

# Including uncertainty in biodiversity layers in decision support tools

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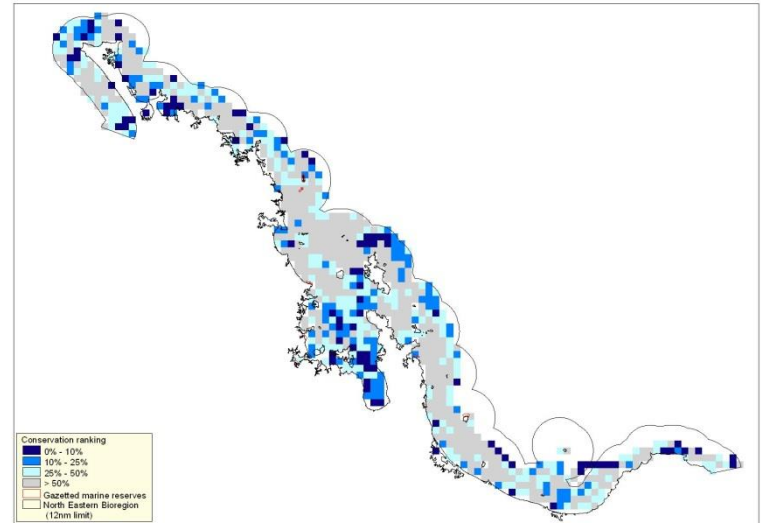


@fabstephenson

@cjlinnz

# Systematic Conservation Planning

- Guide decisions about spatial management of marine seascapes in a systematic, transparent, repeatable way
- Use spatial planning to determine those areas that satisfy biodiversity and stakeholder objectives



# Predicted Vulnerable Marine Ecosystems distributions and uncertainty

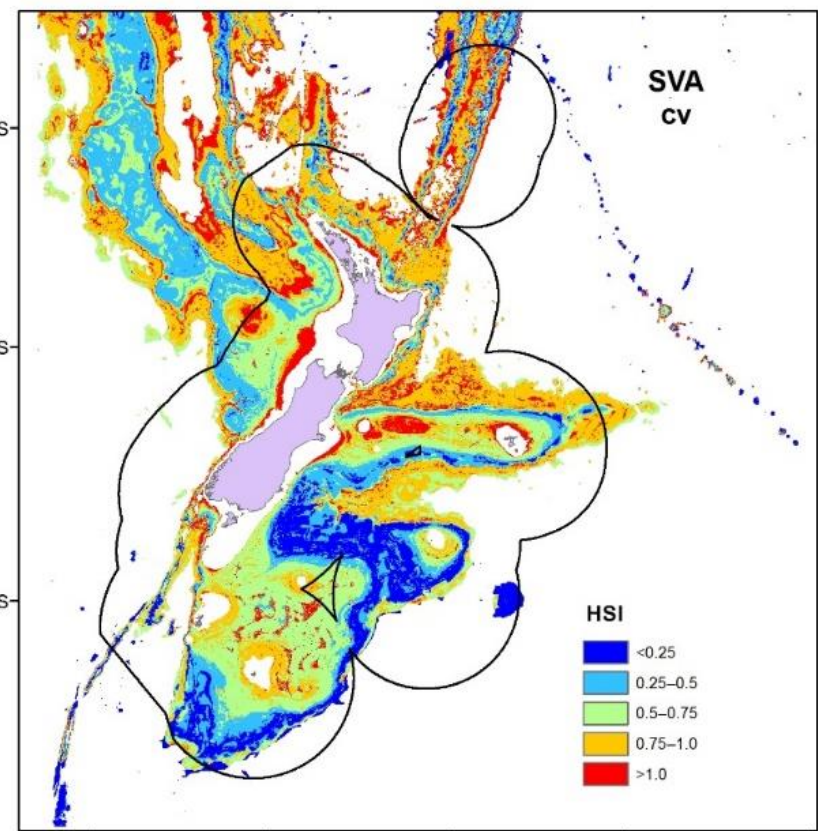
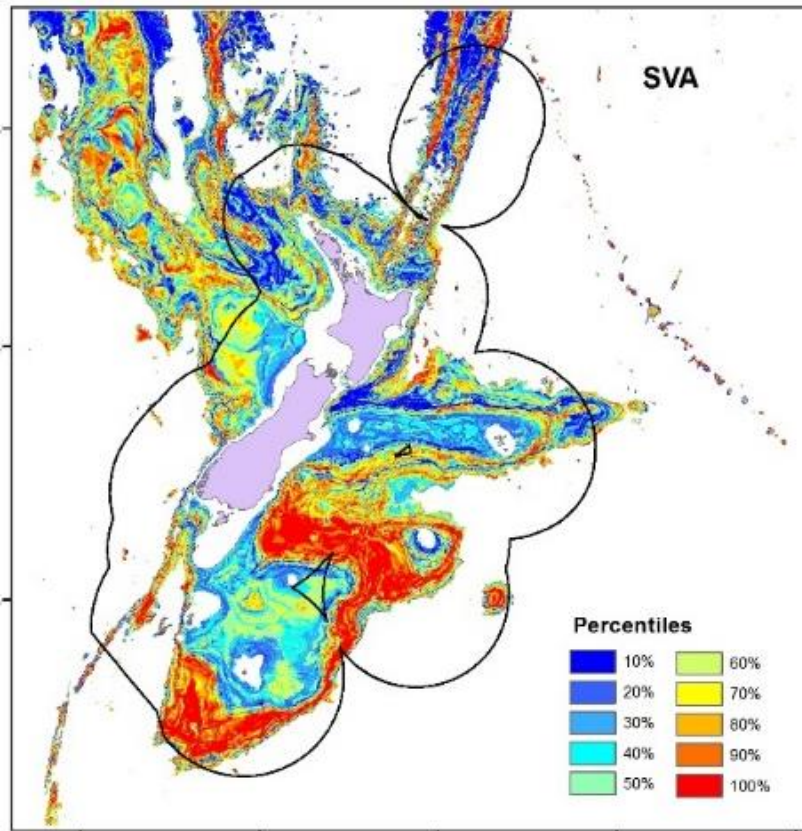
(Anderson et al., 2016)

