


# NEW ZEALAND ECOLOGICAL SOCIETY

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Submission on proposed NPS-IB  
The New Zealand Ecological Society  
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## **SUBMISSION ON THE PROPOSED NATIONAL POLICY STATEMENT FOR 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. NZES is the leading professional society for pure and applied ecology and publishes the *New Zealand Journal of Ecology*, which is the primary peer-reviewed publication for ecological science and research in the country.

NZES currently has over 500 members, most of whom work with New Zealand's ecosystems and species; either through scientific research or applied management. Our members serve as conservation managers, research scientists, applied ecologists, and academics who work within the country's universities, Crown Research Institutes, central and local government, private consultancies, and community groups. Through its activities, NZES aims to, among other things, 'promote sound ecological planning and management of the natural and human environment'.

NZES welcomes the opportunity to provide comment on the proposed National Policy Statement for Indigenous Biodiversity (NPS-IB). We focus our submission on ecological matters and ecological outcomes, and in particular achieving the first objective of the NPS-IB ('to maintain indigenous biodiversity').

We congratulate the Ministry for the Environment and the Biodiversity Collaborative Group for the huge amount of work that they have done to produce this policy statement to help address the urgent and complex issue of loss of indigenous biodiversity. We also wish to acknowledge the extensive efforts by representatives of other public agencies, development interests, agricultural organisations, and NGOs, who have helped to hone this important policy document. This particular NPS-IB represents the most promising attempt yet to conserve indigenous biodiversity using such policy levers, and will be a vital tool to address ongoing decline in New Zealand's indigenous biodiversity. As such, NZES supports the adoption of this NPS-IB to provide much-needed national direction and consistency in the management of indigenous biodiversity. However, it is important that the NPS-IB does not weaken the good work of those regions and districts that have been national leaders in the conservation of indigenous biodiversity. To this end, we have provided extensive constructive comments on the draft NPS-IB.

Our submission is structured as follows.

- In **Section I** (Key issues) we highlight the challenge of national consistency and the need to emphasise priority actions for all councils. We suggest a need for the policy to mandate interim clearance rules until significant natural areas (SNAs) are in place as well as general clearance rules now and thereafter. We detail strong concerns about the

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implementation requirements (IR) for existing activities and suggest amendments, noting that the policies for improved pasture affects some of the (SNAs) most in need of council protection nationally. We then identify ways in which the policies for identifying SNAs should be improved, and note the necessity of the policy for mobile fauna. We suggest priorities for monitoring, and caution that restoration will need careful targeting to be good value.

- In **Section II** we respond to questions provided on the submission form.
- In **Section III** we suggest specific wording amendments to address our key concerns.

## SECTION I: Key issues

### National consistency

- 1) NZES submits that to achieve the first objective of the NPS-IB ('to maintain indigenous biodiversity', it is necessary that all regional councils and territorial authorities (hereafter 'councils') must have the same requirements.
- 2) We know different councils are at very different stages in giving effect to their responsibilities for maintaining biodiversity. A few, better-resourced councils are proactive and launching into restoration initiatives. Many others have yet to give effect to their most basic responsibilities and statutory functions to identify SNAs, reduce habitat loss, monitor, and enforce compliance. It is in some of these regions and districts that much of the biodiversity loss is occurring, and it will be a big step up for their councils to give effect to even these aspects of the NPS-IB.
- 3) Accordingly, we stress order of importance in our submission, and focus on the basic requirements that we consider are matters of priority for all councils.

### Order of importance

- 4) The most important part of the NPS-IB is the effects management regime, because the first objective will be most effectively achieved by maintaining indigenous biodiversity *in situ*<sup>1</sup>. In particular:
  - a. implementation requirements (IRs) 3.8 and 3.9 (Identifying significant natural areas and Managing adverse effects on SNAs), 3.12 (Existing activities in SNAs), 3.13 (General rules applying outside SNAs), 3.15 (Highly mobile fauna) and 3.19 (Assessment of environmental effects) will make the most difference to maintaining indigenous biodiversity. Conversely, failing to get these policies right will come at the greatest cost to biodiversity.

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<sup>1</sup> *In situ* ecosystems retain complex structures and functioning, and diverse biotic communities, that have developed over long time periods, as shown by examples from around the world: e.g.

Cava MG, Pilon NA, Ribeiro MC, Durigan G 2018. Abandoned pastures cannot spontaneously recover the attributes of old-growth savannas. *Journal of Applied Ecology* 55:1164–1172.

Keeton WS, Kraft CE, Warren DR 2007. Mature and old-growth riparian forests: structure, dynamics, and effects on Adirondack stream habitats. *Ecological Applications* 17:852–868.

- b. IRs 3.10 (Managing adverse effects in plantation forests); 3.11 (Managing adverse effects on geothermal ecosystems); and 3.14 (Identified taonga) are also important although narrower in scope.
- 5) Monitoring (IR 3.20) is the next most important policy in the NPS-IB. Monitoring is usually inadequate because of a lack of proper resourcing and implementation of suitable protocols. The most essential aspect for district councils will be monitoring vegetation clearance and compliance with the NPS-IB.
  - 6) Restoration (e.g. IRs 3.16 & 3.17) may be of great value in some instances. However, it is costly or impossible to fully restore the composition and functioning of many ecosystems<sup>2</sup>: the contribution of restoration to maintaining indigenous biodiversity will be less than maintaining indigenous biodiversity *in situ*, and the financial cost higher. We submit that restoration IRs should not come at the expense of *in situ* protection of remnant and regenerating ecosystems. Restoration should also be used in a clearly targeted manner with high-conservation-value restoration projects identified using the best available conservation science.
  - 7) We submit that the NPS-IB should contain clear direction to councils in the NPS on this order of importance, so that resources are deployed accordingly. This will be needed to discourage councils from allocating biodiversity resources to less politically-challenging actions, rather than more urgent and important identification of SNAs, effects management, and compliance monitoring.
  - 8) Our submission addresses implementation requirements in this order of importance.

#### **Interim and general rules are needed; and interim rules are needed urgently**

- 9) We support the approach of identifying SNAs and highly mobile fauna and of managing effects on them (IRs 3.8, 3.9 and 3.15).
- 10) However, in most districts, identification of SNAs and habitats of mobile fauna will usually be protracted and inconsistent. Development proposals will therefore precede the identification of SNAs in many places that are ecologically significant.
- 11) Furthermore, in many districts residual indigenous fauna habitats and threatened native plants are sparsely distributed across large areas which (to date) have not usually not been identified as SNAs. Protecting a few discrete patches as SNAs will not maintain this indigenous biodiversity, and general rules are more appropriate for this purpose.
- 12) We suggest that IR 3.13 needs to
  - a. precede Section 3.8 in the NPS-IB;
  - b. clarify that identifying and protecting SNAs alone will not be sufficient to maintain indigenous biodiversity;
  - c. give priority to, and clearer direction on, the assessment processes and short timelines to be followed to ensure that adverse effects on potential SNAs and

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<sup>2</sup> e.g. Hilderbrand RH, Watts AC, Randle AM. The myths of restoration ecology. *Ecology and Society* 10(1): 19. [online] <http://www.ecologyandsociety.org/vol10/iss1/art19/>.

