

Supplementary Information - The right tools for the job: considerations for the implementation of an ecosystem-based management approach for marine ecosystems

Table S1 Definitions of decision tree considerations presented in Figure 2 (adapted from information presented in Clark *et al.* [1] and Blackett *et al.* [2]).

Consideration	Definitions
Complexity	System complexity; number of stressors, response variables, etc.
Low	Single stressor, single response.
Medium	Multiple stressors or responses, no interactions or feedbacks.
High	Multiple stressors or responses, interactions, indirect effects.
Very high	Multiple stressors and components, feedbacks, interactions, indirect effects.
Knowledge type	Type of knowledge that can be used.
Quantitative	Numerical values.
Qualitative	Descriptive data, e.g. expert opinion, principles, social surveys.
Mātauranga Māori	Māori knowledge – the body of knowledge originating from Māori ancestors, including the Māori world view and perspectives. Māori creativity and cultural practices.
Multiple	A combination of knowledge types (mātauranga Māori and at least one of: quantitative and qualitative data; semi-quantitative).
Information requirements	Amount of available information.
Low	Not much information exists or is available, limited knowledge of system or case-study area.
Medium	Some information or knowledge of the system/study area exists, including e.g. local knowledge, (limited) monitoring data or data from experimental studies, not location specific/for all components.
High	An abundance of information exists to work with, including extensive spatial or temporal survey/monitoring data, spatial data layers at high resolution, local knowledge and/or mātauranga Māori.
Outcomes	Number and types of components included (ecological, social, economic, cultural etc.).
Low	Single component (1). One type of value.
Medium	Multiple components (3-4). One type of value.
High	Multiple components (3-4). Multiple types of values.
Time/cost to implement	Ease of implementation, cost or time, expertise required.
Low	Simple method, low cost and time (e.g. within a week), low expertise/skill required.
Medium	Moderate time/effort to implement the method (e.g. weeks-months), some expertise/skill required.
High	Expensive or time consuming, needing specialists.
Interpretability	Ease of interpretation of risk assessment outputs.
Easy	Understood by a lay person.
Moderate	Understood by a lay person if the outputs are explained.
Hard	Expert/technical knowledge required to understand the outputs.

Supplementary Information References

1. Clark, D. E., Gladstone-Gallagher, R.V., Hewitt, J. E., Stephenson, F. & Ellis, J. I. Risk assessment for marine ecosystem-based management (EBM). *Conserv. Sci. Pract.*, **4**, e12636; 10.1111/csp2.12636 (2022).
2. Blackett, P. et al. *Understanding and communicating risk and uncertainty | te tūraru me te haurokuroku in marine management*
<https://www.sustainableseaschallenge.co.nz/tools-and-resources/understanding-and-communicating-risk-and-uncertainty-guidance/> (2023).