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11 March 2016

Submission on *A New Marine Protected Areas Act* consultation document

This submission is made on behalf of the membership of the New Zealand Marine Sciences Society (NZMSS). It is made in good faith in my role as President of NZMSS and in accordance with the Code of Ethics and Rules of the Royal Society of New Zealand.

NZMSS does not support the proposed legislation in its current form and the Society's reasons are detailed in our submission below. In addition, the Society wishes to be heard in respect of this submission.

Please contact me at the email address provided below for any further information regarding this submission.

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NZMSS Submission on *A New Marine Protected Areas Act* consultation document

The New Zealand Marine Sciences Society

The New Zealand Marine Sciences Society, known as "NZMSS", was formed in 1960 as a constituent of the Royal Society of New Zealand, to encourage and assist marine science and related research across a wide range of disciplines in New Zealand and to foster communication among those with an interest in marine science.

NZMSS is a professional science body and a non-profit organization that provides access to and within the marine science community. We identify emerging issues through annual conferences, annual reviews, a listserve and our website http://nzmss.org/. NZMSS membership covers all aspects of scientific interest in the marine environment and extends to the uptake of science in marine policy, resource management, conservation and the marine business sector. We speak for members of the Society on matters of interest on marine research in New Zealand and we engage with other scientific societies as appropriate.

Our submission is consistent with the Royal Society of New Zealand Code of Ethics and Rules, in particular principles 2.1 Integrity and professionalism, 4.1 Compliance with the law and relevant standards, and 10.1 Protection of the environment (www.royalsociety.org.nz/organisation/about/code).

Submission

The Society's submission is arranged as follows:

- Summary of our submission
- Comments on the document by section, including recommended changes to the proposed legislation.

Summary

1. The NZMSS does not support the proposed legislation in its current form.
2. The Society strongly supports no-take marine reserves. It also supports species-specific sanctuaries although existing marine mammal sanctuaries are not MPAs and should remain within the Marine Mammals Protection Act 1978. The term "Habitat" reserves is proposed to replace the category "Seabed" reserves. Habitat reserves are supported as a lower level of protection (than marine reserves). However, before any areas are transitioned into the new regime as "habitat reserves," they should be carefully assessed against criteria addressing the type and condition of the biodiversity. Refer to pages 6 & 8 of our submission for details on this point.
3. The Society considers that new MPA legislation should apply to the **Exclusive Economic Zone (EEZ) and the Extended Continental Shelf (ECS)** as well as the Territorial Sea (TS). This is because much of New Zealand's marine biodiversity occurs in the EEZ & ECS. The TS comprises only 3% of the combined area of the EEZ, ECS and TS. Refer to pages 4-5 of our submission for details on this point.

4. The NZMSS does not support the inclusion of recreational fishing parks (RFPs) within the new MPA regime. RFPs are primarily a fisheries allocation instrument (recreational versus commercial fishers) and it is more appropriate they are managed using the Fisheries Act since recreational fishing parks can already be established through this legislation. Refer to pages 7-8 of our submission for details on this point.
5. The Society considers that the new MPA legislation should have a purpose that is to protect and restore marine biodiversity and provide processes that will enable the creation of a network of marine reserves and supporting MPAs. Refer to pages 5, 6 & 8 of our submission for details on this point.
6. There is incomplete identification of issues and options associated with the framework and criteria that will be used to establish and assess the adequacy of a network of marine protected areas. Refer to page 9 of our submission for details on this point.
7. There is incomplete identification of issues and options associated with the process for establishing a network of marine protected areas. It is unclear who will be able to be an applicant for individual or local networks of marine protected areas. Refer to page 9 of our submission for details on this point.
8. The discussion document lacks context in that it does not refer to relevant international and national policy (including the Convention on Biological Diversity (CBD), the 10% Aichi MPA target and NZ Biodiversity Strategy). In addition the rationale for the particular package of measures selected is missing. Refer to pages 4 & 6 of our submission for details on this point.
9. The discussion document lacks sufficient detail on how the different types of MPAs will be managed. There is no mention of how research will be provided for or permitted, which is of concern to NZMSS. Refer to pages 10-11 of our submission for details on this point.
10. The Society wishes to be involved in the next steps in the development of new MPA legislation. We would appreciate being informed about the next steps and their timing once submissions have been analysed.

