



Established 1968

New Zealand Freshwater Sciences Society

New Zealand Freshwater Sciences Society

Biodiversity NPS
PO Box 10362
Wellington 6143

To whom it may concern

Re: Submission from the New Zealand Freshwater Sciences Society on the proposed National Policy Statement on Indigenous Biodiversity

The New Zealand Freshwater Sciences Society (NZFSS) is the major society for individuals and organisations with interests in freshwater sciences, management and education in New Zealand. Members include staff from Universities, Central and Local Government, private industry, crown entities, NGOs and private consultancies. Its objective is to establish effective liaison between all persons interested in any aspect of fresh and brackish water research in New Zealand, and to encourage and promote these interests.

The NZFSS through its Executive Committee and wider membership wishes to provide feedback on the proposed National Policy Statement on Indigenous Biodiversity (NPS). As a society we strongly support the development of an NPS on biodiversity and consider it a national priority that this NPS continue to be developed into an effective and operative policy document to ensure a consistent and co-ordinated approach to the protection of New Zealand's unique indigenous biota. However, the society has some specific concerns with regards to:

- 1) how the draft NPS and its policies relate to indigenous biodiversity in **freshwater** habitats
- 2) a lack of a clear outcome focused objective
- 3) the lack of protection afforded to freshwater indigenous biodiversity arising from insufficient guidance within the Policies to inform Regional Councils on implementation of the objective and non-directive language of the draft NPS (e.g. recognise, encourage and promote)
- 4) the use of Schedule 1 in the NPS.

1. Indigenous Biodiversity and freshwater habitats

Of most concern to NZFSS is the lack of any explicit acknowledgment of freshwater biodiversity in the draft NPS. Within New Zealand and globally biodiversity is more threatened in freshwater ecosystems than in any other ecosystem,^{i,ii,iii} so it is essential that explicit reference be made, and mandate be given, to addressing this biodiversity loss. It is also important to recognise unique ecosystem types, communities and species in freshwater environments.

The NZFSS notes that wetlands are specifically mentioned in the draft NPS but there should also be recognition given to the interconnectedness of terrestrial, freshwater and marine environments, i.e., that maintenance of biodiversity in many cases crosses boundaries from one ecosystem type to another and is therefore reliant on the structure and functionality of each. Policy 4 therefore needs to be expanded in scope to recognise a greater level of connectivity of these ecosystems. In this regard NZFSS also sees cross-over with the NPS in Freshwater Management, which is still in development after lengthy consultation, and the operative NPS in Coastal Policy. NZFSS therefore considers it essential that there is alignment between each of the statements (i.e. Biodiversity, Coastal Policy, Freshwater) and that they are brought to implementation stage in a timely manner, for further reasons outlined below.

NZFSS has concerns about the loss of biodiversity in freshwaters of NZ. For example, of the 74 estuarine and freshwater fish, 67% are deemed threatened or at risk, including four taxa in the same nationally critical threat class as the kakapo. Included in the threatened classification are iconic fish species such as giant kokopu, shortjaw kokopu, longfin eel, lamprey and black mudfish. New Zealand has even higher rates of endemism of its invertebrate fauna and freshwater flora, and microbial communities such as those in geothermal areas can also be of biodiversity significance but are not specifically identified or addressed. Furthermore, recent history of invasive freshwater plant introductions such including ‘didymo’ and several species of ‘oxygen weed’, invertebrate invasions, as well as expanding pest fish populations (e.g. destructive koi carp represent 80% of the biomass of fish in the lower Waikato River) indicates that there is some urgency to the development of an NPS on Indigenous Biodiversity. The NPS should explicitly include reference to freshwater habitats and have strong language designed to protect freshwater indigenous biodiversity within the Policies as included in the proposed policy wording below.

2. Policy 2: rewording to include indigenous biodiversity in freshwater ecosystems

Policy 2: includes wetlands but the current definitions in relation to freshwater environments are highly restrictive and potentially exclude lakes, dams, reservoirs, tarns, etc., and the associated biodiversity of open-water freshwater species in these environments. All permanent and ephemeral lakes, ponds, bogs, and tarns, etc, which have open water and maximum depth greater than 0.5 meters should be included in Policy 2, as well as those inland water bodies that are more commonly classified as ‘wetlands’. We propose the inclusion of a clause f in Policy 2 which states something about the breadth and diversity of freshwater habitats as noted above or alternately a comment added into clause e which specifically mentions habitats of threatened and at risk freshwater species.

3. Specific statements and use of language throughout policies

Currently the only objective in the NPS is to ‘promote the maintenance of indigenous biological diversity’. While the NZFSS supports the intent of this objective, its effectiveness or measurability in the absence of a strong statement of national values is doubtful. Its usefulness is further compromised through the use of non-directive language as detailed later in our submission. This uncertainty is likely to lead to variable implementation at a regional scale especially with the current lack of clear policy guidance on how to implement it.

