Research Proposal Template

A. PROJECT TITLE:

Trialling EBM

B. PROJECT TEAM

Project Leader:	**Major Investigators:**
Judi Hewitt, NIWA *PO Box 11 115, Hamilton* *j.hewitt@niwa.co.nz* *07 8561751*	*Paula Blackett, NIWA,* *Carolyn Lundquist, NIWA,* *Chris Cornelisen, Cawthron* *Simon Thrush, University of Auckland* *James Whetu, Whetu Group*

C. ABSTRACT

This project will trial EBM within the Tasman Bay - Golden Bay case study area. The project will identify specific topics in conjunction with councils/ministries and iwi/hapu involved in co-governance in the area, government departments, industry and community groups. The topic(s) selected by this process will be worked though using lessons, research and outputs provided by the other projects within the Challenge. Where necessary, specific sections of work needed to help will be identified and will lead the development of other projects. This project will also be used to provide context and linkages for all the other major projects that are not otherwise specifically utilised in the trial process.

By the end of the 2-year project, we hope to have:

- Identified the route and networks required for the topic-related management
- An understanding of how best to apply EBM and the participatory processes required in the case study area, including the identification of barriers to EBM implementation.
- Demonstrated a variety of management tools from the EBM Managed Seas toolbox; capacity building in public use of these tools and lessons to the Challenge on the effectiveness of these tools within the EBM process, by June 2019.
- Contributed to the development of Stage II Plan.

D. RELEVANCE TO CHALLENGE OBJECTIVE

In essence, this project is integral to the Challenge's focus of development of an ecosystem based approach to the management of our marine resources as it will provide

- a testing ground for research and tools developed in the other projects

- strategic refinement of ideas and needs
- a collaborative ground for interactions between the other projects to take place and
- a case study of stakeholder and Maori engagement in the development and implementation of EBM.

E. INTRODUCTION

The case study area encompasses pristine to degraded estuaries and expansive bays that are strongly influenced by riverine inflow and oceanic exchange and has a collapsed scallop fishery. It has an important existing marine economy based on fishing, aquaculture, recreation and tourism that has potential for significant growth. The area is affected by multiple, overlapping stressors that operate over a variety of spatial and temporal scales. These include direct physical disturbance of habitat and the transport and resuspension of land-based sediments, nutrients and contaminants. There is thus a number of topics that EBM could help resolve.

Our assumption is that the practice of EBM in New Zealand must involve Treaty Partners, decision-makers, and stakeholders. In particular, any trial of EBM cannot usefully take place unless the trial is accepted and welcomed by those with governance/management responsibilities including iwi, and Tasman and Marlborough District Councils and Nelson City Council, the Ministry for Primary Industries, and the Department of Conservation. In effect, we will be testing the assumption that co-governance and co-design are desired by the community, stakeholders and those holding management authority.

Tasman District Council (TDC) has management responsibilities within the area and have worked productively and closely with iwi on freshwater management. For this reason, we approached TDC and local iwi to ask whether there is a topic that they would welcome Sustainable Seas involvement in, with the hope that we could try to extend this co-management/co-governance collaboration into the marine space with this project. This consultation identified the potential for TDC, Nelson City Council, Tiakina Te Taiao and iwi from the Golden Bay area to be project partners and for the following themes to develop the project around:

- Managing the health of the subtidal benthic environment of the bays;
- Understanding the degradation of local fisheries, including the scallop fisheries
- Considering land-sea management relationships

The project will follow the framework outlined below:

- A workshop with an equal number of iwi and local management agencies (including but not limited to TDC and Tiakina Te Taiao) and project researchers to
    - Refine the topics around agreed outcomes and identify which aspects Sustainable Seas will be involved with;
    - negotiate a working communication structure and a strategy for participation of project partners and other stakeholders, including the invitation of other stakeholders into the process and determination of the level of their involvement;
    - and begin the ca programme of work with clear and agreed on objectives and outputs for the period up to end June 2019. This will be continued by a series of workshops and working groups throughout the project duration.
- Division of the work programme into:
    - work that SS projects have already planned that can now be conducted within the case study area, associated with this project (for example trial of the framework and principals for use in decision making developed in project 2.1.1) ;

- work that is already planned that can be fed context from this project (for example the social license to operate project (1.2.1)); and
- unplanned work that would be required to solve the topics. Studies will be prioritised and sources of funding from within government agencies and Sustainable Seas funded and aligned projects sought.