Comments on the document by section

The next part of our submission addresses specific sections of the consultation document using the headings and /or section numbers used in the document. We will answer the questions in the consultation document where they are relevant to the Society as part of our comments.

Message from the Ministers

The Kermadec Ocean Sanctuary (in the EEZ) is supported by the Society. This proposed Sanctuary, in conjunction with the existing Kermadec Marine Reserve, will protect a significant New Zealand marine biodiversity hotspot with its diverse range of tropical, subtropical and temperate species of invertebrates, fish, marine mammals and seabirds. This Sanctuary will also protect a geologically – significant environment with the world's longest chain of submerged volcanoes and the second deepest ocean trench (10km deep)[1].

[1] Ministry for the Environment 2016. A New Marine Protected Areas Act: Consultation Document. Wellington: Ministry for the Environment.

Section 2: The need for a new approach to marine protection

The discussion document describes how a "representative network of marine protected areas" should represent the different habitats in New Zealand's marine environment. To do this the new MPA legislation would need to cover the EEZ & ECS[2] as well as the territorial sea (TS). New Zealand's marine realm, including the Territorial Sea (TS), Exclusive Economic Zone (EEZ), and Extended Continental Shelf (ECS), totals 5.7 M km^2 , an area about 21 times larger than New Zealand's land mass and almost 1.7% of the world's oceans[3]. The TS is only 3% of the combined area of the EEZ, ECS and TS[4]. If New Zealand's network of MPAs is to properly represent the different habitats and ecosystems in New Zealand's marine environment, then the EEZ and ECS must be included in the new MPA regime.

A New Zealand network of MPAs should be comprehensive. It should contain the outstanding, rare, distinctive and special features and ecosystems found in New Zealand's marine environment as well as the representative[5]. An effective network requires appropriate connectivity between marine reserves making up the network.

The Society agrees in principle that it would be useful to reform New Zealand's legislative approach to marine protection. In particular we support broadening the purposes to include biodiversity protection, extending coverage to the EEZ and ECS and providing for alternative processes for progressing MPAs. The existing legislation does, however, contain useful features that should be retained. These features include no-take marine reserves (Marine Reserves Act 1971); wildlife management reserves and wildlife refuges (Wildlife Act 1953); provision for marine mammal sanctuaries in the TS and EEZ (Marine Mammals Protection Act 1978); some protection of specified benthic environments from physically damaging fisheries activities (Fisheries Act 1996 and associated regulations); and restrictive zones and associated provisions (Resource Management Act and its associated policy statements and plans).

The international and national policy context in which this new legislation is being developed has not been properly addressed in the discussion document. This has led to an inadequate identification of issues. The overarching international policy is the Convention on Biological Diversity (CBD).

The Society notes that considerable progress was made on revising the (current) Marine Reserves Act 1971 culminating in a Marine Reserves Bill introduced to Parliament in June 2002. The purpose of this Bill was "*to conserve indigenous marine biodiversity for current and future generations, by preserving and protecting marine communities and ecosystems within marine reserves*[6]". This Bill

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[2] New Zealand's regulatory functions relating to the ECS are restricted to the seabed.

