

BEFORE HEARING PANEL

Under **the Resource Management Act 1991**

And

In the matter of **the Proposed Kaipara District Plan, Ecosystems
and Indigenous Biodiversity chapter**

By Kaipara District Council

Evidence of Andrew James Townsend

(Ecological Significance Criteria)

for the Director-General of Conservation / Tumuaki Ahurei

Submitter no. 304

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Executive summary

1. The Director-General of Conservation (DG) is seeking amendments to the Ecosystems and Indigenous Biodiversity Chapter of the proposed Kaipara District Plan (PDP), in regard to the method of assessment for ecological significance. The Kaipara District Council (KDC) prefers the criteria used under the Regional Policy Statement for Northland (RPS), and the DG sought clarification that the RPS system for identifying significance would produce similar results to National Policy Statement of Indigenous Biodiversity (NPS-IB) system.
2. My comparative assessment of the two different sets of criteria in this evidence is theoretical, undertaken as a largely controlled, desk-top exercise. For simplicity, I have selected examples where only one or two attributes generally associated with significance are evident, to highlight similarities and differences between the systems.
3. In my opinion, the results of the NPS-IB criteria and the RPS criteria for assessing significance will be very similar. Both systems have strong alignment, triggering ecological significance for almost all the same attributes.
4. Where there are some differences, most are minor. Although some taxa that are ranked as At Risk, or Data Deficient could trigger ecological significance under the RPS criteria but not the NPS-IB. (The NPS-IB also identifies type localities as having ecological significance, but in my opinion, this is not relevant to the Kaipara District for reasons I discuss later in my evidence).
5. Some differences also occur for specified highly mobile fauna (which are afforded separate and focused provisions outside the scope of the ecological assessment criteria under the NPS-IB). By contrast, highly mobile fauna would trigger ecological significance under the RPS criteria because of attribute 4.(c), providing a trigger for "*habitat for critical life history stages of indigenous fauna including breeding / spawning, roosting,*

nesting, resting, feeding, moulting, refugia or migration staging point (as used seasonally, temporarily or permanently)”.

6. Apart from the ‘edge areas’, the results from the two systems appear to be largely similar, which, because they both use similar attributes as criteria, is not unexpected.
7. On the second matter that the DG has asked my evidence to cover; in my opinion, given the high diversity encountered in forest remnants, and the possibility of encountering a Threatened or At Risk species, it is appropriate that an assessment is undertaken under the appropriate criteria (NPS-IB or RPS), before allowing clearance of indigenous forest under the Forests Act 1949. I understand from the evidence of Mr Whitelock, in his opinion this assessment should occur under the Resource Management Act 1991 in concert with the decision to harvest indigenous timber under the Forests Act 1949.

Introduction

8. My full name is Andrew James Townsend.
9. I have been asked to provide expert ecological evidence on aspects of the provisions in the Ecosystems and Indigenous Biodiversity Chapter of the PDP.

Qualifications and experience

10. I hold a bachelor’s degree in Horticulture and a Post-graduate Diploma in Plant Science from Massey University. I am a member of the New Zealand Botanical Society and the New Zealand Plant Conservation Network.
11. I am currently employed by Te Papa Atawhai/Department of Conservation (DOC) as a senior technical advisor for ecology, in the Terrestrial Ecosystems Unit of the Biodiversity Heritage and Visitor Group. I have worked for DOC as a terrestrial ecologist since 1997, first based in Wellington (10 years) and then Northland (~18 years). Prior to 1997, I held fixed-term contracts with DOC and worked as an ecological consultant (Wildland Consultants Ltd.); this work required ecological survey across

much of the North Island, using and refining ecological assessment criteria for the Protected Natural Areas (PNA) Programme and writing PNA survey reports.

12. I was involved in the preparation of DOC's guidelines for assessing Ecological Significance¹ and have experience in providing advice on ecological significance assessments into internal and external organisational statutory processes such as council hearings and the Environment Court.
13. I assisted the Northland Regional Council with developing ecological significance criteria for the Northland Regional Council Regional Policy Statement 2016 (RPS).
14. I have also assisted with developing the processes used to identify significant natural areas (SNA) in across the Northland region, and the Thames-Coromandel, and Waitomo Districts as part of their district planning processes.
15. My current role requires me to provide ecological advice nationally, and I am specifically involved with projects across much of the North Island, including providing advice on managing threatened plants in Wairarapa, Hawke's Bay, Manawatū-Rangitikei, Waikato, Tāmaki Makaurau/Auckland and Taitokerau/Northland regions.