The proposed topics and their refined themes are unlikely to be solved within the two-year time frame of this project. However, discussions to date suggest that TDC at least feels that a longer-term collaborative and participatory structure could be built for ongoing marine management in the case study area in the time period and SS feels that a number of useful lessons about how to utilise EBM and what types of tools are useful will be learnt for use in Stage 2 of the Challenge in other areas of NZ.

F. AIMS

- Build a longer-term collaborative and participatory structure built for ongoing marine management in the case study area
- Development and validation of specific tools/processes that allow decisions to be made in a transparent manner, and can be understood by stakeholders
- Identification of underpinning science required to make decisions around the refined topic as well as potential funding sources for that science
- Collaborate with the Tangaroa Project He Poutokomanawa to ensure that iwi issues related to kaitiakitanga are incorporated
- And more generally build understanding of:
    - Internal mechanisms that work (or don't) for engaging with end-users
    - Obstacles or enablers to adoption of EBM by diverse end-users (including in central government)
    - How best can co-learning, Vision Mātauranga and EBM be fully utilised, incorporating cultural, economic, social and environmental values?
    - Which elements are helpful within a fully integrated programme of EBM to achieve sustainability and meet Māori and stakeholder aspirations?
    - How EBM in the case study area can inform applications in other regions?

G. PROPOSED RESEARCH

This project links across all Challenge Programmes and many of the projects (especially the negotiated projects). In summary, within the case study area, it will trial participatory processes and our understanding of social licence developed in Our Seas, and incorporate research in Valuable Seas and Tangaroa to assess the potential effects of human activities (including management strategies) on values, the local economy and Māori. It will incorporate information from Dynamic Seas about thresholds and cumulative impacts, and how connectivity may extend impacts of human and natural stressors. This project will utilise and further develop frameworks and tools in the Managed Seas programme to incorporate ecosystem dynamics in whole of ecosystem models, incorporate risk assessment and uncertainty, and balance trade-offs between different values and aspirations.

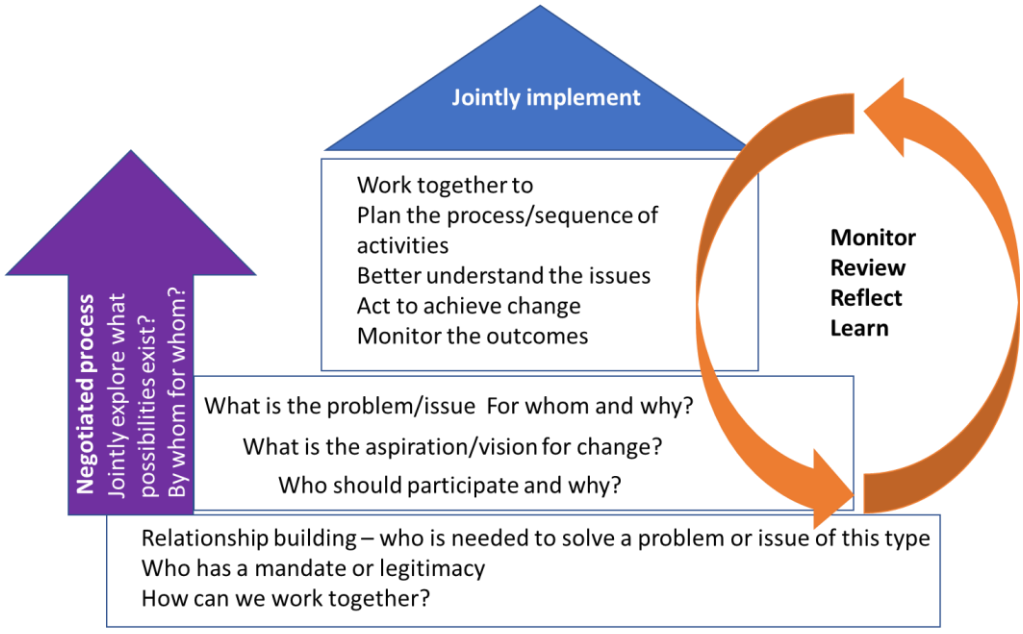
The case study area in phase 1 of the Challenge is the Tasman and Golden Bays, which is where this project will take place. This region encompasses pristine to degraded estuaries and expansive bays that are strongly influenced by riverine inflow and oceanic exchange and has a collapsed scallop fishery. It has an important existing marine economy based on fishing, aquaculture, recreation and tourism that has potential for significant growth. The area is affected by multiple, overlapping stressors that operate over a variety of spatial and temporal scales. These include direct physical