[3] https://www.landcareresearch.co.nz/__data/assets/pdf_file/0005/77045/1_17_MacDiarmid.pdf

[4] The EEZ, TS and ECS total 5,799,171.4km$^{2.}$ The EEZ totals 3,918,557.9km$^{2.}$ The TS is 4.609% of the EEZ. Proportions calculated using figures supplies by MFE and LINZ

[5] New Zealand is committed to – a "representative examples of the full range of marine communities and ecosystems and outstanding, rare, distinctive or nationally important marine habitats" Department of Conservation and Ministry of Fisheries (2005) Marine Protected Areas Policy: Policy and Implementation Plan. Department of Conservation and Ministry of Fisheries, Wellington, New Zealand.25 p. www.biodiversity.govt.nz/seas/biodiversity/protected/mpa_policy.html

[6] Department of Conservation 2002. Marine Reserves Bill 2002: policy background and key issues summary. http://www.parliament.nz/resource/en-

was intended to help implement the marine components of the New Zealand Biodiversity Strategy[7] which was developed partly to fulfil commitments made under the International Convention on Biological Diversity. This Bill (covering both the territorial sea and EEZ) went to the Local Government and Environment Select Committee in October 2002. While several submissions on the 2002 Bill canvassed potential constitutional, legal and technical arguments against inclusion of the EEZ in the Bill, these were largely rebutted in the 2004 Department of Conservation Report to the Select Committee, with the support of Crown Law[8]. There appears to be no significant legal or technical arguments against including the EEZ within revised Marine Reserve or new MPA legislation. The Society notes that petroleum and mining exploration, prospecting and mining licences have been issued for 10.9% of the TS and 16.3% of the EEZ[9] so that should not be a valid reason for excluding the EEZ from coverage under new MPA legislation.

In 2005 the Committee resolved to suspend work on the Bill and in 2012 the Bill was withdrawn[10]. It is now 2016 and the current discussion document proposes a regime, with many aspects still to be resolved, that would apply only to the territorial sea. This spatial scope does not adequately implement the marine component of the New Zealand Biodiversity Strategy because so much of the New Zealand marine environment would be outside of the scope of the proposed new legislation. It is also unclear whether biodiversity protection remains the primary purpose or objective given the discussion document does not address an overall purpose for the Act and the objectives are dominated by process matters and human uses. In contrast to the current Marine Reserves Act 1971, scientific research is not addressed.

Section 3: The proposal: a new approach to marine protection

In contrast to the 2002 Marine Reserves Bill the discussion document does not address the matter of an overall purpose for the new MPA legislation. The NZMSS considers that the purpose of new MPA legislation should be to protect and restore marine biodiversity and provide processes that will enable the creation of a network of Marine Reserves and supporting MPAs that contain representative examples of the full range of marine communities and ecosystems as well as outstanding, rare, distinctive or important marine habitats and features. The network must allow for enough replication of these habitats and ecosystems and be of sufficient size and shape to protect the species and habitats it represents. It must provide measures for the protection of all resident and migratory marine species (including plankton, plants, benthic and pelagic organisms, fish, marine mammals and birds) in our marine environment. The creation of protected areas and species specific protections should follow international best practice.

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nz/50SCLGE_ADV_00DBHOH_BILL4754_1_A48091/0a1589e980d752ac19c8a7615dbef67b302cd047 Accessed 16 February 2016

[7] New Zealand Government 2000. The New Zealand Biodiversity Strategy. https://www.biodiversity.govt.nz/pdfs/picture/nzbs-whole.pdf Accessed 18 February 2016

[8] Departmental Report to Select Committee Feb 2005: http://www.parliament.nz/resource/en-nz/50SCLGE_ADV_00DBHOH_BILL4754_1_A190192/02e30607ee5f4132fd3532883ea0aeafe8d8a24b Accessed 16 February 2016

[9] Figures from New Zealand Petroleum and Minerals 2016 on Crown Minerals Act permits in the TS and EEZ

[10] Select Committee Report to Parliament 12 Dec 2012 http://www.parliament.nz/resource/en-nz/50DBSCH_SCR5684_1/ff6e7baa6375eacb10d6b3a2cf29f31ef6a9a539 Accessed 16 February 2016

The discussion document sets out six objectives. The Society considers that the proposed objectives (section 3.1) do not adequately address: (1) protection and restoration of biodiversity and ecological naturalness; (2) the value of marine reserves for scientific research and education purposes; (3) consultation with the scientific and education sectors; (4) marine protection in the EEZ and ECS. Objectives 2 and 5 are ambiguous and appear to give a greater emphasis to potential alternative economic uses than is appropriate for a marine biodiversity protection statute. The Society considers that those two objectives should be replaced and changes made to the other objectives as follows:

1. *A representative, comprehensive network of marine reserves and additional MPAs is created to enhance, protect and restore marine biodiversity in New Zealand's marine environment* (modification to existing (1))
2. *The natural character of New Zealand's marine environment is protected and restored* (replacement for existing (2) and reinforcing Resource Management Act s.6(a) and New Zealand Coastal Policy Statement 2010 policies 15 & 16)
3. Retain as is
4. Add *national and local science and education sectors* to those that are engaged in collaboration
5. *Undisturbed and restored areas are preserved for research and education purposes* (replacement for existing objective 5 which does not make sense and does not seem appropriate)
6. *New Zealand's international obligations (especially those associated with the Convention on Biological Diversity) in relation to the marine environment are met* (modification to existing (6))

The Society is concerned that the discussion document has not specifically addressed how the new MPA legislation will fulfil New Zealand's international obligations, especially the Convention on Biological Diversity and the 10% Aichi targets for MPAs. A key part of these obligations is the implementation of the marine component of the New Zealand Biodiversity Strategy. There is also longstanding MPA policy[11].

While not addressed in the discussion document, it is clear that New Zealand still has much to do in addressing its obligations for marine biodiversity protection. A 2015 Ministry for Environment briefing paper to its Minister states: "*We believe that the protection of representative examples of bioregions is the indicator of the effectiveness of New Zealand's marine protection regime. On this basis New Zealand's current marine protection is well below average when compared to international standards and the performance of other countries, notably Australia and the United States*."[12] This situation is a key reason why the new MPA regime must include the EEZ and ECS.

[11] Department of Conservation and Ministry of Fisheries 2005. Marine Protected Areas: Policy and implementation plan. Department of Conservation and Ministry of Fisheries.

[12] Ministry for the Environment 2015. New Zealand's international obligations and comparative progress regarding Marine Protective Areas. Briefing to the Hon Dr. Nick Smith, Minister for the Environment, 18 June 2015, tracking # 15-B-01036

Section 3.2: Four categories of marine protection

The discussion document proposes four categories of marine protection in the new MPA regime (section 3.2). NZMSS supports the inclusion of three categories; marine reserves, species-specific sanctuaries, and seabed reserves. We would however prefer the term "habitat reserve" over seabed reserve. "Habitat reserves" would be at the lower end of the protection continuum. The seabed is automatically included and protected because the organisms need a substrate to grow in/on. Examples of habitat reserves could include mangroves, kelp forest, seagrass bed, bryozoan bed, and seamounts. Such reserves may allow for limited extraction of some organisms (for example some fish species in the water column above) because the primary aim is to protect the habitat.

The Society does not support the inclusion of recreational fishing parks within a MPA regime. This is because such parks focus on reducing/ eliminating commercial catch to provide more fishing opportunities for amateur fishers. It has been clearly demonstrated in studies in New Zealand (Denny and Babcock 2004, Shears et al. 2006, De Buisson 2010)[13] and worldwide (Lester et al. 2008) that partial protection (i.e. allowing only recreational fishing in MPAs) has no benefit for harvested species. Importantly, partially protected MPAs can result in knock-on effects on other flora and fauna, preventing re-establishment of fully functioning 'natural' ecosystems (Langlois & Ballantine, 2005; Langlois et al. 2006).

Research in New Zealand has found that despite the exclusion of commercial fishers and restrictions on recreational fishing, partial closures were ineffective as conservation tools for targeted species (Denny et al 2003; Denny & Babcock 2004). For example, De Buisson (2010) found that snapper populations at the Poor Knights Marine Reserve did not recover when all commercial fishing nets and longliners were prohibited and recreational fishers were allowed partial access. However, following closure to all forms of fishing for a period of ten years, snapper densities had increased 14-fold.