Angeler DG., Chaffin BC, Sundstrom SM, Garmestani A, Pope KL, Uden D, Twidwell D, Allen CR 2020. Coerced regimes: management challenges in the Anthropocene. *Ecology and Society* 25(1):4. <https://doi.org/10.5751/ES-11286-250104>

other areas important for indigenous biodiversity are not cleared prior to identification; and

- d. set expectations that general clearance rules beyond SNAs will continue to be necessary, although more land will be covered by mapped SNAs and identified habitats of mobile fauna over time.

13) We suggest that renaming this IR (e.g. to 'unidentified SNAs and indigenous biodiversity outside SNAs') would help to emphasise that land 'outside SNAs' will include unidentified SNAs until identification and mapping is completed; and that land 'outside SNAs' will also include habitats of highly mobile fauna and residual indigenous fauna habitats and threatened native plants that are sparsely distributed.

14) There has been a high rate of loss of significant indigenous vegetation in some drier areas of the eastern South Island in recent decades. In both the high and low country east of the Southern Alps, potential and unidentified SNAs now exist across much of the remaining indigenous vegetation where there has not yet been converted to pasture, cropping, afforestation, or for other intensive uses (infrastructure, buildings, mines, etc). District Plan rules here are generally weak and insufficient to protect these areas, which are vulnerable to pre-emptive development should the NPS-IB become policy<sup>3</sup>. We submit that:

- a. the term 'converted pasture' should be adopted, and defined as 'vegetation that has been converted to pasture or cropping by cultivation and/or irrigation';
- b. central government agency should commission a map of converted pasture and make it available to councils;<sup>4</sup>
- c. the NPS-IB should include an IR that district and city councils in eastern South Island in which SNAs have not been comprehensively mapped must:
  - regard areas that are grassland or shrubland that are not converted pasture or otherwise intensively developed to be potential SNAs; and
  - institute interim clearance rules to prevent their loss and degradation until such time as SNAs are mapped. We have suggested some wording for this IR in Section III A.

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<sup>3</sup> The need for interim clearance rules is demonstrated by documented spikes in land clearance rates in Queensland preceding and immediately following gazettal of vegetation management legislation in 2000, as documented by Reside et al. 2017 and McGrath 2007.

Reside AE, Beher J, Cosgrove AJ, Evans MC, Seabrook L, Silcock JL, Wenger AS, Maron M 2017. Ecological consequences of land clearing and policy reform in Queensland. *Pacific Conservation Biology* 23:219–230.

McGrath C 2007. End of broadscale clearing in Queensland. *Environment and Planning Law Journal* 24:5-13.

<sup>4</sup> It is important to note that converted pasture is not the same as 'high producing pasture' in the national land cover database (LCDB), which includes grassland that has been improved but not converted, and is also likely to be incomplete. The imagery used to map the LCDB does, however, provide a starting point for consistent mapping of converted pasture. Ecologists with on-the-ground experience as well as remote sensing experts would be needed to inform the development of this map.

## Policy and IRs for existing activities

- 15) We support the intent of the provisions for existing activities in SNAs (e.g. Discussion Document p. 50 'ensure the effects on biodiversity do not increase in character, scale or intensity, and ensure that continuing the activity would not lead to the loss of extent or degradation of the SNA's ecological integrity, or the cumulative loss of any ecosystem' and in pastoral farming areas 'to allow existing farming activity to continue, while making sure the impact to indigenous biodiversity does not increase').
- 16) We submit that the wording of Policy 10 is inconsistent with this intent, and inappropriate because it suggests that the goal is to provide for activities that are or have been harmful. In place of that wording we suggest '**Policy 10: to ensure that existing activities do not degrade indigenous vegetation and habitats of indigenous fauna or compromise maintenance of indigenous biodiversity**'.
- 17) Drafting of IR 3.12 (3) a) is unclear and it should be rewritten in plain language. We suggest '*ensure continuation of an existing activity does not reduce the extent of an SNA nor lead to loss of its ecological integrity, including through cumulative effects*'.
- 18) The word alluvial in IR 3.12 (4) d) should be replaced with '*depositional*'. We understand that this was the intent of the ecological advice and consider that this change is important to maintain indigenous biodiversity. '*Depositional*' clarifies that river-derived alluvium and fluvioglacial outwash are included, along with other, associated, threatened and naturally uncommon depositional ecosystems (moraine, fans, colluvium and talus).

## Our concerns about implementation requirement 3.12 (4)

- 19) We have major concerns about IR 3.12 (4) for pastoral farming areas as currently drafted, and submit that its effect will be contrary to the objective of the NPS-IB to maintain indigenous biodiversity, and to the requirement of Section 6(c) RMA to protect SNAs.
- 20) This IR addresses some of the places where indigenous biodiversity on private land is most under threat across New Zealand. Not getting this IR right would mean significant natural areas most in need of council protection nationally would not be assured that protection.
- 21) We submit that IR 3.12 (4), as currently drafted, is
  - a. factually incorrect (requirement 3.12 (4) b));
  - b. contrary to the environment court's findings in a key decision (Mackenzie District Plan Change 13 11<sup>th</sup> Decision);
  - c. unworkable (requirements 3.12 (4) a), b) and c) (i));
  - d. would give rise to confusion and uncertainty for landowners, councils and public interests alike;
  - e. has regrettable precedents, because similar 'improved pasture' provisions having been a leading cause of loss of indigenous biodiversity in pastoral farming areas in the past.
- 22) Requirement 3.12 (4) b) is contrary to ecological understanding and evidence. Where indigenous vegetation is still present, periodic clearance activities are likely (not unlikely,

as currently stated) to compromise maintenance of indigenous biodiversity regardless of improvement cycle and regardless of whether an area 'has become' an SNA.

- 23) Whether or not the activities are undertaken on a regular cycle, they often achieve pastoral intensification. Usually, more indigenous species are removed from grasslands and replaced with exotic species each time such activities are undertaken. Although a few, rapidly-growing native plant species can persist or even benefit (e.g. matagouri), the usual result is cumulative and directional loss of indigenous plants, animals and fungi. Soil and other ecosystem properties, functions, and processes are also cumulatively altered<sup>5</sup>. This ecological result is indigenous habitat transformation and loss, which is contrary to the intent of this IR, and to the requirement 3.12 (4) b) as drafted.
- 24) The Environment Court (in Mackenzie Plan Change 13 11th Decision) concluded that pasture 'improvement' activities have adverse cumulative ecological effects. The decision therefore directed that oversowing and topdressing become a discretionary activity, and that activities such as direct drilling or herbicide spraying have even stronger constraints. We submit that the IR 3.12 must be consistent with the court's findings and directions in Mackenzie Plan Change 13, if the NPS-IB is to support local authorities' existing good practice, not set a lower bar.
- 25) IR 3.12 (4) is also unworkable because Councils hold little or no information on, and cannot forensically determine, past land use activities and practices, cyclical or not. Councils are reluctant to challenge claims of landowners about their past activities – and our experience shows that in practice they do not (we provide examples below).
- 26) Requirement 3.12 (4) is confusing as a whole, because
- a. This clause appears to deny that there will usually be adverse effects [in subclause (4) b)] when in fact there usually will be, and it is therefore contrary to the requirement [in subclause 3) a)] to ensure there is no loss;
  - b. despite the statement [in subclause (4) b)] that adverse effects are unlikely, subclause (4) c) i) makes provision for instances in which there will be effects;
  - c. the word 'may' in subclause 3.12 (4) c) that 'a resource consent application may be required' leaves councils with wide discretion about whether they should take action to consider effects. In our opinion, the biodiversity at stake is generally too significant to provide for this discretion;
  - d. 3.12 (4) sets out requirements for SNAs in areas with pastoral farming but not for managing existing activities to maintain indigenous biodiversity on land outside SNAs in the interim (until SNAs are identified) nor in the longer term;

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<sup>5</sup> Cumulative alteration of vegetation, soils, and ecosystem functioning over 26 years in an experiment site in the Mackenzie Basin is described in:

Laliberté E, Tylianakis JM 2012. Cascading effects of long-term land-use changes on plant traits and ecosystem functioning. *Ecology* 93:145–155.

