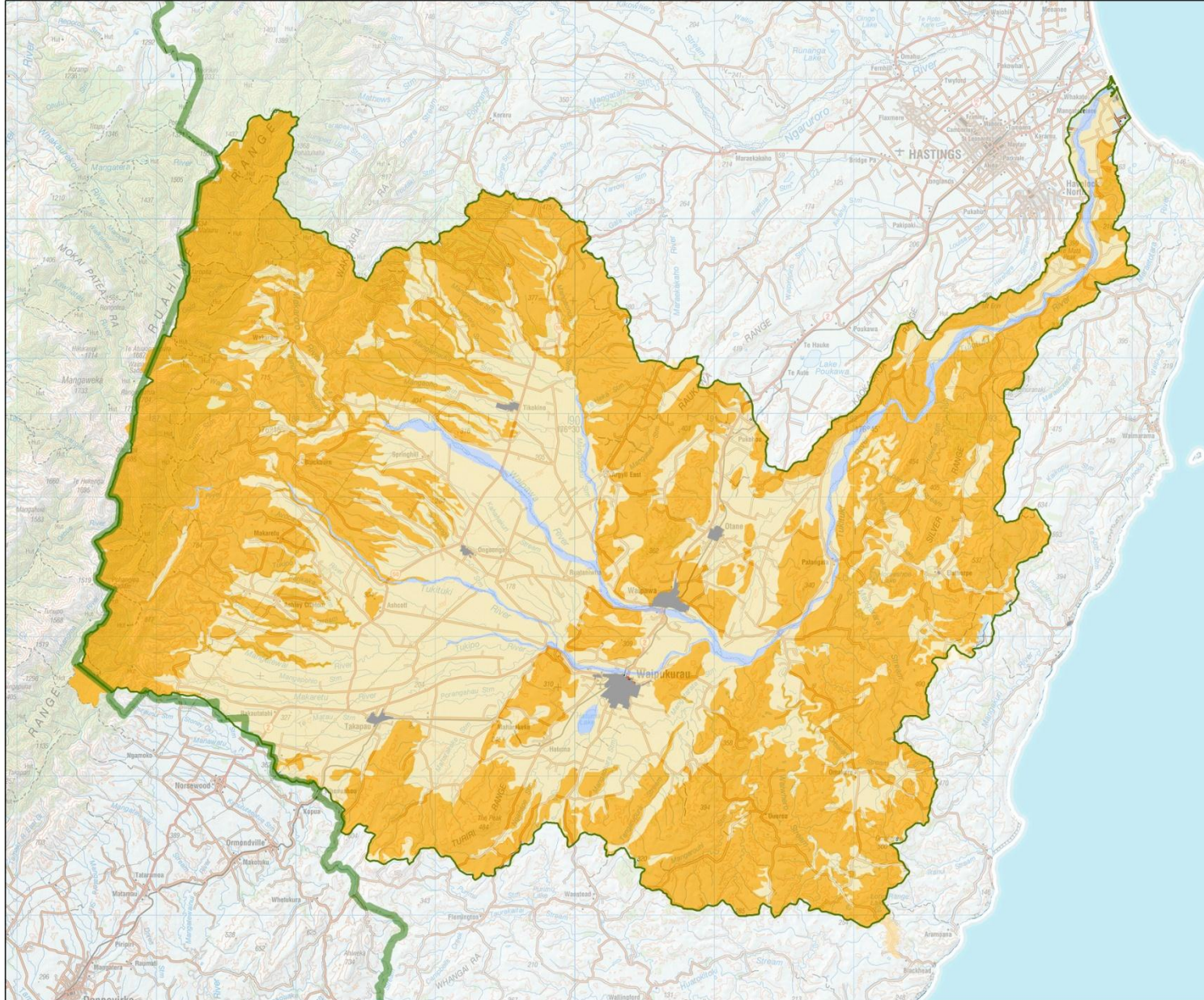
# Reducing phosphorus losses from production land

- Meet targets by 2030
- Stock exclusion
- Require all stock to be excluded from water bodies on land less than 15 degrees
- Require stock at > 18SU (excl sheep) to be excluded from water bodies on land greater than 15 degrees
- From permanent water bodies by 31 December 2017
- From intermittently flowing water bodies by 31 December 2022





# Slope (less than 15 degrees / greater than 15 degrees)



- Urban Areas
- Slope
  - 0 - 15 Degrees
  - > 15 Degrees
- lake
- river

## Tukituki Plan Change 6 Slope Classes



1:250,000



DATA FROM: Farm information obtained from the Hawke's Bay Regional Council's Geographic Information Systems Database.

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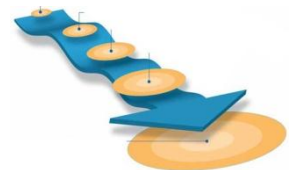
# Reducing phosphorus losses from production land

- Nutrient management plans
  - Papanui/Porangahau by 2017 (> 4 ha?)
  - Maharakeke by 2018 (> 4 ha?)
  - Tukipo, Kahahakuri, middle Tukituki by 2020 (> 4 ha?)
  - Rest of Tukituki catchment by 2023 (> 100 ha??, no requirement?)
- Work in hotspot catchments
  - Landowner/ Industry / HBRC /Stakeholders