De Buisson also found snapper numbers in the Mimiwhangata Marine Park (no commercial fishing and restricted methods and species for amateur fishing) were not significantly different than those found on adjacent areas of open coast that are open to commercial fishing. He concluded that after 17 years of partial protection snapper were not more abundant or larger inside the marine park. Earlier investigations (Denny & Babcock 2002; Usmar et al. 2003) of reef fish abundance at Mimiwhangata in 2002 and 2003 also found no significant differences in snapper abundances between the marine park and reference locations outside the park. These reports consistently found that reef fish abundance at Mimiwhangata reflected that of typically fished coasts elsewhere in Northland. Further, rock lobster (*Jasus edwardsii*) populations have not recovered since the marine park was established. Shears et al. (2006) found that preventing commercial rock lobster fishing while allowing recreational rock lobster fishing at Mimiwhangata provided little measurable benefit to protecting the rock lobster populations there.

In addition, recreational fishing parks can already be established under the existing Fisheries Act and the Society is of the view that there is no need to make provision for them in new MPA legislation.

[13] The references for the Society's comments on Section 3.2 of the discussion document (especially in relation to recreational fishing parks) are in Appendix 1

Section 3.2 in the discussion document contains the justification for only considering the territorial sea (TS) for the new MPA regime. The document argues that the TS is where there are most conflicts and there is most information. There are also many conflicts in the EEZ, such as trawling impacts on seamounts and sea bird bycatch. Protecting important areas in the EEZ from human impacts would provide opportunities to increase our understanding of the biodiversity in the wider EEZ[14].

The NZMSS is concerned that the establishment of RFPs might restrict the ability to make changes in future, particularly including no take marine reserves or other types of MPAs. For example, the Hauraki Gulf proposed RFP covers a large area with only a very small amount in existing no-take marine reserves. As part of the Hauraki Gulf spatial planning process, Roger Grace (2014) has developed a recommended network of MPAs covering about 10% of the Gulf.[15] It is unclear how these areas (or what is finally agreed) would be treated in the context of a RFP. The Society considers that it should be possible to include more than one protective provision for a location and where there are conflicts between two provisions then the provisions of the higher protective status would prevail. For example the no-take harvest rules of marine reserves would take precedence over those of the wider RFP harvest rules.

The Society considers that the purpose statements in Table 1 of the discussion document for the three categories of protected area should be amended as follows to fully reflect the primary purpose of MPAs - to protect marine biodiversity:

Marine reserve: *To protect and restore areas to their natural state for the conservation of marine biodiversity. These areas will protect and restore areas that are unique and special, as well as sites that are representative of the full range of marine ecosystems and features*.

Species-specific sanctuaries: *To and protect and restore populations of one or more named species by providing spatially-bounded restrictive tools that protect a species in the marine environment and in any land or freshwater habitats they may use.*

Habitat reserve: *To protect and restore specified habitats by restricting activities that could adversely affect the seabed, the habitat forming biota and water above it.*

The Society would support the three categories of MPA (marine reserve, species-specific sanctuaries and habitat reserves) being managed by the Department of Conservation which already has an extensive national network of facilities and staff with considerable experience in managing different types of protected areas (including those associated with the marine environment). We are also of the view that the management of RFPs would most appropriately be by the Minister of Fisheries/ Ministry of Primary Industries.

Section 3.3: Economic uses of marine protected areas

The Society would be concerned if all MPA applications required an applicant to provide an independent economic assessment (section 3.3) in all cases. This will most likely be very onerous

[14] A number of "Important Bird Areas" (IBAs) have also been identified in New Zealand's EEZ and ECS. Refer to the report, "*New Zealand Seabirds: Sites at Sea, Pelagic Extensions, Pelagic Areas*" (Forest & Bird, 2014).
[15] Grace R 2014. Sea-sketch draft Hauraki Gulf MPAs. A discussion document for the Biodiversity and Biosecurity Roundtable of the Marine Spatial Planning Process for the Hauraki Gulf Marine Park

and impact on the ability of community and other organisations (including NZMSS) to propose MPAs. We are assuming that scientific and educational organisations may be interested in applying for a MPA and some proposed MPAs, such as a sea-grass, mangrove or mussel bed reserves, may be small. In such cases it would seem more appropriate that such a report be commissioned as part of the Board of Inquiry or collaborative process (section 4) by the administering agency. Extra funding should be allocated for this. There would, however, need to be a requirement for the scientific justification and associated documentation accompanying any application to be thorough and well-researched.