Laliberté E, Lambers H, Norton DA, Tylianakis JM, Huston MA 2013. A long-term experimental test of the dynamic equilibrium model of species diversity. *Oecologia* 171:439–448.

Laliberté E, Shipley B, Norton DA, Scott D 2012. Which plant traits determine abundance under long-term shifts in soil resource availability and grazing intensity? *Journal of Ecology* 100: 662–677.

- e. forensically determining when an area has 'become an SNA' is not likely to be possible and the idea of an area 'becoming' an SNA is itself confusing<sup>6</sup>.
- 27) Loss of nationally significant indigenous biodiversity has occurred in the recent past because Councils have not contested claims that areas met definitions of improved pasture or had been subject to cycles of improvement and could therefore be cleared. For example, these loopholes enabled the spraying and cultivation of the grassland and shrubland habitat of the Nationally Threatened shrub *Muehlenbeckia astonii* on Kaitorete and the extensive conversion of the nationally significant outwash plain on Simons Pass in the Mackenzie Basin.
- 28) We consider that ongoing ecological loss and litigation is likely to result from the confusing and contradictory requirements, the ecological error of IR 3.12 (4) b), the unfeasibility of determining past land use activities, and lack of clear direction to councils. Because this affects land where development pressures are high and indigenous biodiversity is often critically endangered, we submit that revision of this IR is crucial.

### Suggested amendments to IR 3.12

- 29) We provide a suggested revision for IR 3.12 in our Section III B. Our amendments include
- a. applying the IR to activities within *and outside* SNAs, with applicability to each clearly signalled
  - b. clarifying that IR 3.12 (3) applies to SNAs and that the overriding policy for SNAs is to ensure that 'continuation of an existing activity does not reduce the extent of an SNA nor lead to loss or degradation of its ecological integrity, including through cumulative effects'
  - c. changing IR 3.12 (4) so that local authorities must consider effects where there are threatened and at risk species and on depositional landforms that have not been cultivated, and/or where there is a risk that there will be greater adverse effects than caused by previous activities. This will:
    - reduce dependence on unverifiable claims about cycles of past clearance activities;
    - remove the ecologically unsupported implication that such activities will usually constitute 'maintenance' rather than directional intensification, and that they are unlikely to have harmful ecological effects (we note again that this matter has already been determined by the Environment Court and scientific evidence);
    - contribute towards protecting significant natural areas not yet identified (and unlikely to be identified for some time) on private land used for pastoral farming.
  - d. including definitions of pastoral intensification and agricultural conversion as well as clearance (which is broader than either and includes additional activities such

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<sup>6</sup> For example, what is the policy if an area has been an SNA all along? How is the timing of when an area 'became' an SNA to be determined? By guessing the timing of past ecological changes, or by the timing of the introduction of a particular SNA criterion into a district plan?



as herbicide and insecticide spraying) to provide clarity and bring the NPS into line with Plan Change 13 for Mackenzie District. Best practice relies on distinguishing oversowing and topdressing from activities that more rapidly and completely convert vegetation (e.g. irrigation, mechanical cultivation) and are ancillary but also achieve clearance (e.g. herbicide or pesticide spraying);

- e. acknowledging that there are situations where existing activities (including pastoral intensification, agricultural conversion, and clearance) may not have adverse effects. However, these situations are limited to where regenerating indigenous vegetation does not meet SNA criteria (e.g. the presence of rapidly growing matagouri alone would not usually trigger SNA criteria);
- f. amending (narrowing) the definition of improved pasture to expressly exclude areas dominated by adventive exotic grasses;
- g. including modification, and not only removal, in the definition of clearance. Failure to recognise modification as clearance leaves a critical loophole enabling degradation of indigenous vegetation and other values in order to eventually destroy them. For this reason, modification has been part of clearance definitions in key district plans<sup>7</sup> for decades; omitting it regresses on good practice.

30) We consider that these amendments would meet most of our concerns about this IR.

### Identifying and managing SNAs

- 31) We support the policy and requirement to identify SNAs and manage effects on them (IRs 3.8, 3.9) but note a very heavy reliance on this approach to achieve the first objective of the NPS-IB.
- 32) We also reiterate that there has been rapid and irreversible loss of SNAs (whether or not identified) in last decades, which is ongoing.
- 33) To achieve the objective of the NPS-IB it is essential that the proposed criteria are not weakened and are clarified and strengthened where possible (we provide specific suggestions in our Appendix 3, below).
- 34) We do not support the policy to allow offsetting for 'medium' SNAs and consider that it is contrary to Section 6(c) of the RMA, which requires SNAs to be protected. First, human ability to restore ecosystems is simply not – and may never be – sufficient to warrant further habitat destruction<sup>8</sup>. Second, biodiversity offsetting has failed to meet its purported 'no net loss' objectives internationally<sup>9</sup>. We submit that New Zealand is

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<sup>7</sup> e.g. Waitaki and Mackenzie districts.

<sup>8</sup> e.g. Brudvig LA 2011. The restoration of biodiversity: where has research been and where does it need to go? *American Journal of Botany* 98:549–558.

<sup>9</sup> e.g. Ermgassen et al. 2019. The ecological outcomes of biodiversity offsets under “no net loss” policies: A global review. *Conservation Letters* 17:e12664.

Apostolopoulou & Adams 2019. Cutting nature to fit: Urbanization, neoliberalism and biodiversity offsetting in England. *Geoforum* 98: 214-225.

Gibbons et al. 2018. Outcomes from 10 years of biodiversity offsetting. *Global Change Biology* 24: e643-54.

unlikely to be different because it has few technically 'offset-able' ecosystems and a poor record of environmental compliance and enforcement<sup>10</sup>.

35) Positive aspects of the SNA criteria that will help the policy contribute to maintaining indigenous biodiversity include

- a. representativeness expressly 'includes degraded indigenous vegetation, ecosystems and habitats that are typical of what remains in depleted ecological districts. It is not restricted to the best or most representative examples...'. Tying representativeness to a notion of pristine condition or some arbitrary historic date would severely compromise maintenance of indigenous biodiversity in depleted ecological districts;
- b. an area is an SNA if it has one or more attributes in any one of the four criteria, and no arbitrary ranking or scoring is envisaged;
- c. the ecological context criterion considers the contribution of areas to maintaining indigenous biodiversity in the wider landscape.

