



NEW ZEALAND ECOLOGICAL SOCIETY

Land and Water Management Team
Ministry for the Environment
P.O. Box 10362
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Submission from New Zealand Ecological Society on the Proposed National Policy Statement on Indigenous Biodiversity

The New Zealand Ecological Society (NZES) was formed in 1951 to promote the study of ecology and the application of ecological knowledge in all its aspects. Through its activities, the Society attempts to encourage ecological research, increase awareness and understanding of ecological principles, promote sound ecological planning and management of the natural and human environment and promote high standards both within the profession of ecology by those practicing it, and by those bodies employing ecologists. The NZES publishes the New Zealand Journal of Ecology which is the primary scientific publication in New Zealand for research on indigenous biodiversity in New Zealand. The Society has over 600 members including practicing ecologists and research scientists working within universities, crown research agencies, government departments, regional councils, territorial local authorities, private consultancies and community restoration groups.

The NZES strongly supports the development and implementation of a National Policy Statement (NPS) on Indigenous Biodiversity. Biodiversity is of critical importance to the environmental, economic, cultural and spiritual health and identity of New Zealand as a country, and its continued decline is an erosion of our wealth and future potential. The NPS will provide important guidance and direction to agencies, local government and landowners on the management and protection of New Zealand's indigenous biodiversity. It will also fill a national policy gap between legislation, other national policy statements, and regional and district plans. The NPS will be an important mechanism for fulfilling New Zealand's international and national responsibilities for the protection and restoration of New Zealand's unique indigenous biodiversity.

The uniqueness and importance of New Zealand's biodiversity on an international scale has been widely recognised. Part 1 of the New Zealand Biodiversity Strategy states: "*Isolation is a strong theme of New Zealand's biological and cultural histories.*"

Evolution through a long period of isolation created unique flora and fauna. After splitting off from other continents 80 million years ago, the New Zealand landmass became the stage for the evolution of plants and animals so distinctive that it has been described as the closest scientists will get to studying life on another planet”¹.

A large proportion of New Zealand’s indigenous vegetation and species are found only in New Zealand and this makes NZ unique internationally and recognised as a biodiversity hotspot (one of 34 international biodiversity hotspots)². New Zealand’s indigenous biodiversity, in particular in lowland ecosystems, has been significantly impacted by land use change and the impacts of pest plants and animals. Much of New Zealand’s remaining unprotected lowland habitat occurs on private land. These threatened lowland habitats and ecosystems are not adequately represented on Public Conservation Land, and are increasingly vulnerable to ongoing pressures from surrounding land use.

In this submission, NZES has provided comments and suggestions on a number of aspects of the NPS. As the primary organisation representing professional terrestrial ecologists in New Zealand, the NZES considers itself to be a key stakeholder in the development of an NPS on indigenous biodiversity and would have preferred the opportunity to present our submission verbally to a hearing. However, in-lieu of appearing at a public hearing, the NZES would welcome the opportunity for representatives from the Society to meet with MFE officers to further discuss our submission (please contact the NZES Secretariat at the above email address).

Submission Point 1: Preamble and Application

The NPS discusses in several places the focus of the document on Section 6 (c)³ of the RMA (including in the Preamble and in Section 4 “Application”). While NZES supports the need for guidance and direction on section 6 (c), the protection of indigenous biodiversity requires significantly more than just this section of the RMA. *In order to meet international goals for the persistence of indigenous biodiversity, it is necessary to protect both biodiversity pattern (the full diversity of genes, species, communities, habitats and ecosystems, and landscapes) and the ecological and evolutionary processes that sustain this pattern*⁴. For the maintenance of indigenous biodiversity and the persistence of biodiversity pattern and evolutionary processes it is important for the NPS to address other aspects of Part 5, 6 and 7 of the RMA including:

- *safeguarding the life-supporting capacity of air, water, soil, and ecosystems (Section 5 (2) (b));*
- *avoiding, remedying, or mitigating any adverse effects of activities on the environment (Section 5 (2) (c));*
- *the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development (Section 6 (a));*

¹ Diamond, J. 1990. New Zealand as an archipelago: an international perspective. In *Ecological Restoration of New Zealand Islands*, pp 3—8. Department of Conservation, Wellington

² http://www.biodiversityhotspots.org/xp/hotspots/new_zealand/Pages/default.aspx

³ the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna

⁴ Margules & Pressey 2000; Moritz 2002 – quoted in Walker S, Price R, Rutledge D, Stephens R. T. and W G Lee 2006. Recent loss of indigenous cover in New Zealand. *NZ Journal of Ecology* 30 (2): 167-177