The Society is concerned about a proposed prohibition on the establishment of an MPA where permits (for prospecting, exploration, or mining) have been issued (unless the permit holder agrees). In our view, the precautionary principle should apply in these situations. It would be more appropriate to delay issuing new permits until the requirements for MPAs have been assessed.

Section 4: How it will work: a new process for establishing marine protected areas

The Society notes that the document does not address who may be an applicant for an MPA. We consider that potential applicants should include scientific and educational organisations as well as community groups, iwi/hapu and central and local government agencies.

The Society considers it important that carefully developed criteria are used in decision-making at each step in the process. This includes: (1) when the lead Minister decides whether an application should proceed to the assessment stage; (2) the collaborative process and Board of Inquiry decision-making; (3) grounds for appealing a decision.

While page 24 states that the "*new MPA Act will ensure a planned approach is taken to the creation of a representative and adaptable network of MPAs…"* the discussion document does not explain how this will happen. It would be useful for the Act or associated regulations or policy to provide guidance on what would constitute a suitable network of MPAs in the marine environment (the TS and the EEZ/ECS).

In addition, new MPA legislation or associated regulations or policy should provide guidance on how the new MPA process will link with other types of protection tools when, for example, a collaborative consultation process results in proposing a package of protection and other marine management tools such as Mataitai, or restrictive zoning under a Regional Coastal Plan. The Society supports proposals for closer alignment of new MPA legislation and Resource Management Act 1991 decisions. In particular, we support the new MPA Act requiring that MPAs in the TS be recognised in regional coastal plans. Given the adverse effects of the increased nutrients and sediment runoff from catchments on marine environments it would be useful for existing and (proposed)[16] MPAs to be considered when making decisions on the policies and rules in all regional and district plans as well as resource consent applications.

The discussion document proposes that the new Act will allow for periodic review of new MPAs. Such a provision would not apply to the existing MPAs unless already provided for. The Society would accept a review process where this is built into the establishment of a particular reserve. We

[16] A specific proposal would be one that has formally entered either a collaborative or Board of Inquiry process.

would not support the review being triggered by "particular events" such as the emergence of new technology or discovery of a new resource as described on page 25 of the discussion document. Some of the scientific and educational benefits of MPAs arise from the persistence of MPAs over time. If MPAs can be reviewed because of unknown or unforeseen events this will lead to even more scientific effort having to be put into the retention (as well as the establishment) of particular MPAs. Where there is a built-in review provision the Society urges that the review period be based on good science (such as the life span of a particular organism of concern) or a minimum period of 25 years (generational review period as sought by various iwi).

Section 5: Recreational fishing parks

The Society has already explained its position on these in our comments on section 3 of the discussion document.

Section 6: Implementation

The Society supports the transitioning of existing marine reserves into the new Act with no change in their protective provisions. However, existing marine mammal sanctuaries do not meet international or national criteria for MPAs[17] and should remain under the jurisdiction of the Marine Mammals Protection Act 1978. The existing EEZ spatial coverage for this Act should remain. Wildlife management reserves and wildlife refuges commonly are multi-species protection/ restoration provisions. There is insufficient information available to determine whether any should be transitioned to the new legislation or remain in the Wildlife Act 1953.

Various benthic environments in both the TS and the EEZ/ECS currently receive some protection from damaging fishing methods. It may be appropriate for some of these areas to be transitioned through to habitat (seabed) reserves. However, before this occurs, all such areas should be reviewed to ensure they meet specified biodiversity protection criteria and that the appropriate benthic biodiversity has been adequately protected. Sites that should be reviewed include: Separation Point (adjoining Abel Tasman National Park); Spirits Bay (near Cape Reinga); Wairoa Hard (Hawke's Bay), Otago bryozoans and various seamounts[18].