36) We have concerns about the definition of ecological integrity and its application in the representativeness criterion in the management framework of **Appendix 2 (Tools for managing effects...)**.

- a. Ecological integrity is a description of current status or condition. It is not a projection of likely future status or change<sup>11</sup>. It should therefore be defined

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Apostolopoulou & Adams 2017. Biodiversity offsetting and conservation: reframing nature to save it. *Oryx* 51:23-31.

Moreno-Mateos et al. 2015. The true loss caused by biodiversity offsets. *Biological Conservation* 192: 552-559.

Clare & Krogman 2013. Bureaucratic slippage and environmental offset policies: the case of wetland management in Alberta. *Society & Natural Resources*. 26: 672-687.

Maron et al. 2015. Conservation: stop misuse of biodiversity offsets. *Nature* 523:401.

Maron et al. 2013. Faustian bargains? Restoration realities in the context of biodiversity offset policies. *Biological Conservation* 155: 141-148.

Bull et al. 2013. Biodiversity offsets in theory and practice. *Oryx* 47: 369-380.

Pawliczek & Sullivan 2011. Conservation and concealment in SpeciesBanking.com, USA: an analysis of neoliberal performance in the species offsetting industry. *Environmental Conservation* 38: 435-444.

<sup>10</sup> e.g. Brower et al. 2018. Compliance with biodiversity compensation on New Zealand's public conservation lands. *New Zealand Journal of Ecology* 42: 11-17.

Brown MA 2017. Last line of defence. Environmental Defence Society, Auckland.

Brown et al. 2014. Compensating for ecological harm—the state of play in New Zealand. *New Zealand Journal of Ecology* 38: 139-146.

Brown et al. 2013. Ecological compensation: an evaluation of regulatory compliance in New Zealand. *Impact Assessment and Project Appraisal* 31: 34-44.

<https://www.newsroom.co.nz/greenroom/2020/03/10/1074422/no-prosecutions-ever-from-environmental-protection-authority>

<sup>11</sup> Lee W, McGlone M, Wright E et al. 2005. Biodiversity inventory and monitoring: a review of national and international systems and a proposed framework for future biodiversity monitoring by the Department of Conservation. Landcare Research contract report LC0405/122.

[https://www.landcareresearch.co.nz/publications/researchpubs/biodiv\\_inventory\\_monitoring.pdf](https://www.landcareresearch.co.nz/publications/researchpubs/biodiv_inventory_monitoring.pdf)

simply as 'the extent to which an ecosystem retains its composition, structure and functions'.

- b. In the current definition '...the extent to which an ecosystem is able to support and maintain' suggests ecological integrity is linked to future status. This would have a similar perverse effect to a 'sustainability' qualifier<sup>12</sup> because assessors would devalue areas they considered might degrade in future. This would compromise maintenance of biodiversity, especially in depleted ecological districts.
  - c. We agree with the assessment principles that Representativeness 'is not restricted to the best or most representative examples' and that '[s]ignificant indigenous vegetation has ecological integrity that is typical of the indigenous vegetation of the ecological district in the present-day environment'.
  - d. However, criteria in the draft management framework conflict with these principles. Areas with a *typical* level (not a high level, as in the currently draft) of ecological integrity must be assessed as having High representativeness value, if in practice protection is not to be given to only the best or most representative examples.
- 37) The population declines that propel At Risk species into Threatened categories in the NZTCS<sup>13</sup> are a prominent and often irreversible feature of New Zealand's present biodiversity declines. Therefore, the omission of At Risk species from two key clauses will compromise the objective to maintain biodiversity. We submit that:
- a. Fundamental Concepts clause (4) d) should be amended to include species that are At Risk as well as Threatened species.
  - b. Likewise, Section 3.9 (Managing adverse effects on SNAs) clause (1) a) iv. should be amended to 'a reduction in population size or occupancy of Threatened or At Risk species using the SNA for any part of their life cycle'.
- 38) We submit that the current shortage of experienced field ecological capability to undertake SNA assessment needs to be recognised and addressed by central government. NZES suggests that this is an outstanding opportunity to rebuild independent field ecological expertise, and central government has an important role to play.
- 39) There will be a need for central government to proactively support vocational training for practical ecological assessment, including a focussed university paper.
- 40) NZES also sees a need to embed new field ecological capability to undertake SNA assessments and to manage effects *within* territorial authorities, as permanent staff, as much as possible. Recent estimates of high costs to councils in the media originate in an assumption that external consultants will be hired to do the work. We submit that this is neither necessary nor desirable. Specifically:

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<sup>12</sup> Walker S, Brower AL, Clarkson BD, Lee WG, Myers SC, Shaw WB, Stephens RTT 2008. Halting indigenous biodiversity decline: ambiguity, equity, and outcomes in RMA assessment of significance. *New Zealand Journal of Ecology* 32: 225–237.

<sup>13</sup> New Zealand Threat Classification System

- a. a greater number of experienced biodiversity staff permanently embedded within councils should be more efficient, and may encourage the shift in culture necessary to achieve the first objective of the NPS-IB; and
  - b. we understand that high overheads in councils may be a barrier to recruitment and employment of new biodiversity staff within councils, and lead to their reliance on external consultants. If this is the case, a targeted central government policy and supplementary funding to councils may be needed to encourage employment of new biodiversity staff.
- 41) An important role for central government will be auditing SNA assessments undertaken for councils. Commercial independence of those in audit roles will be essential to avoid conflicts of interest.
- 42) It will be important that councils are supported by central government with:
- a. comprehensive guidance on SNA assessment written by independent or public agency experts;
  - b. up-to-date and regularly refreshed information resources to support assessment, including:
    - lists of threatened species (NZ Threat Classification lists, supplemented with the regions and districts they are known or likely to occur in);
    - threatened environment classification (to identify Land Environments with <20 and <30% indigenous cover remaining);
    - readily accessible spatial and other information on naturally uncommon (rare) ecosystem types;
    - a map of converted pasture (most urgently required in pastoral farming areas, especially eastern South Island);
    - a map of wetlands and former wetlands throughout New Zealand;
    - the satellite imagery and preliminary analysis required for local authorities to undertake annual monitoring of vegetation clearance (see **Monitoring**, below).
  - c. supplementary funding where necessary.
- 43) We submit that for efficiency and practicality, much public and crown-owned land can be considered to be an SNA and would not require assessment in the short or medium term. Assessment would be needed, however, in areas with existing concessions for commercial activities with potential adverse effects, and when new development proposal or concession applications emerge; and should be the responsibility of the public agencies (not councils). Specifically, we suggest that this policy should apply to:
- a. all DOC-administered land (all legal designation categories equally);
  - b. all LINZ administered Crown land (including Crown pastoral leases and licences, and riverbeds) that is not converted pasture<sup>14</sup>;
  - c. land administered by or vested in SOEs (e.g. Pamu/Landcorp) that is not converted pasture.

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<sup>14</sup> As defined above 'converted pasture is vegetation that has been converted to pasture or cropping by cultivation and/or irrigation'.