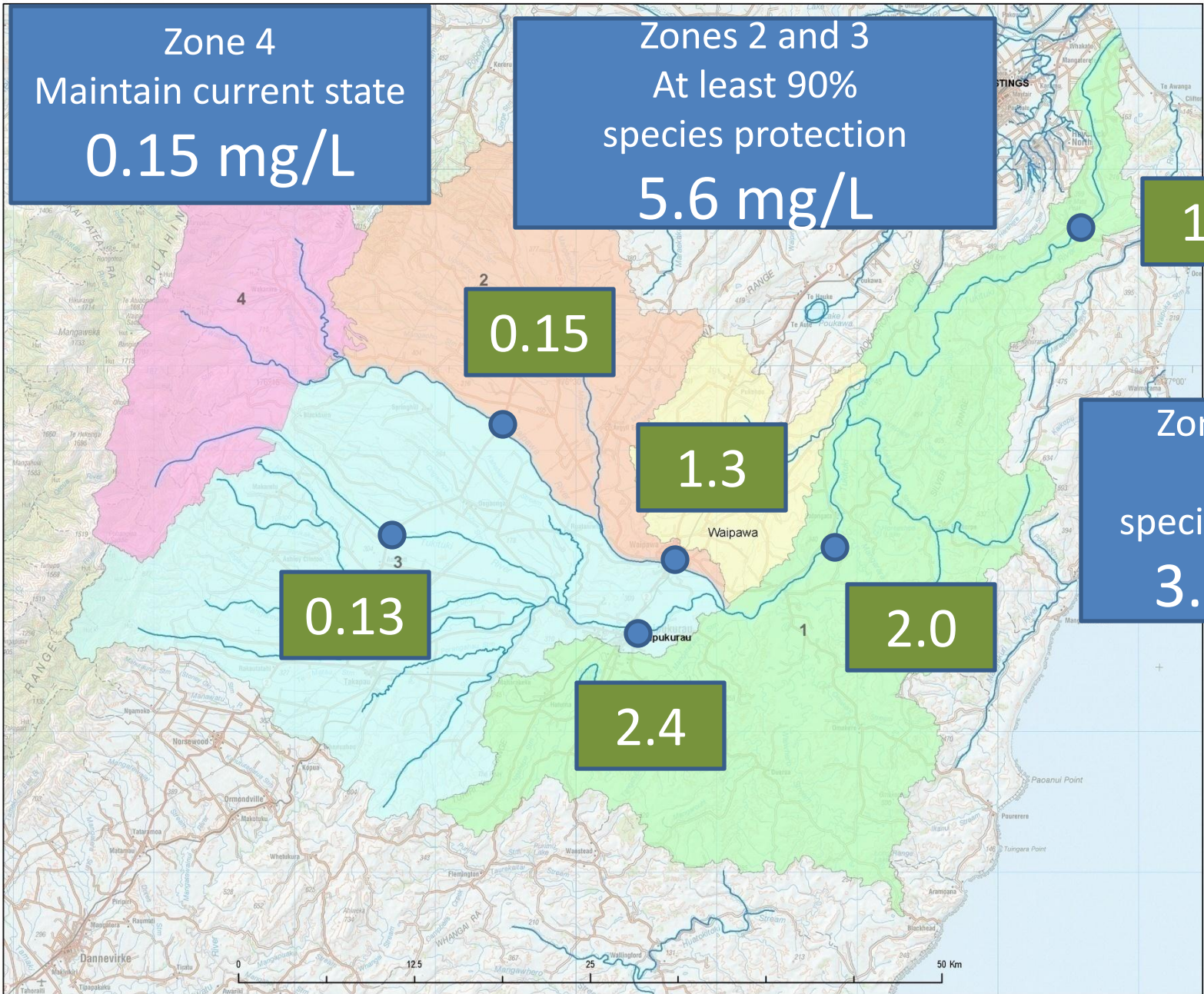


# Reducing phosphorus losses from production land

- Tukituki Catchment Implementation Plan – Monitoring, Evaluation, Reporting and Improvement (MERI) Plan – important for credibility
- Review need to increase regulation in 2020 and 2025 taking into account whether:
  - DRP concentration trends indicate target may not be met
  - Indicators in MERI Plan are not being met



# Nitrate-nitrogen limits for protection of fish and invertebrates



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# Managing to in-stream nitrate limits

- Give time for industry to develop good industry leaching rates and nitrogen conversion efficiency (2017, 2018)
- Expect but give time for good agricultural practice and compliance with leaching rates (2020)
- Nutrient Budgets required by 2018 (can rely on sector specific defaults where they are less than 15 kg N /ha/year)
- Land use consent & Farm Environmental Management Plan if N leaching increases 10% or 5kg





# Targeting Nutrient Budget and management plan requirements

- 1340 properties greater than 4 ha
- 25 hours per nutrient budget (peer review and auditable standard)
- \$1750-2500 / budget (\$2-3M)
- 4 FTEs 5 years to complete
  
- P is the priority – focus in sub-catchments for NMPs
- Nutrient budgets necessary for accounting for N – focus on moderate to high leachers



# Implications for science, resource requirements, capacity building

## KNOWLEDGE

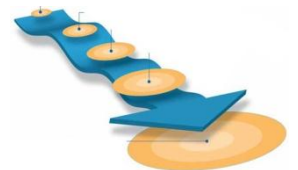
- Awareness of impacts
- Awareness of local catchment status
- Resource information at suitable scale
- What is industry good practice?



# Implications for science, resource requirements, capacity building

## TOOLS

- Nutrient budgeting models – fit for purpose, accreditation and quality control
- Nutrient management plans and farm environmental management plans – industry resource kits
- User friendly GIS application – integrate farming systems
- Catchment nutrient models – RC tool



# Implications for science, resource requirements, capacity building

## SKILLS

- Community engagement and facilitation
- Design of monitoring and evaluation frameworks