disturbance of habitats by fishing and storms and the transport and resuspension of land-based sediments, nutrients and contaminants. Closures of shellfish harvests are frequent (in some cases semi-permanent) and industry expansion, including the rehabilitation of degraded fisheries, appears compromised by large-scale change in ecosystem function.

Importantly, iwi, stakeholders and management agencies already have a forum for engagement (Nelson Biodiversity Forum which includes representatives of Nelson City Council, some but not all of the iwi (e.g., Ngāti Kuia, Ngāti Tama, Ngāti Kōata) and several community groups). Tasman District Council (TDC) are ready to engage with us in a trial of EBM around the topic of health of the benthic environment of the Bays, TDC have worked productively and closely with iwi on freshwater management, and the topic proposed by TDC overlaps strongly with concerns raised by iwi and other stakeholders in preliminary engagements (scallop (and other fishery) decline & restoration, catchment management impacts to marine space). Frank Hippolite of Tiakina Te Taiao has confirmed that the above topic together with the related topics of degraded fisheries and how land management should be incorporated into understanding and managing impacts on the coast are all of importance to iwi. Finally, MPI has just begun a process for reviewing science and management issues related to the Southern Scallop fisheries (workshop held 30th March 2017) and the Future of Our Fisheries TAG has identified the need for fisheries management to move into EBM.

At present a full research plan and methods for this project (Trialling EBM) cannot be presented as the work (being an EBM trial) needs to be negotiated and co-developed. Instead, presented below are the processes that will be followed, the expected linkages between projects within the Challenge and the anticipated outputs related to the Challenge.

The process that will be followed is illustrated in figure 1. However, it is important to note that the research team does not have the mandate to implement any agreed actions. Implementation will occur at the discretion and direction of the project partners beyond the life of this project.



The preliminary focus of this project will be to build the relationships necessary to create strong foundations for the next two years. To begin with the team will engage with TDC and local iwi (via workshops, small group discussion) to open dialogue around what the project could achieve and work collectively to establish a shared project vision This is necessary given both the governance

role of Māori in NZ society and the 7 principles of EBM espoused by the Challenge. At this stage also a set of stakeholders to be engaged in the process will be co-selected (ranging from local/central government agencies e.g., (Nelson City Council, MPI), industry (e.g., Aquaculture NZ, scallop fisheries), and community groups (e.g., Friends of Golden Bay). As this discussion evolves other participants could potentially be included. Next, a communication and participation discussion document, developed by the Participatory Processes project (Our Seas), will be presented to stimulate initial conversation and guide the negotiation regarding how the process could proceed.

It is anticipated that the process will involve a series of facilitated workshops, that will include introduce and manage conversations regarding;

- The scope of the project to identify what can and cannot be done by the project (both by itself and in conjunction with other Sustainable Seas projects),
- Discussion around how the group will organise and moderate itself
- The expectations, desired outcomes and vison of the primary partners and other participants
- How participants understand the problem/ issue and what are the current and future impacts and implications from an environmental cultural social and economic perspective.
    - What is the current state of science and knowledge and what tools can help to understand and explore future possibilities. What tools are missing and what tool might be useful in the future
    - What future possibilities exists that are consistent with the values, aspirations of the group.

The answers the first three questions will be documented as part of an agreement between the parties while initially will be agreed upon by October 2017, will be flexible and iterative. We envisage that the work programme itself will form into three major streams.