### **Wetlands are often SNAs with values that need to be identified**

- 44) The NPS-IB needs to clarify that freshwater wetlands
- a. are often significant indigenous vegetation and habitats of indigenous fauna;
  - b. have ecological values that need to be identified and documented as part of SNA assessment (IR 3.8) in order to be protected and not 'fall through the cracks' (IR 3.9).
- 45) The proposed NPS-FM (NPS for Freshwater Management) requires the physical extent of freshwater wetlands to be identified, but not their significant values. Also, the proposed NPS-FM definition of inland wetlands excludes 'constructed wetlands', 'wet pasture' and 'geothermal wetlands', which are habitats that could meet one or more NPS-IB criteria for designation as an SNA. We suggest that on-the-ground fieldwork for the delineation of freshwater wetlands (NPS-FM) and the identification of wetland and other SNAs should be merged for reasons of effectiveness (ecologically and implementation – i.e. to avoid annoying landowners with multiple visits for different purposes) and to make efficient use of ecological capability and resources.

### **Policy and IR for highly mobile species is strongly supported**

- 46) We support the requirement to identify highly mobile fauna and managing effects on them (IR 3.15), for all the reasons given in the Discussion Document. These species are significant and treasured components of indigenous biodiversity, which frequently 'fall through the cracks' and are unrecognised in decisions, leading to their loss. Many are declining or threatened. NZES submits that including mobile fauna is overdue and essential to achieving the first objective of the NPS-IB.
- 47) NZES submits that because mobile species frequently cross council boundaries, this nationally-focussed responsibility for them will encourage collaboration and co-operation among territorial authorities, leading to efficiencies.
- 48) It will be important for MfE to support territorial authorities with underpinning information and research, and central government funding will need to be secured and allocated accordingly.

### **Monitoring**

- 49) Monitoring is usually inadequate because of a lack of proper resourcing, personnel with appropriate training and experience, and implementation of suitable protocols. Although there are a great number of attributes that could potentially be monitored, IR 3.20 provides little guidance on priorities.
- 50) We submit that assessment of the extent of indigenous vegetation clearance by land use activities is a key requirement for implementing the NPS-IB. We suggest IR 3.20 should require standardised annual monitoring of the extent of indigenous vegetation clearance by land use activities across councils. This could be achieved using satellite

imagery funded and developed centrally by central government<sup>15</sup>. Internationally, this approach now provides for highly efficient and effective monitoring<sup>16</sup> due to increasing availability and quality and decreasing costs of satellite imagery.

- 51) We suggest that monitoring the physical extent of SNAs, taonga outside SNAs, and other areas outside SNAs suggested by IR 3.20 (2) a) depends on the context of maps of converted pasture and cropland, and annual monitoring of vegetation clearance.
- 52) Monitoring the ecological integrity of SNAs and other areas will potentially require considerable commitment. A coordinated (centralised) approach to determining what will be most useful to councils is recommended, followed by the development of standards and methods.

### **Restoration initiatives must deliver value**

- 53) The locations where restoration will most add value, and the benefit (for biodiversity) to cost ratio of different restoration initiatives is largely unknown. Developing the understanding to wisely direct restoration resources would require a significant body of work.
- 54) In addition, restoration activities are often popular and relatively easy, whereas effects management is often challenging. These characteristics will make it tempting for councils to direct resourcing and effort into restoration, rather than into the effects-management work that will make a greater difference for biodiversity.
- 55) We support the draft provisions for restoration and enhancement (Section 3.16) and the targeting in (1) a) to d) and (2) a) to d). However, we submit that this IR should
  - a. provide clear guidance on the relative priority and resourcing of restoration and enhancement, relative to implementation of the effects management regime overall (and we suggest the priority of restoration may be lower in many situations);
  - d. require councils to assess the benefit for indigenous biodiversity against the costs of individual initiatives, in addition to merely 'identifying opportunities'. This is to avoid potential confusion of objectives and outcomes that we have frequently observed;<sup>17</sup>
  - e. clarify that restoration IRs will be a lower priority in districts and regions where effects management is still weak and where rapid loss is occurring, compared to

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<sup>15</sup> New Zealand already collects and processes this imagery, so analysis would be the only marginal cost to agencies.

<sup>16</sup> e.g. Song X-P, Hansen MC, Stehman SV, et al. 2018. Global land change from 1982 to 2016. *Nature* 560: 639.

Eichenwald AJ, Evans MJ, Malcom JW 2020. US imperiled species are most vulnerable to habitat loss on private lands. *Frontiers in Ecology and the Environment* <https://doi.org/10.1002/fee.2177>.

<sup>17</sup> For example, native terrestrial planting for riparian management (often referred to as 'restoration planting') may be useful for improving water quality and aquatic ecosystem health, and other objectives such as community engagement. However, depending on how it is conducted it may have lower value for terrestrial biodiversity and can even be harmful (e.g. if locally sourced plants are not used).

those councils where there is little ongoing loss, and the mapping and protection of SNAs is more advanced.

56) We submit that IR 3.17 (Increasing indigenous vegetation cover) is too vague and untargeted. Restorative actions can be expensive in places where land values are high and ecological transformation has been extreme, and it is often hardy and common indigenous species that do best. We acknowledge that there may be social and wellbeing benefits from planting trees in suburbs of cities, but these may not always be high-priority actions for biodiversity conservation. We consider that this IR should be preceded by work to understand how to direct restoration resources most wisely and efficiently. As noted for IR 3.16 above, IR 3.17 will be a lower priority for some councils than others.

## **SECTION II: Selected questions on submission form**

Do you agree a National Policy Statement for Indigenous Biodiversity (NPSIB) is needed to strengthen requirements for protecting our native plants, animals and ecosystems under the Resource Management Act 1991 (RMA)? **Yes**

The scope of the proposed NPSIB focuses on the terrestrial environment and the restoration and enhancement of wetlands. Do you think there is a role for the NPSIB within coastal marine and freshwater environments? **Yes, specifically in the coastal environment and with respect to wetlands. Areas in the coastal environment, and wetland, are significant indigenous vegetation and significant habitats of indigenous fauna that must be protected as a matter of national importance and territorial authorities and regional councils are responsible for the maintenance of indigenous biodiversity in these places. The Coastal Policy Statement does not define the extent of the coastal zone, and the draft NPS-FM will require recognition of physical wetlands but not the significant values of wetlands.**

Do you agree with the objectives of the proposed NSIB? **Yes**

Territorial authorities will need to identify, map and schedule Significant Natural Areas (SNAs) in partnership with tangata whenua, landowners and communities. What logistical issues do you see with mapping SNAs, and what has been limiting this mapping from happening?

Of the following three options, who do you think should be responsible for identifying, mapping and scheduling of SNAs? Why?

~~a. territorial authorities~~

~~b. regional councils~~

**c. a collaborative exercise between territorial authorities and regional councils, with territorial authorities funding terrestrial SNA identification and management, and regional councils providing a coordinating role and financially responsible for the wetland component of SNA identification and management.**

Do you consider the ecological significance criteria in Appendix 1 of the proposed NPSIB appropriate for identifying SNAs? **Yes, apart from the substantive amendments we have suggested (see Section III C of our submission).**

Do you agree with the principles and approaches territorial authorities must consider when identifying and mapping SNAs? (see Part 3.8(2) of the proposed NPSIB)

**Yes**

The NPSIB proposes SNAs are scheduled in a district plan. Which of the following council plans should include SNA schedules? Why?