- *intrinsic values of ecosystems* (Section 7 (d))
 - *the effects of climate change* (Section 7 (i)).
- It is noted that the importance of addressing more than Section 6 (c) matters, including ecosystem processes and patterns is also discussed and supported by submission points 3, 13 and 14.
 - Section 4 “Application” of the NPS specifies that the NPS does not apply to the coastal marine area. NZES submits that the NPS should address biodiversity across all ecosystem types, and coastal-terrestrial-freshwater sequences and ecotones. As well as wetlands, the NPS should also cover all freshwater biodiversity, and set out how any overlaps between National Policy Statements will be addressed. Ecotone areas, including wetlands, estuaries and riparian areas, are highly dynamic systems and can contain a high diversity of ecosystem types and species. There is a need to ensure that there are no policy gaps in the protection of ecosystems and species in the margins between terrestrial, freshwater and coastal zones.

Submission Point 2: Matter of National Significance

NZES supports the need to maintain New Zealand’s indigenous biodiversity as being a matter of national significance. It is submitted that maintenance should include preservation and protection, as well as restoration and enhancement. Many ecosystem types (e.g. many lowland forest types) and species (e.g. 38% of indigenous plant species and 40% of indigenous bird species) are at critical levels of loss and threat, and what is left of these threatened habitat types and species is important to protect. The protection and maintenance of these areas requires restoration and enhancement, not just the maintenance of existing extent and state. The protection of threatened and at risk species and habitats needs significant intervention to turn the tide of loss and extinction. NZES submits that the statement in section 5 of the NPS would be strengthened if it included “protection, maintenance and restoration” of New Zealand’s indigenous biological diversity.

Submission Point 3: Objective

- NZES supports the NPS objective of maintaining indigenous biodiversity by protecting areas of significant indigenous vegetation and significant habitats of indigenous fauna. However the NPS through its focus on significant vegetation and habitats does not address other valuable functions of ecosystems and species. These include the role of ecosystem services⁵, ecological processes and patterns including the value of buffers, ecological sequences and ecotones, and ecological corridors and linkages.
- NZES supports the need to recognise the economic, social and cultural well-being of communities and landowners however in many cases the reasonable use of land may be in significant conflict with the protection of indigenous biodiversity. Much of New Zealand’s lowland biodiversity is at a critical level of

⁵ Ecosystem services represent the benefits human populations gain from ecosystem functions. These include erosion control, soil formation, nutrient cycling, filtering and regulation of water flows and regulation of atmospheric carbon (Constanza *et al* 1997, The value of the world’s ecosystem services and natural capital. Nature Vol 387)

loss and under threat from land use and pest plants and animals. A significant proportion of New Zealand's threatened ecosystem types, species and areas of critically reduced habitat (e.g. lowland wetlands) occur primarily on private land. Decision makers in local authorities and agencies should be required to provide regulatory and non-regulatory incentives and mechanisms to ensure protection of these ecosystems (refer to submission point 14, Policy 6).

Submission Point 4: Policy 1

NZES notes that Policy 1 is more of a definition statement than a policy, and that the proposed NPS lacks a policy that gives effect to the objective of protecting areas of significant indigenous vegetation or significant habitat of indigenous fauna. NZES submits that Policy 1 is reworded to capture the intent of the objective of the NPS. Further, NZES notes that the maintenance of biodiversity is dependent on more than just protection of significant areas of vegetation and significant habitats for fauna, i.e. ecosystem services, processes, patterns, ecological linkage areas (as discussed above).

Submission Point 5: Policy 2

NZES supports the intent of this policy including incorporation of the four national priorities into "Policy 2 a-e". NZES has the following comments:

- In the preamble to the NPS it is explained that the NPS does not imply local authorities cannot go beyond the policies supporting maintenance of biodiversity as set out in the NPS. It is very important that the NPS does not restrict councils and agencies that choose to go further than "Policy 2 a-e" to maintain and protect biodiversity at a local and regional level. This includes assessment of significance and ecological value at more more local scales (e.g., ecological district or land environment), and the provision for ecosystem services
- It should be made more explicit in the NPS that "Policy 2 a-e" is a minimal list and not an exhaustive list for identifying significant areas of vegetation and habitats for fauna.

Submission Point 6: Naturally uncommon ecosystems

NZES supports the identification of naturally uncommon ecosystems as significant indigenous vegetation and habitat. It needs to be recognised that there is ongoing research on the nature and extent of naturally uncommon ecosystems in New Zealand⁶. The NPS should not be restricted to only those identified in Schedule 1. Therefore, NZES submits that Schedule 1 and the naturally uncommon ecosystems project and research is referred to within the NPS and that it is made explicit that this research is ongoing and that the schedule will be subject to change. The NPS should also allow for local authorities to identify and address protection of regionally and locally uncommon ecosystem types that are important for the maintenance of biodiversity at a regional and local scale. As NZES has submitted above in Submission Point 5 (in relation to Policy 2) the NPS needs to be explicit that it is only

⁶ <http://www.landcareresearch.co.nz/research/ecosystems/rare/index.asp>

a minimum standard for identifying significant areas of indigenous vegetation and habitats for fauna, and should not restrict councils and agencies that choose to go further.