Work stream 1. This is comprised of Challenge projects already planned that will now be conducted within the case study area, associated with this project. At this stage it seems likely that this will consist of the following, although there will be discussions around this, particularly during the yearly strategic reviews of project milestones:

Participatory processes Project 1.1.1

From May 2017, P1.1.1 will be carried out in conjunction with CP2.1 (Milestone 8 to 13) with CP2.1 providing a case study and a platform for trials

Valuation projects 2.1.1 and 2.1.2

Development and validation of the valuation framework, P2.1.2, over the life of CP2.1.

Findings from 2.1.2 on values and how they should be considered (M3.7 embedded (sept-Dec 2018) and M4.2 and 4.3 (Jun-Oct 2018) will be reported on in CP2.1 and trialled for use

Governance

How are decisions made? Who makes them? CP2.1 will link with the IF project on "Cumulative Effects" and with CP1.2 "How can EBM be incorporated into policy and

management". Learnings from CP2.1 will be used to direct attention to specific issues in these two projects

Bio-physical research

CP2.1 will receive information from Project 2.1.3 (Ecosystem Services and Impacts, M3.2 (Dec 2018)) and will feed information back to the project for use in M4.4 (mar 2019)

Similarly, CP2.1 will receive information from Dynamic Seas projects 4.1.1, 4.2.1 and 4.2.2 on work done in the Tasman/Golden Bay areas. Input from CP2.1 will help focus the final stages of Project 4.2.1 "Tipping Points".

Information from IF Project 2.2.2.3 "Open for business" and IF Project "Estimating historic effects from sedimentation and fishing, Nelson Bays" will be used to develop scenarios to test in CP2.1.

Economy

CP2.1 will be included in the mapping of the blue economy conducted by Project 2.2.1 and provide information for the Possibilities centred Integrated model building and field testing (Milestones 4 and 5).

Tools and models

CP2.1 will direct scenario and model developments in Managed Seas project 5.1.1.

It will both trial and direct scenario and tool developments in Managed Seas projects 5.1.2 and 5.1.4.

CP2.1 will also be used as a case study for Project 5.1.3 "Risk assessment procedures"

Work stream 2. This is comprised of Challenge projects already planned that can be contextualised by this project. These are likely to include at least the following, and again iterations between information flowing from this project will be included in the yearly strategic reviews of intended milestones (and their timings) for these projects:

- Our Seas
    - Project 1.2.1 Social license to operate Milestones 3.1 (due April 2017) and 3.3 (due Dec 2017)
    - Project 1.2.2 Marine socio-ecological systems Milestones 4.1 (due Mar 2018) and 6.1 (due Sep 2018)
- Valuable Seas
    - Project 2.1.2 Assessing values, Milestones 4.2 and 4.3 (due Jun-Oct 2018)
    - Project 2.2.1 Blue economy Milestones 4.1 (due Mar 2018), 5.1 (due Sep 2018) and 5.2 (due Mar 2019)
- Dynamic Seas
    - Project 4.2.1 Tipping Points Indirect links by providing input to research and model needs and using from output Milestones 6.2 (due Mar 2018) and M8.3 (due Dec 2018)
- Cross Programme project CP1.2 Future EBM frameworks (Milestones yet to be decided). CP1.2 is likely to be of particular importance and will need to be responsive to needs and problems identified by this project.

Work stream 3. Identification of previously unplanned work that would be required to solve the topic(s). Studies will be prioritised and sources of funding from within government agencies and Sustainable Seas funded and aligned projects sought. This project will fund two to three short-term (1 year or less) highly prioritised studies where other funding sources cannot be found.

Outputs related to the Challenge:

- An understanding of how best to apply EBM and the participatory processes required in the case study area, including the identification of barriers to EBM implementation by June 2019.

- Determination of likely impacts of the multiple activities, rights and interests present in the Tasman and Golden Bay areas on ecosystem services and the values held by the communities and hapū of the area and evaluate the potential for further development of marine resources, by June 2019.

- Demonstration of a variety of management tools from the EBM Managed Seas toolbox; capacity building in public use of these tools and lessons to the Challenge on the effectiveness of these tools within the EBM process, by June 2019.

- Feedback to the development of Stage II Plan, by June 2019, including analysis of likely differences between the processes and successes in this case study area and other regions/topics of interest.

