




MARINE ESTATE MANAGEMENT AUTHORITY

Working together to manage our marine estate

www.marine.nsw.gov.au




LUKE JEWELL – NSW DEPARTMENT OF PRIMARY INDUSTRIES

NSW marine estate management strategy

The Clean Coastal Catchments Project ('CCC')

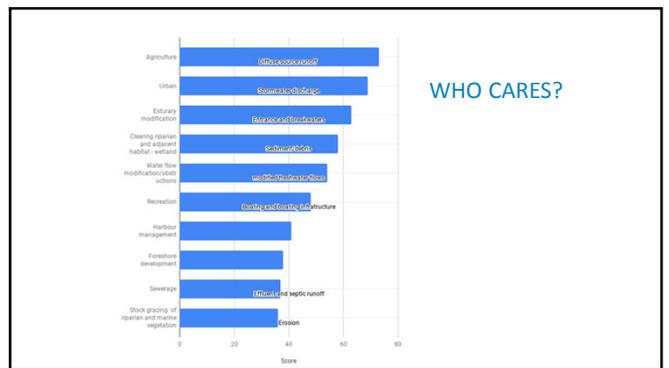
www.marine.nsw.gov.au

Presentation summary

- The Clean Coastal Catchments project context
- Industries involved
- Key outcomes, strategy and implementation
- Stage II options



www.marine.nsw.gov.au



Inferred diffuse agriculture run-off studies

Blueberry farms run-off linked to high nitrogen levels in Boreas Coast waterway

Nitrate loads in sub-optimal headwater streams driven by intensive horticulture.

A better alternative

Intensive horticulture, particularly blueberry farms, is contributing to high nitrogen levels in the Boreas Coast waterway. This is a major concern for the environment. The waterway is a major source of nitrogen for the Boreas Coast waterway. The article also notes that the waterway is a major source of nitrogen for the Boreas Coast waterway.

www.mpar.nsw.gov.au

CCC Project – improving water quality

LONG TERM OUTCOME

Improved water and nutrient productivity and sustainability of NSW coastal intensive agriculture producers and reduced off-site impacts on sensitive marine areas.

SHORT-MEDIUM TERM OUTCOME

Producers in the coastal intensive agriculture sector understand and actively manage the issues associated with land management practices and their impact on the marine estate.

www.mpar.nsw.gov.au

Industries engaged by CCC

The NSW Marine Estate Regions are divided into Northern, Central, and Southern regions. CCC is engaged in various industries across these regions, including agriculture, aquaculture, and tourism. The map shows the coastal areas where CCC is engaged. There are also three small photos showing agricultural scenes: a field with trees, a field with a fence, and a field with a fence.

www.mpar.nsw.gov.au

CCC approach

The CCC approach involves a cycle of research, strategy development, and implementation. Research in ag science and human behaviour informs the development of a Behaviour Change Strategy (CBSM). This strategy is then implemented through demonstration sites and on-ground assessments/incentives programs. The demonstration sites focus on monitoring nutrient uptake and losses, and experimental management practices. The on-ground assessments focus on helping growers improve irrigation/fertigation systems and erosion management. The research also leads to verifying fertilizer input levels and water requirements for blueberries under Australian conditions.

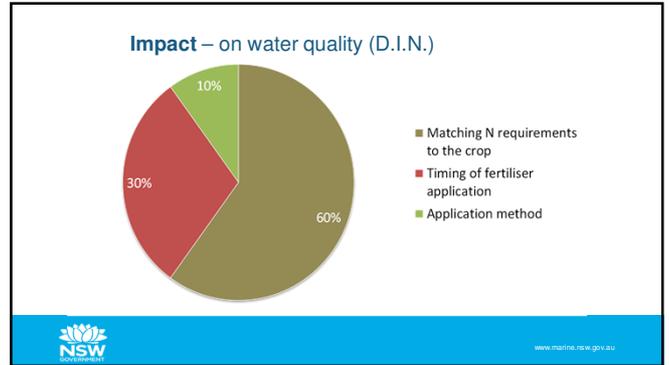
www.mpar.nsw.gov.au

Behaviour change strategy

Community-Based Social Marketing

Uncover Barriers & Benefits | Select Behaviours | Develop Strategy | Pilot Strategy | Implement Broadly & Evaluate

NSW GOVERNMENT www.mpr.nsw.gov.au



Probability of adoption

Barriers	Benefits
Mindset, 'it's how we've always done it' 7 responses	Financial (minimising costs, maximising returns) 10 responses
Cost of multiple soil tests 6 responses	Crop health (improving yield and/or commercial cane sugar content) 10 responses
Not recognising terminology or no understanding (SIX EASY STEPS) 5 responses	Minimising runoff 2 responses
Time and labour involved in calculating and applying fertiliser properly 3 responses	
Not believing the science and the method itself 3 responses	

NSW GOVERNMENT www.mpr.nsw.gov.au

Ranking process

Behaviour	Impact	Probability (0-4)	Penetration (0-100%)	%	Weight	Rank
Matching nitrogen supply to crop requirements, following industry best standards (ES)	3.54	2.55	0.71	0.82	5.26	1
Varying nitrogen rates based on productivity zones	2.85	1.25	0.77	0.74	2.03	2
Timing of fertiliser application with respect to harvesting and irrigation (ie. Not fertilising directly after harvesting)	2.65	1.56	0.09	0.77	0.29	3

NSW GOVERNMENT www.mpr.nsw.gov.au

Research to tighten fertiliser input levels

- Current recommendations based on old research from the US
- Facility will verify leaf nutrient standards for blueberry under Australian conditions, and describe water and nutrient use by blueberry on a seasonal and growth-stage basis.



Table 1. Annual fertiliser program using liquid fertiliser applied once per week.

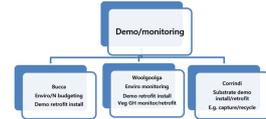
Element	Annual total of element required per hectare (kg)
Nitrogen (N)	121
Phosphorous (P)	83
Potassium (K)	55
Calcium (Ca)	15
Magnesium (Mg)	10
Sulphur (S)	37
Zinc (Zn)	0.8
Boron (B)	0.5



www.mpinns.nsw.gov.au

Monitoring & demonstration sites

- On-farm monitoring and measurement of *current* water and nutrient management i.e. N and P utilisation and losses.
 - Implement practice change on these farms and monitor changes
- Use demonstration sites to showcase changes and drive adoption of BMPs.



www.mpinns.nsw.gov.au

CCC Stage II proposed options

Where to from here?

- Water quality farm scale monitoring studies need to be longer term for credible data
- Intervention benefits shown/promoted over time
- More industries covered in more areas e.g. livestock on South Coast
- BMP programs tailored for water quality outcomes



www.mpinns.nsw.gov.au

The CCC team & collaborators



www.mpinns.nsw.gov.au