Submission Point 7: Sand dunes

NZES supports this policy. Sand dunes are highly threatened ecosystems, much reduced from their former extent in New Zealand. Many dunelands, coastal ecosystems and species have been impacted by coastal development and by weeds and pests⁷. Mechanisms for addressing the impacts of coastal development on indigenous biodiversity are urgently needed in regional and district plans.

Submission Point 8: Wetlands

This policy is supported. Wetlands are highly threatened in New Zealand and have been significantly reduced from their former extent. Protection of all remaining sites of all wetland habitat types is important for maintenance of biodiversity. The NPS also needs to address the need for restoration of wetlands to address the excessive extent of loss.

Submission Point 9: Land environments

NZES supports this policy. Ecosystems and habitats in these land environments have been highly reduced from their former extent and are an urgent priority for protection.

- The Land Environments of New Zealand have become a nationally accepted tool to determine representativeness of remaining indigenous vegetation cover. NZES notes that if the intent of 2d is to capture indigenous vegetation or habitat that has experienced a high degree of loss (i.e. threatened habitat type), then the wording of 2d needs to reflect this intention as opposed to describing a tool that may be used to determine proportion of loss. For example, in the Tamaki Ecological District in urban Auckland, less than 5% of the land area remains in indigenous vegetation. Significant portions of this Ecological District however lie outside the land environments that have 20 percent or less remaining in indigenous vegetation cover.
- It is also noted that this policy does not address the protection of large and more extensive ecosystem types in land environments where the extent of remaining indigenous vegetation is greater than 20%. Large, intact natural areas are highly important for the protection of altitudinal and climatic sequences, ecosystem pattern and processes, habitats of threatened species, and act as core habitats for species in the landscape. As NZES has submitted above in Submission Point 5 (in relation to Policy 2) the NPS needs to be explicit that it is only a minimum standard for identifying significant areas of indigenous vegetation and habitats for fauna.

⁷ For example: Sullivan J., S Timmins and P Williams 2005. Movement of exotic plants into coastal native forest from gardens in northern New Zealand. NZ Journal of Ecology 29 (1): 1-10

Submission Point 10: Threatened and at risk species

NZES supports this policy. As NZES has submitted above in Submission Point 5 (in relation to Policy 2) the NPS needs to be explicit that it is only a minimum standard for identifying significant areas of indigenous vegetation and habitats for fauna, and should not restrict the protection of regionally threatened species⁸ through regional and district planning mechanisms.

Submission Point 11: Policy 3

NZES supports ecological criteria that as a minimum include Policy 2a-d. It is important however that recent case law⁹ provides guidance on the development of ecological criteria by councils and that a broader approach to ecological significance rather than a narrow approach is taken. Recent guidance to councils on biodiversity provisions including ecological criteria is provided in the Quality Planning website¹⁰. The New Zealand Journal of Ecology has been an important forum for the debate on ecological significance criteria¹¹.

Submission Point 12: Policy 4

- NZES in general supports the development of schedules of significant natural areas, including the use of methods such as the Protected Natural Areas Programme surveys to identify areas and habitats. However NZES submits that schedules will never be a complete and exhaustive list of all biodiversity in a region or district, and need to be used in combination with other methods (including ecological criteria; zoning of areas of vegetation and habitats). Schedules are also not the only mechanism in a regional or district plan for addressing the protection and maintenance of significant areas. Regional and district plans can utilise ecological criteria in combination with schedules for the identification and assessment of significance of natural areas.
- Schedules can miss out the following: the potential and future ecological value of sites; cryptic or mobile species that are difficult to detect; small and highly fragmented ecosystems and habitats including urban vegetation; ecological processes and patterns; the cumulative value of connections and patterns of sites and habitats. It is also noted that the accurate definition of the boundaries of ecosystems can be difficult because of their dynamic and changing nature..
- NZES notes that mechanisms to ensure indigenous biodiversity is protected, restored and managed into the future are needed, as well as the identification of significant sites.

⁸ For example: Stanley R, P de Lange, E K Cameron 2005. Auckland Regional Threatened and Uncommon Vascular Plants List. Auckland Botanical Society Journal Vol. 60 (2)

⁹ Friends of Shearer Swamp Inc. v West Coast Regional Council (2010);

¹⁰ <http://www.qualityplanning.org.nz/plan-topics/indigenous-biodiversity.php>

¹¹ Norton DA, Roper-Lindsay J 2004. Assessing significance for biodiversity conservation on private land in New Zealand. NZ Journal of Ecology 28: 295-305; Walker S, AL Brower, BD Clarkson, WG Lee, SC Myers, WB Shaw, RT Theo Stephens 2008. Halting indigenous biodiversity decline: ambiguity, equity, and outcomes in RMA assessment of significance. NZ Journal of Ecology 32 (2): 225-237.