H. RESEARCH ROLES

Researcher	Organisation	Contribution
Judi Hewitt	NIWA	Project leader, co-ordinator
Rich Bulmer	NIWA	Ecological analysis
Paula Blackett	NIWA	Participatory processes and governance co-ordinator
Simon Thrush	UoA	Sub-tidal ecological interactions and impacts, shellfish restoration
Jim Sinner	Cawthron	Trial of valuation framework and principals
Aneika Young		He Poutokomanawa researcher to facilitate flows between the two projects
James Whetu	Whetu Consultancy	VM coordination and development of kaupapa science projects
Kelly May	NIWA	Communication and support in the conversation with iwi about Science and SS Tools
Naomi Simmonds		Participatory Tools with a focus on supporting facilitation with Maori
Chris Cornelisen	Cawthron	Case study area/integrated management expert
Carolyn Lundquist	NIWA	CP1.2 linkage and Our Seas coordinator, ecosystem modeller and conservation expertise
TBC	Iwi	Mana Whenua coordinator, liaison and writer

I. LINKAGES AND DEPENDENCIES

Linkages to projects within the Challenge are outlined in section G above.

J. RISK AND MITIGATION

Major risks centre around

- Not gaining traction with management agencies. A stakeholder meeting held by Managed Seas highlighted a number of topics that relate well to the ones identified by TDC and iwi (including declines in scallop fisheries, impacts of land-based industry on the Bays, removal of habitats and decline in biodiversity). TDC sees this topic as presenting an opportunity to have a wider discussion about ecosystem based management, the legislative regime and stakeholder engagement as they feel that the management of fisheries is intricately linked to the health of the benthic environment. MPI is initiating work on scallop management
- Not being able to link to Māori co-governance organisations. He Poutokomanawa researchers have indicated their willingness to interact with the project around identifying aspirations, values and topics. The topic raised by TDC links well with topics raised by initial engagements with iwi (Scallop (and other fishery) decline/restoration and Catchment management impacts to marine spaces).
- Not managing partner expectations. TDC recognise that this topic is complex and is likely to require long term management to address. However, they feel that any bio-physical research and tools that could assist with future management would be beneficial. We will have to work carefully to ensure that this limited optimism is accepted by other stakeholders.
- Inability of the Challenge to bring together different projects across programmes & disciplines to deliver integrated outputs. However, the Challenge is working hard to produce the required linkages, discussions with project leaders demonstrated that most knew and were working with at least 3 projects that were highly related and the majority of the project leaders were selected for their demonstrated ability to integrate their findings.

K. ALIGNED FUNDING AND CO-FUNDING

At this stage, there is no committed co-funding external to Sustainable Seas, apart from people hours (e.g., TDC, DOC, MPI, MfE are all likely to send representatives to meetings). However, it is likely that some co-funded projects will arise with MPI (e.g., scallop survival along environmental gradients) and TDC (building of sediment source library).

L. VISION MĀTAURANGA (VM)

This project will address commercial, environmental, kaitiakitanga and governance interests and in doing so contribute to increased health and social wellbeing. It will acknowledge the role that Māori have in governance within NZ, the role of local iwi/hapū in kaitiakitanga and the fact that Māori are part of New Zealand at all levels from being iwi/hapū to being stakeholders, part of community groups and the public.

Māori knowledge of the environment and the multiple ways to manage it will be key to this project. The desire to integrate Māori and Māori concepts into EBM is seen by the Challenge as an important step for New Zealand to take ownership of EBM turning it into a New Zealand process that can be valued and created by communities and decision-makers.

We plan that within this project, James Whetu will be able to engage with kaupapa Māori researchers to identify specific research, science, and tools that could support aspirations of Māori communities within the area. The project team will also have one researcher from a Tangaroa project on it. Local iwi/hapū representatives will be partners in the co-design and oversight of the project and participate in working groups.

M. CONSENTS AND APPROVAL

No marine consents or ethics approvals are required

N. DATA MANAGEMENT

Any data collected or analyses conducted specifically by the project will be saved in the Sustainable Seas data space. As most data will be collected in conjunction with other projects or partners, their data arrangements will take priority unless they prefer this project to take responsibility for the data.