Policy 1: states that significant habitats of indigenous fauna are areas or habitats whose *protection* is important for the maintenance of indigenous biological diversity. This is the only use of the term protection. The policy has apparently omitted all biodiversity that is not

‘vegetation’ or ‘fauna’. That is, the biodiversity of our fungi (mushrooms, toadstools, etc.), micro-organisms (e.g. protozoa, bacteria) and possibly also lower plants (mosses, liverworts, lichens) and algae, would not be included. Many of these organisms form the base of freshwater food chains that support iconic freshwater species within lakes. This omission then flows throughout the balance of the document.

Policy 2: in addition to the comments above, we note that, in addition to LENZ (Land Environments of New Zealand), there are equivalent freshwater environment types recognised that can be used to assess and prioritise freshwater sites for protection.

Policy 3: this policy does not require Plans to incorporate any rules, policies or objectives relating to indigenous biodiversity. This policy will also require Regional Councils to notify a change to regional policy statements, therefore further elevating the need to clarify the issues raised for policy 2 in our submission.

Policy 4: includes no requirement to protect, only for District and Regional plans to identify and list. Again this reinforces the need to clarify policy 2 given the need for territorial authorities to change district plans. Listing sites and habitats may mean exclusion of important areas, for example, habitat including areas such as migratory routes or nursery habitats for fish. This policy and policy 3 do not require the imposition of any rules or policies at the District or Regional level which will protect the listed significant areas. The policy should similarly recognise upstream effects on downstream ecosystems and the cumulative nature of these effects, for example for issues of fish passage, contaminant accumulation and completion of life cycles or organisms across a range of different environments (e.g. eels). Policy 4 therefore needs to be expanded in scope to recognise a greater level of connectivity of these ecosystems.

Policy 5: avoiding, remedying or mitigating the adverse effects of activities is already provided for within the Resource Management Act itself, thus this policy adds no further benefit to indigenous biodiversity and should be discarded. Given the failure of the use of offsetting internationally^{iv,v} and the potential for regional biodiversity loss through offsets provided at distant locations, this policy could be perversely exploited to inadvertently result in further biodiversity loss.

Policy 6: uses the term ‘promote the maintenance of’ rather than the stronger term ‘protect’ and then goes on to use terms such as consider and encourage. Given the state of indigenous biodiversity nationally and internationally, more emphasis on *protection* of remaining indigenous biodiversity is required in the language of these policies. How will decision-makers “support the resilience and viability of populations and species assemblages within identified areas”? The policy also needs to acknowledge that not all habitats are associated with vegetation. For example 6c encourages the ‘retention of existing vegetation’, however for freshwater ecosystems the habitat is often the water or un-vegetated bed of water bodies, and the retention of these habitats is fundamental for freshwater biodiversity.

Policy 6 clause b is strongly supported if reworded to include protection and reference to freshwater ecosystems. Particularly the migratory pathways and breeding cycles of freshwater species such as diadromous (migratory) fish.

Policy 6 clause c should include reference to riparian vegetation.


Policy 6 clauses f and g are strongly supported, particularly if the proposed wording regarding the inclusion of freshwater habitats and stronger focus on protection of indigenous biodiversity are included as above.

4. Schedule 1

Policy 2 makes reference to Schedule 1 for 'naturally uncommon ecosystem types', but includes only salt pans amongst the inland freshwater systems in this list. There is clearly a major gap relating to, for example, geothermal streams and lakes, lakes in phytogenic basins (peat bogs) and associated with wetland environments. The classification also appears to be attempting to use physical characteristics of habitat as a proxy for biodiversity, creating uncertainty and difficulties for implementation. Therefore we submit that Schedule 1 should be removed from the draft NPS as this is work in progress and its inclusion risks excluding a number of naturally uncommon habitat types. Alternatively, schedule 1 should be enlarged to include freshwaters and to recognise a few key lakes and rivers which maintain diverse endemic flora and fauna in the absence of impacts from invasive species.

The New Zealand Freshwater Sciences Society strongly supports the development of the Biodiversity NPS, recognises the urgency of this NPS, and is keen to contribute through the activities of the Society and its individual members.

Yours sincerely



David Hamilton
President, NZ Freshwater Sciences Society
cc. Executive Committee, NZ Freshwater Sciences Society

References

- i Butchart, S & 44 other authors. 2010: Global Biodiversity: Indicators of recent decline. *Science* 328: 1164-1168.
- ii Dudgeon, D., Arthington, A.H., Gessner, M.O., Kawabata, Z., Knowler, D., Lévêque, C., Naiman, R.J., Prieur-Richard, A.H., Soto, D., Stiassny, M.L.J. & Sullivan, C.A. 2006: Freshwater biodiversity: importance, threats, status and conservation challenges. *Biological Reviews* 81: 163-182.
- iii Ricciardi, A., Rasmussen, J. 1999: Extinction rates of North American freshwater fauna. *Conservation Biology* 13 (5): 1220-1222.
- iv Burgin, S. 2009: "Mitigation banks" for wetland conservation: a major success of unmitigated disaster? *Wetlands Ecology and Management* 18 (1): 49-55.
- v Walker, S., Brower, A., Stephens, T., Lee, W. 2009: Why bartering biodiversity fails. *Conservation Letters* 2(4): 149-157.