~~a. regional policy statement~~

Submission on proposed NPS-IB  
The New Zealand Ecological Society  
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~~b. regional plan~~

~~c. district plan~~

**d. combination, so that ecologically significant wetlands are listed in the regional plans and policy statements as well as recognised as SNAs in district plans.**

We have proposed a timeframe of five years for the identification and mapping of SNAs and six years for scheduling SNAs in a district plan. Is this reasonable? **Yes with the provisos that:**

- **a policy is inserted which requires interim vegetation clearance rules to avoid spikes in land clearance (as happened in Queensland in 1999 and 2000<sup>18</sup>)**
- **MfE is resourced to provide, and provides promptly, the necessary support for ecological capability building, audit, guidance, and oversight, and the necessary information base, including GIS resources.**

Part 3.15 of the proposed NPSIB requires regional councils and territorial authorities to work together to identify and manage highly mobile fauna outside of SNAs. Do you agree with this approach? **Yes, very strongly. Mobile fauna have long been left out of SNA identification, largely because survey time is limited.**

What specific information, support or resources would help you implement the provisions in this section (section B)? **A list of mobile fauna. Support from government (MBIE, MfE and DOC) for research and technical advice.**

Do you think the proposed NPSIB provides the appropriate level of protection of SNAs? **No, we see three significant weaknesses in the:**

- 1) **lack of policy for interim protection prior to formal identification, to avoid spikes in pre-emptive land clearing. This loophole needs to be closed with a policy for the interim protection of land that is not yet developed.**
- 2) **existing activities IR (IR 3.12) as described in the main body of our submission. This section needs to be amended and clarity given to councils in line with best practice plan changes, that activities that involve activities associated with pastoral intensification in SNAs will require resource consent**
- 3) **ability to offset medium SNAs, which appears contrary to Section 6(c) of the RMA, and overlooks a large body of scientific literature from overseas and New Zealand regarding the effectiveness of biodiversity offsets.**

Do you agree with the use of the effects management hierarchy as proposed to address adverse effects on indigenous biodiversity instead of the outcomes-based approach recommended by the Biodiversity Collaborative Group? **It is unlikely that adverse effects will be addressed. Even with the word 'possible' replacing practicable, the hierarchy is ambiguous because what is possible is a matter of opinion. International experience is that offsets (using the hierarchy) typically fall short of their mitigation requirements or fail to be implemented at all. New Zealand's compliance and enforcement record using such policy mechanisms is poor.**

Are there any other adverse effects that should be added to Part 1.7(4), to be considered within and outside SNAs? Please explain. **The list appears to be comprehensive, although there is a risk it will be interpreted minimally.**

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<sup>18</sup> Reside AE, Beher J, Cosgrove AJ, Evans MC, Seabrook L, Silcock JL, Wenger AS, Maron M 2017. Ecological consequences of land clearing and policy reform in Queensland. *Pacific Conservation Biology* 23:219–230.  
McGrath C 2007. End of broadscale clearing in Queensland. *Environment and Planning Law Journal* 24:5-13.



Do you agree with the distinction between high- and medium-value SNAs as the way to ensure SNAs are protected while providing for new activities? Yes/no/Unclear? Please explain. If no, do you have an alternative suggestion? **No. This appears to be a pragmatic compromise that will work against achieving the first objective of the NPS-IB. As we have noted, expectations that the promised offsetting will occur in practice are usually misplaced. We suggest simple avoidance of new destructive activities, as for other SNAs, and as required by Section 6(c).**

Do you agree with the new activities the proposed NPSIB provides for and the parameters within which they are provided for? (see Part 3.9(2)-(4) of the proposed NPSIB).  
and

Do you agree with the proposed definition for nationally significant infrastructure?

**No. We think these are pragmatic compromises that will work against achieving the first objective of the NPS-IB. We recommend review after 5 and 10 years to assess the effects of the concessions in parts (2) to (5) with an option to revise.**

Do you agree with the proposed approach to managing significant indigenous biodiversity within plantations forests, including that the specific management responses are dealt with in the NESPF? (see Part 3.10 of the proposed NPSIB) No. **We think this is a pragmatic compromise that may work against achieving the first objective of the NPS-IB. To limit its damage, the policy must apply only to land already planted in exotic forestry trees, and not to residual indigenous vegetation and indigenous fauna habitats within and among plantations.**

Do you agree with managing existing activities and land uses, including pastoral farming, proposed in Part 3.12 of the proposed NPSIB? **No. As drafted this section is inadequate to fulfil the first objective of the NPS-IB, is ambiguous, and will invite loss and litigation. We have detailed the amendments we consider necessary in our main points above.**

Does the proposed NPSIB provide the appropriate level of protection for indigenous biodiversity outside SNAs, with enough flexibility to allow other community outcomes to be met? **No. As detailed in our main points above, there needs to be more direction that rules will be needed to cover the gaps that SNAs will leave, to fulfil the first objective of the NPS-IB.**

Do you think it is appropriate to consider both biodiversity offsets and biodiversity compensation (instead of considering them sequentially) for managing adverse effects on indigenous biodiversity outside of SNAs? **No; they should be considered sequentially.**

Part 3.5 of the proposed NPSIB requires territorial authorities and regional councils to promote the resilience of indigenous biodiversity to climate change. Do you agree with this provision? **Yes, very strongly. This is essential to meet the first objective of the NPS-IB.**

Do you think the inclusion of the precautionary approach in the proposed NPSIB is appropriate? (see Part 3.6 of the proposed NPSIB) **Yes.**

Do you agree with the framework for biodiversity offsets set out in Appendix 3 of the NPSIB? **The framework is generally sound, although some conflicts remain (e.g. like for like vs trading up). The problem is not the framework but that experience and the scientific literature (we provide examples in the main body of our submission) show that good offset frameworks are not usually followed in practice, and/or fail in the enforcement of conditions. We cannot endorse a policy against evidence that it has failed elsewhere.**

Do you agree with the framework for biodiversity compensation set out in Appendix 4 of the NPSIB? **Again, the framework appears generally sound; the problem is that experience shows that good frameworks for compensation are repeatedly not followed in practice/or fail in the enforcement of conditions. We cannot endorse policies against evidence that they fail elsewhere.**

Submission on proposed NPS-IB  
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What level of residual adverse effect do you think biodiversity offsets and biodiversity compensation should apply to?