*Solenosmilia variabilis*

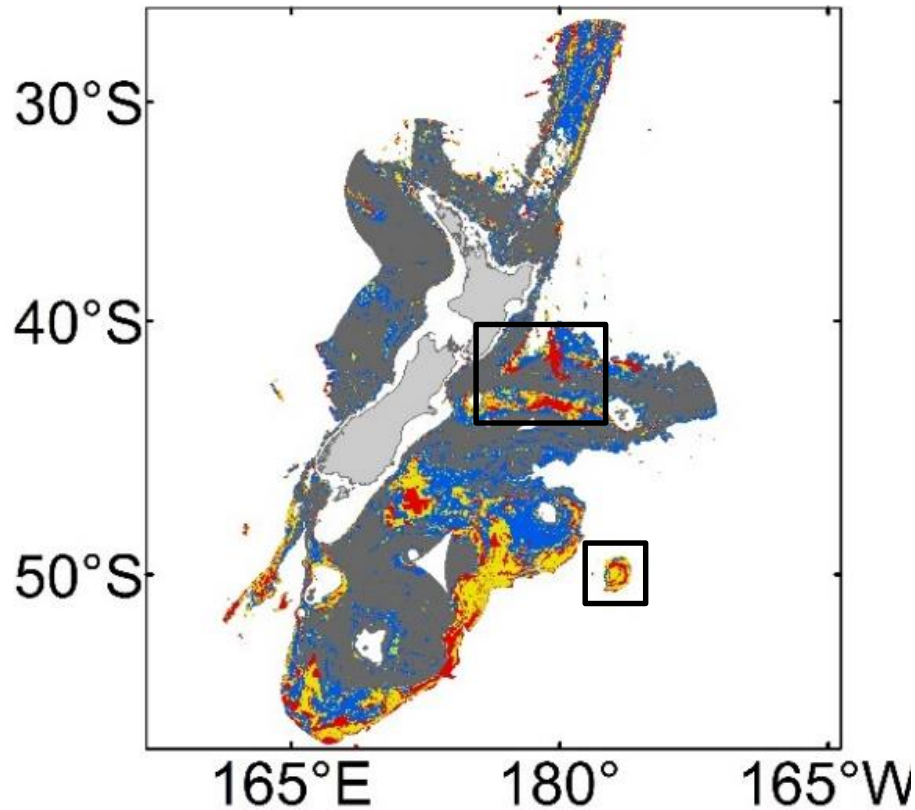


Habitat Suitability Layer

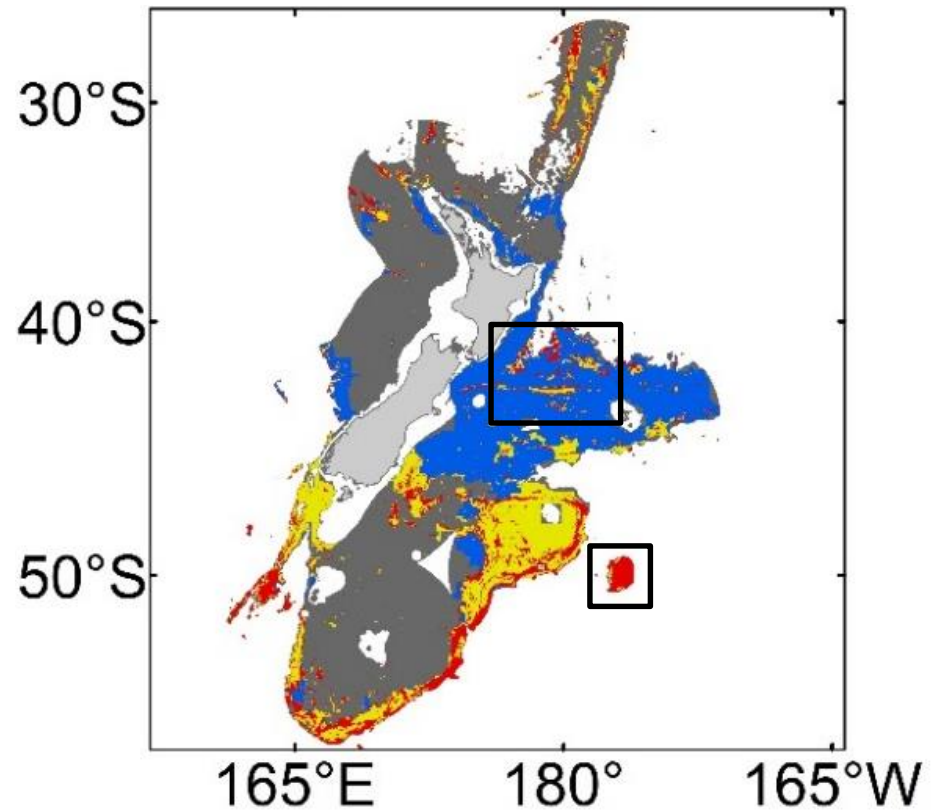
Uncertainty Layer



# Including uncertainty changes prioritization maps



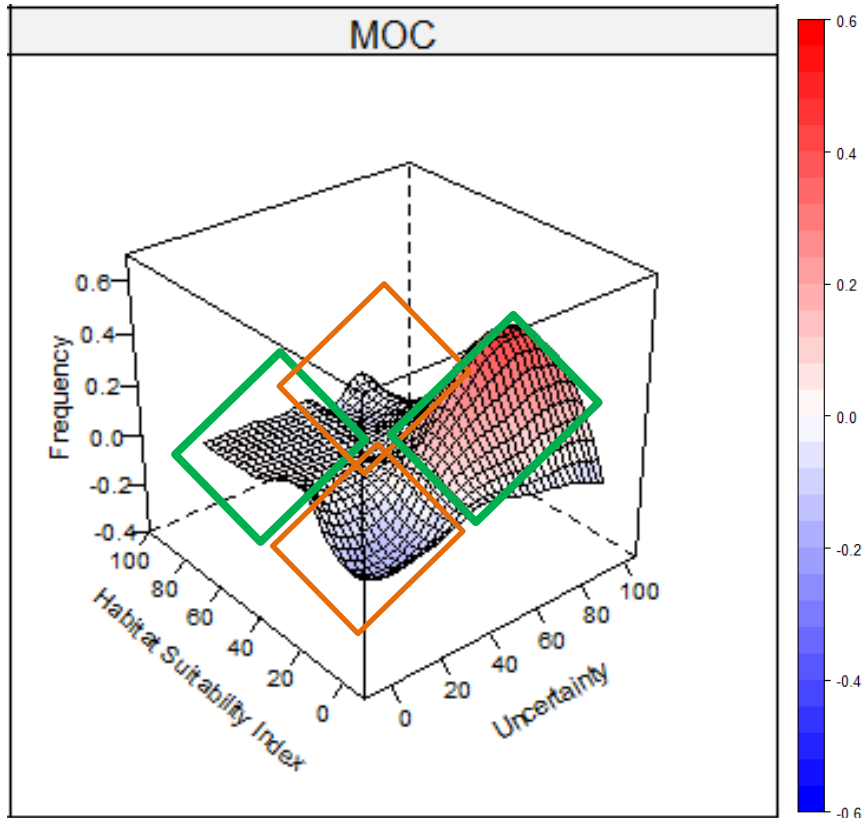
Without Uncertainty



With Uncertainty



# Why does uncertainty matter in conservation planning?



+ with uncertainty

Four scenarios  
(Molanen et al., 2014)

High conservation values and  
Low uncertainty

Low conservation values  
and low uncertainty

High conservation values  
and high uncertainty

No change

+ without  
uncertainty

Low conservation values and  
High uncertainty

*Madrepora oculata*



# Take home messages

- Important to consider uncertainty in biodiversity layers
- ‘High value’ (high HSI, high certainty) cells prioritised regardless of weighting
- Including uncertainty drops cells with high certainty of low HSI (ie drops known ‘low value’ areas)
- Important to understand how much ‘high value’ HSI exists for predictive models

# Thank you!

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- MBIE Vulnerable Marine Ecosystems
- Ministry of Primary Industries/SPRFMO, current contract: SEA2016-22