Submission Point 13: Policy 5

NZES in general supports the concept of biodiversity offsets. It has the potential to provide guidance and more certainty of outcome. NZES however has a number of comments and concerns with the concept in the proposed NPS which need to be addressed:

- Biodiversity off sets should only be used as the last option. Avoidance of adverse effects on significant indigenous biodiversity should always be the first option, and areas where any adverse effects are not acceptable need to be addressed (e.g. “no go areas”). Many lowland ecosystem types may have been so significantly reduced that any effects must be avoided.
- The concept of no net loss in many cases is not going far enough and will not achieve the need to turn the tide of biodiversity loss. Consideration of the concept of a net gain in biodiversity is needed. For many lowland ecosystem types loss has been significant and to increase viability and extent restoration and net gain is needed.
- The definition of biodiversity offsets contained in Section 3 “Interpretation” has a significant focus on species rather than ecosystems (i.e. diversity of species, population sizes, area occupied by a species). While the definition includes ecological health and functioning of assemblages of species, community types and ecosystems it does not address the loss of ecological processes, connections, extent and cumulative effects. The process of moving a species or a small population out of an impacted area, e.g. native lizards or fish, may be a relatively simple procedure however replacing and recreating a naturally functioning mature ecosystem is not straightforward.
- There can be conflicts in offsetting adverse effects, e.g. planting for riparian ecological values (requiring shade) vs. amenity (requiring low growing species that don’t block sight lines).
- Biodiversity offsets need to address the cumulative effects of any adverse effects on indigenous biodiversity, e.g. wider landscape effects, effects on processes,

Submission Point 14: Policy 6

NZES supports the importance of retaining all remaining indigenous biodiversity, including ecological buffers, corridors, stepping stones, and interconnections between terrestrial and aquatic systems as set out in this policy. These areas can be critical for the protection and maintenance of biodiversity, and of ecological processes and patterns. Indigenous ecosystems in a number of lowland landscapes have been so significantly fragmented and reduced from their former extent that the protection of all remaining indigenous biodiversity in these landscapes is important. NZES submits that the requirement to adhere to this policy should be strengthened. For example, decision makers should be required to develop (rather than consider) regulatory and non-regulatory incentives and mechanisms for the protection of indigenous biodiversity (refer to Submission Points 1 and 5).

Submission Point 15: Policy 7 and 8

NZES in general supports these policies.

Submission Point 16: Schedule 2

As discussed in submission point 13 NZES has a number of comments and concerns about the concept of biodiversity offsets.

- The monitoring and compliance of biodiversity offsets is critical to the success of this concept.
- Offsets need to be enduring and work in perpetuity. Before a resource consent is granted an offset should be required to have reached a certain level of maturity or viability and for ecosystem functions and processes to be in place and managed in perpetuity.
- Experience with offsets such as enhancement planting and bush lot covenanting shows that compliance with council covenants can be low compared to compliance with voluntary private land covenants¹².
- Offsets need to address the importance of ecosystem services, functions and processes which cannot be easily replaced by replanting, and the length of time it takes for the successful establishment of vegetation and habitats.
- There are limits to what can be offset, e.g. lowland ecosystems that have been significantly reduced from their former extent may be very difficult to offset. Avoidance of significant adverse effects should always be the first option, rather than only determining when it is not appropriate. In order to maintain the extent and quality of biodiversity in NZ offsetting significant adverse effects should not be the norm but the exception.
- A landscape approach is supported. Offsets should address wider landscape or catchment impacts and benefits.

Submission Point 16: Interpretation

- The definition of indigenous vegetation needs to be broader. For example, areas of mixed native and exotic vegetation can provide significant habitat for indigenous biodiversity, provide important ecosystem services, and provide buffers and corridors for species¹³.
- Also as noted above the definition of no net loss needs to have a broader focus on ecosystems and cumulative effects, as well as species and populations (refer to submission points 13 and 16).

¹² Initial monitoring of landowner compliance with Rodney District Council bush lot covenants shows that only 27% are in good condition (Rodney District Council Pilot Bush Lot Monitoring Report 2008) compared to 73.9% adherence with QEII covenants (QEII National Trust Statistics 2009)

¹³ Denyer K, B Burns and J Ogden 2006. Buffering of native forest edge microclimate by adjoining tree plantations. *Austral Ecology* 31 (4): 478-489.

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