- a. ~~More than minor residual adverse effects~~  
 b. All residual adverse effects, **in order to meet the first objective of the NPS-IB.**  
 c. ~~Other. Please explain.~~

The proposed NPSIB promotes the restoration and enhancement of three priority areas: degraded SNAs; areas that provide important connectivity or buffering functions; and wetlands. (see Part 3.16 of the proposed NPSIB) Do you agree with these priorities? **Yes.**

Do you see any challenges in wetland protection and management being driven through the Government's Action for healthy waterways package while wetland restoration occurs through the NPSIB? Please explain. **Yes. The division may lead to confusion and gaps in implementation if different agencies are involved. This needs to be addressed.**

Part 3.17 of the proposed NPSIB requires regional councils to establish a 10 per cent target for urban indigenous vegetation cover and separate indigenous vegetation targets for non-urban areas. Do you agree with this approach? **We emphasise that to be of benefit for biodiversity, this work needs to be preceded and guided by an understanding of what indigenous revegetation is most effective and most cost-effective for indigenous biodiversity. We also repeat the caveat that we have stated elsewhere that this work must not be at the expense of higher priority actions to maintain indigenous biodiversity in situ.**

Do you think regional biodiversity strategies should be required under the proposed NPSIB or promoted under the New Zealand Biodiversity Strategy?  
and

Do you agree with the proposed principles for regional biodiversity strategies set out in Appendix 5 of the proposed NPSIB?  
and

Do you think the proposed regional biodiversity strategy has a role in promoting other outcomes (eg, predator control or preventing the spread of pests and pathogens)?  
and

Do you agree with the timeframes for initiating and completing the development of a regional biodiversity strategy? (see Part 3.18 of the proposed NPSIB)

**Grassroots organisations and land managers focussed on biodiversity have achieved commendable results in some areas; these initiatives and people can be immensely important for educating people about the value of biodiversity and encouraging them to care for biodiversity on their properties, and hence should be part of the solution. However, in the NPS-IB, we suggest that it may be more effective for this IR to require action plans (rather than strategies) at regional and district levels. This is because**

- **strategic direction will be given by the national strategy Te Kioroa O Te Kioroa**
- **action plans may be more effective at inspiring people in the actions that they are able to get involved with, and also at holding councils to account for giving effect to the more difficult implementation requirements.**

**Done well, regional biodiversity action plans could be very useful tools for fostering ongoing awareness of and action for biodiversity conservation, if they allow local communities to come up with innovative ways to deal with particular problems and promote buy-in by farmers, iwi and local conservationists who then take ownership of these plans.**

**We reiterate the caveat we have stated elsewhere in this submission, that action plans and voluntary initiatives must not take resources away from effects management, nor lead to the weakening of underpinning rules.**

Do you agree with the requirement for regional councils to develop a monitoring plan for indigenous biodiversity in its region and each of its districts, including requirements for what this monitoring plan

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should contain? **Yes, but we have concerns that the requirements are too broad and vague to be useful. We have addressed this in our main comments above.**

Part 4.1 requires the Ministry for the Environment to undertake an effectiveness review of the proposed NPSIB. Do you agree with the requirements of this effectiveness review? **We agree that review is needed. We suggest that the review must specifically include whether the first objective of the NPS-IB has been achieved and report on the trend in indigenous vegetation clearance and loss.**

Do you agree with the proposed additional information requirements within Assessments of Environment Effects (AEEs) for activities that impact on indigenous biodiversity? (see Part 3.19 of the proposed NPSIB). **Yes, we very strongly support these requirements.**

Which option for implementation of the proposed NPSIB do you prefer? Please explain.

a. Implementation as soon as reasonably practicable – SNAs identified and mapped in five years, scheduled and notified in plans in six years. **Achieving the first objective of the NPS-IB relies so strongly and exclusively on SNA identification and management, so this needs to be done as soon as possible.**

~~b. Progressive implementation programme – SNAs identified and mapped within seven years, scheduled and notified in plans in eight years.~~

Do you agree with the implementation timeframes in the proposed NPSIB, including the proposed requirement to refresh SNA schedules in plans every two years? **Yes, but we note that resourcing for capability building, clear guidance, audit, and underpinning information are critical to achieving this.**

### SECTION III: Specific suggestions for wording amendments

#### A: Suggested amendments to IR 3.13 General rules applying outside SNAs

- (1) Local authorities must take steps to maintain indigenous biodiversity outside SNAs, including by making or changing their policy statements and plans to do all of the following:
- a) specify where, how and when controls on subdivision, use and development in areas outside SNAs are necessary to maintain indigenous biodiversity
  - b) apply the effects management hierarchy to adverse effects, except that biodiversity compensation may be considered as an alternative to biodiversity offsetting (and not only when biodiversity offsetting is not demonstrably achievable)
  - c) specify where, how and when, for any area outside an SNA, the assessment and classification required by clause 3.8(1) is required
- (2) In regions and districts where SNAs have not been comprehensively identified, local authorities must ensure their policy statements and plans
- a) recognise that remaining areas of indigenous vegetation and habitats of indigenous fauna are potential SNAs, and
  - b) contain policies and rules and to prevent the loss and degradation of potential and unidentified SNAs until such time as they are comprehensively mapped.
- (3) If an area outside an SNA is assessed as significant indigenous vegetation and significant habitat of indigenous fauna following an assessment in accordance with Appendix 1, a local authority must manage the adverse effects on indigenous biodiversity in the area as if the area were an SNA.
- (4) In preparing policy statements and plans giving effect to subclause (1), local authorities must have particular regard to the potential of Māori land to provide for the social, cultural and economic wellbeing of Māori.

Submission on proposed NPS-IB  
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## B: Suggested amendments to IR 3.12 for existing activities

### 3.12 Existing activities in SNAs

(1) ~~This clause~~ Clauses (2) and (3) apply to the management of the effects of existing activities on SNAs. Clause (4) applies within and outside SNAs.

(2) Regional councils and local authorities must make or change their policy statements and plans to specify where, how and when plans must provide for existing activities that may adversely affect indigenous biodiversity are to be provided for.

(3) In providing for existing activities in their policy statements and plans, local authorities must –  
 a) ensure the continuation of an existing activity does not reduce the extent of an SNA nor lead to loss or degradation of its ecological integrity, including through cumulative effects; and will not lead to the loss, including through cumulative loss, of extent or degradation of the ecological integrity of any SNA; and  
 b) ensure the adverse effects of an existing activity are of no greater character, intensity or scale than they were before the National Policy Statement commencement date.

(4) In regions and districts where pastoral farming is an existing activity, local authority policy statements and plans must recognise that

(a) Consideration of effects (under Schedule 1 of the Act or through a resource consent application) of pastoral intensification ~~may~~ will be required in the following circumstances, to ensure the outcomes in subclause (23) are met:

- i) pastoral intensification, agricultural conversion, and/or clearance is proposed in an area that supports any threatened or at-risk species
- ii) pastoral intensification, agricultural conversion, and/or clearance is proposed in an area on depositional ~~that supports alluvial~~ landforms that have not been cultivated (ie, the land as not been disturbed for the purpose of sowing, growing or harvesting pasture or crops)
- iii) proposed pastoral intensification, agricultural conversion or clearance ~~is likely to~~ may have adverse effects that are greater in character, intensity or scale than the adverse effects of activities that have previously been undertaken to improve pasture
- iv) there is inadequate information to demonstrate that the proposed pastoral intensification, agricultural conversion or clearance will not have greater adverse effects than previous activities undertaken to improve pasture.

(b) local authority policy statements and plans may recognise that  
 i) indigenous vegetation may regenerate in areas that have previously been cleared of indigenous vegetation and converted to improved pasture; and  
 ii) if the regenerating indigenous vegetation does not now meet SNA criteria ~~has not itself become an SNA in the time since the last clearance event~~, periodic pastoral intensification, agricultural conversion, and/or clearance of indigenous vegetation to maintain or improve pasture ~~is unlikely to~~ may not compromise the protection of SNAs or maintenance of indigenous biodiversity.