Monitoring is promoted in the document as playing an important part in the new Act. There needs to be a well-developed, scientifically robust framework for both the initial assessments and subsequent monitoring of change. Proper monitoring requires adequate funding. This is particularly critical for the subtidal marine environment where monitoring can be expensive because of logistical difficulties (e.g. requirements for suitable MSA approved vessels; appropriately qualified divers [with bottom time and depth limitations]; robust remotely operated underwater equipment such as cameras; and the disruptive impacts of adverse weather, swells and sea conditions on monitoring programmes). There also needs to be sufficient funding for the analysis and write-up of monitoring programmes. Monitoring outcomes are likely to be used assess the adequacy of individual MPA

[17] Department of Conservation and Ministry of Fisheries (2011) Coastal marine habitats and marine protected areas in the New Zealand Territorial Sea: a broad scale gap analysis. Volume 1: Report and Appendices 1 to 6. Department of Conservation and Ministry of Fisheries. Wellington, New Zealand. 50p.

[18] For more information see Froude VA, Smith R 2004. Area-based restrictions in the New Zealand marine environment. Department of Conservation MCU Report.

design and management; to assist with assessments of the comprehensiveness of the MPA network; and any reviews of particular MPAs.

Additional: scientific research in MPAs

Willis (2013)[19] found that after a twenty year period of sustained use of marine reserves for university thesis research, the next five years saw a marked decline. One reason given for the decline was a change in university staff. The other reason was the changes to the permitting process implemented by the Department of Conservation which encouraged researchers to redirect studies to alternative unprotected locations. Willis found that no new student research had been completed in Auckland or Northland marine reserves in the previous five years.

The Society would like to see policies and procedures developed under the new Act that do not discourage research in MPAs. Members of the Society would be happy to provide advice when such procedures are being developed.

[19] Willis TJ 2013. Scientific and biodiversity values of marine reserves- a review. DOC research and development series 340

Appendix 1: Limitations of partially protected MPAs- references used

De Buisson, P.R. (2010). Poor Knights Islands Marine Reserve and Mimiwhangata Marine Park Fish Monitoring 2009. Department of Conservation, Whangarei.

Denny, C.M., Babcock, R.C. (2002). Fish survey of the Mimiwhangata Marine Park, Northland. Report to the Department of Conservation, Northland Conservancy. Leigh Marine Laboratory, University of Auckland.

Denny, C. M., Babcock, R.C. (2004). Do partial marine reserves protect reef fish assemblages? *Biological Conservation 116*(1): 119-129.

Denny, C.M., Willis, T.J., Babcock, R.C. (2003). Effects of Poor Knights Islands marine reserve on demersal fish populations. *Department of Conservation Science Internal Series* 142:1-34

Langlois, T.J., Anderson, M.J., Babcock, R.C., Kato, S. (2006). Marine reserves demonstrate trophic interactions across habitats. *Oecologia 147*(1): 134-140.

Langlois, T.J., Ballantine, W.J. (2005). Marine Ecological Research in New Zealand: Developing Predictive Models through the Study of No-Take Marine Reserves. *Conservation Biology 19*(6): 1763–1770.

Lester, S.E., Halpern, B.S. (2008). Biological responses in marine no-take reserves versus partially protected areas. Marine Ecology Progress Series 367: 49-56.

Shears, N.T., Grace, R.V., Usmar, N.R., Kerr, V., Babcock, R.C. (2006) Long-term trends in lobster populations in a partially protected vs. no-take Marine Park. *Biological Conservation 132*: 222-231."

Usmar, N.R., Denny, C.T., Shears. N.T., Babcock, R.C. (2003). Mimiwhangata Marine Park monitoring report 2003, Leigh Marine Laboratory, University of Auckland.