(5) In this clause –

**pastoral intensification** of indigenous vegetation means subdivisional fencing and/or topdressing and oversowing

**agricultural conversion** of indigenous vegetation means direct drilling or cultivation (by ploughing, discing or otherwise) or irrigation

**clearance** is the removal or modification of indigenous vegetation, by any activity that results in this outcome, including cutting, crushing, application of chemicals, drainage, burning, cultivation, over-planting, application of seed of exotic pasture or crop species, mobstocking and/or changes to soils, hydrology or landforms

**improved pasture** means an area of land where exotic pasture species have been deliberately sown and maintained for the purpose of pasture production and livestock grazing, and species composition and growth has been modified so that the deliberately sown species dominate in number and in

cover. Deliberately sown species do not include unintentionally introduced (adventive) grasses and clovers.

**depositional landform** means alluvial (matter deposited by water e.g. fans, river flats and terraces), colluvial (matter deposited by gravity at the base of hillslopes, such as talus), and/or glacial (matter deposited by glaciers: moraines and outwash) landforms

## C: Suggestions on SNA criteria and assessment principles

### Appendix 1: Criteria for identifying significant indigenous vegetation and significant habitat of indigenous fauna

#### Key assessment principles

...

#### C Rarity and distinctiveness

...

C6 Significant Natural Areas that qualify under this criterion will have at least one of the following:

- a) provides habitat for an indigenous species that is listed as Threatened or At-risk in the New Zealand Threat Classification System lists:
- b) an indigenous vegetation type or an indigenous species that is uncommon within the region or ecological district:
- c) an indigenous species or plant community at or near its distributional limit:
- d) indigenous vegetation in an ecological district, region or land environment where indigenous cover that has been reduced to less than 30 per cent of its former extent in the ecological district, region or land environment:
- e) indigenous vegetation or habitat of indigenous fauna occurring on sand dunes:
- f) indigenous vegetation or habitat of indigenous fauna occurring on naturally uncommon ecosystems:
- g) the type locality of an indigenous species:
- h) the presence of a distinctive assemblage or community of indigenous species:
- i) the presence of a special ecological or scientific feature.

#### D Ecological context

D1 ~~Ecological context is the extent to which the size, shape and configuration of an area within the wider surrounding landscape contributes to its ability to maintain indigenous biodiversity or affects the ability of~~ is the contribution of an area to the ability of that area or other areas in the surrounding landscape to maintain its indigenous biodiversity.

#### Key assessment principles

D2 Ecological context has two main attributes:

- a) the characteristics that help maintain indigenous biodiversity of the natural area (such as size, shape and configuration); and
- b) the contribution the natural area makes to protecting indigenous biodiversity in the wider landscape (such as by linking, connecting to or buffering other natural areas; providing 'stepping stones' of habitat or maintaining ecological integrity).

#### Attributes

D3 Significant Natural Areas that qualify under this criterion will have at least one of the following attributes:

- a) moderate to large size and/or compact shape, in the context of the ecological district:
- b) well-buffered ~~relative to remaining habitats in the ecological district:~~
- c) provides a full or partial buffer to or link between, other important habitat(s) of indigenous fauna or significant natural area(s):
- d) important for the natural functioning of an ecosystem ~~relative to remaining habitats in the ecological district:~~

Submission on proposed NPS-IB  
 The New Zealand Ecological Society  
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- e) supports and/or provides important habitat for indigenous fauna, including feeding, breeding, refuge or resting habitat.

## Appendix 2: Tool for managing effects on significant natural areas

...

Management framework

### Representativeness

Attributes	Rating
Ecological unit(s) present that is typical of the indigenous character of the ecological district and which retains a <u>typical high</u> level of ecological integrity in the context of what remains in the ecological district.	High
Habitat that supports a typical suite of indigenous fauna that is characteristic of the habitat type in the ecological district and retains the majority of species expected for that habitat type in the ecological district.	High
Ecological unit(s) present that is typical of the indigenous character of the ecological district and which retains a moderate level of ecological integrity in the context of what remains in the ecological district.	Medium
Habitat that supports a typical suite of indigenous taxa that is characteristic of the habitat type in the ecological district and retains a moderate range of species expected for that habitat type in the ecological district.	Medium

### Diversity and pattern

Attributes	Rating
A high diversity of indigenous species, vegetation, habitats of indigenous fauna, or communities within the context of the ecological district	High
Presence of important ecotones and/or complete gradients or sequences.	High
A moderate diversity of indigenous species, vegetation, habitats of indigenous fauna, or communities within the context of the ecological district	Medium
Presence of ecotones and/or partial gradients or sequences.	Medium

### Rarity and distinctiveness

Attributes	Rating
Provides habitat for a nationally Threatened, or two or more At Risk indigenous species as identified in the New Zealand Threat Classification System lists.	High
An indigenous species or plant community at its distributional limit.	High
<del>Indigenous vegetation that has been reduced to less than 20% of its former extent in the ecological district, region or land environment.</del> Indigenous vegetation in an ecological district, region or land environment where indigenous cover has been reduced to less than 20% of its former extent.	High
Indigenous vegetation or habitat of indigenous fauna occurring on sand dunes.	High
Indigenous vegetation or habitat of indigenous fauna occurring on naturally uncommon ecosystem types.	High
The type locality of an indigenous species	High
Provides habitat for an At Risk indigenous species as identified in the New Zealand Threat Classification System lists	Medium
An indigenous species or plant community near its distributional limit.	Medium
An indigenous vegetation type or an indigenous fauna species that is uncommon within the region or ecological district.	Medium
<del>Indigenous vegetation that has been reduced to between 20% and 30% of its former extent in the ecological district or land environment.</del> Indigenous vegetation in an ecological district, region or land environment where indigenous cover has been reduced to between 20% and 30% of its former extent'	Medium
The presence of a distinctive assemblage or community of indigenous species	Medium
A special ecological or scientific feature	Medium

Submission on proposed NPS-IB  
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**Ecological context**

<b>Attributes</b>	<b>Rating</b>
Large size, compact shape <u>and/or well-buffered</u> in the context of the ecological district.	High
<del>Well-buffered relative to remaining habitats in the ecological district.</del>	High
Provides a full buffer to, or link between, other important habitats of indigenous fauna or Significant Natural Areas.	High
Is <del>very</del> important for the natural functioning of an ecosystem, <del>relative to remaining habitats in the ecological district.</del>	High
Supports <del>large numbers of indigenous fauna.</del> <u>or provides important habitat for indigenous fauna, including feeding, breeding, refuge or resting habitat</u>	High
<del>Provides critical habitat for indigenous fauna, including important feeding, breeding, refuge or resting habitat.</del>	High
Moderate size and a compact shape in the context of the ecological district.	Medium
Provides a partial buffer to, or link between, other important habitats of indigenous fauna or Significant Natural Areas.	Medium
<del>Important for the natural functioning of an ecosystem, relative to remaining habitats in the ecological district.</del>	Medium

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