Code of Conduct

16. While this is a council hearing, I confirm that I have read the code of conduct for expert witnesses as contained in the Environment Court Practice Note 2023 (the Code). I have complied with the Code when preparing my written statement of evidence and will do so when I give evidence before the hearing.

¹ Davis, M.; Head, N.J.; Myers, S.C.; Moore, S.H. 2016: Department of Conservation guidelines for assessing significant ecological values. *DOC. Wellington.*

17. For the avoidance of doubt, in providing this evidence as an expert witness in accordance with the Code, I acknowledge that I have an overriding duty to impartially assist the Panel on matters within my area of expertise. The views expressed are my own expert views, and I do not speak on the behalf of the DG.
18. The data, information, facts and assumptions I have considered in forming my opinions are set out in my evidence. The reasons for the opinions expressed are also set out, and includes, where relevant:
 - a. why other alternative interpretations of data are not supported;
 - b. any qualification if my evidence may be incomplete or inaccurate without such qualification;
 - c. any knowledge gaps and the potential implication of the knowledge gap;
 - d. if my opinion is not firm or concluded because of insufficient research or data or for any other reason; and
 - e. an assessment of the level of confidence and the likelihood of any outcomes specified in my conclusion.
19. Unless I state otherwise, this evidence is within my sphere of expertise, and I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

Scope of evidence

20. Part I covers a comparative assessment of the criteria for assessing ecological significance (Appendix 1) in the National Policy Statement on Indigenous Biodiversity 2023 (NPS-IB) and the criteria for assessing ecological significance (Appendix 5) in the Regional Policy Statement for Northland 2016 (RPS) to understand how their differences might produce different results.
21. My evidence focuses on highlighting the similarities and the differences between the two systems and provides a few examples of how these might change outcomes for potential SNAs.

22. Although the NPS-IB is in force, KDC has chosen to use the RPS criteria. My evidence tests whether the two sets of criteria would produce similar results for significance as the DG is seeking alignment with the NPS-IB.
23. Part II covers comment on Rule ECO-R1, providing permitted activity status for: *(k) the harvesting of indigenous timber carried out in accordance with a forest management plan or permit under Part IIIA of the Forests Act 1949.*

Material considered

24. I have read and considered the following:
 - a. The evidence of Dr Tony Beauchamp, Dr Ilse Corkery and Mr Ronan Whitelock;
 - b. National Policy Statement on Indigenous Biodiversity 2023, Amended December 2025 (NPS-IB);
 - c. The RPS Appendix 5 criteria to assess ecological significance;
 - d. The Ecosystems and Indigenous Biodiversity chapter of the PDP;
 - e. The s32 report on the Ecosystems and Indigenous Biodiversity chapter
 - f. The s42a report on the Ecosystems and Indigenous Biodiversity chapter
 - g. the DG's submission and further submission.
25. I have visited the Kaipara District many times, to collect ecological information, and provide advice to DOC on managing threatened plants; assist with lakes surveys; and assess vegetation for hearings associated with plan changes, boards of inquiry, environment court proceedings, and other ecological processes.

Introduction

Part I

26. The time-limited modification to the Resource Management Act 1991 (RMA) (section 78) indicates that other than mapping, as Mr Whitelock explains in his evidence much of the NPS-IB remains in force, including the requirement to assess ecological significance. KDC favours using the

existing RPS formulation of criteria for significance in ECO-R2 while still being required to implement the NPS-IB.

27. I therefore conducted a side-by-side analysis of the two assessment criteria (hereafter referred to as the NPS-IB criteria and the RPS criteria) to determine where they provide similar results and where they differ, and whether these differences are likely to have any significant repercussions. This side-by-side comparison is provided in Table 1, Appendix A. The detailed analysis supporting this table is at paragraphs 37–38 of my evidence.
28. Robust assessment criteria for significance are particularly important because KDC has chosen to not map their SNAs in the proposed plan. In the absence of mapping, in my opinion, it is extremely difficult to fully assess ecological significance, because in addition to assessing values within the site (e.g., vegetation, and/or significant taxa), mapping provides context for how that particular site compares with all the other sites in the landscape (e.g., pattern, and/or representativeness).

Part II

29. I was asked to provide comment on whether applications under the Forests Act 1949 could affect areas of ecological significance and to provide examples in Taitokerau/Northland of the kinds of values that might be present.

Part I – Systems for Assessing Significance

30. The assessment of ecological significance in the field is often complex. Several Threatened, At Risk, or regionally significant (Ford et al., in prep.) species may be present; or there may be vegetation present that may trigger representativeness; or there could be diverse ecological patterns. Any one of these attributes could trigger ecological significance on its own.
31. The assessment of the two different systems undertaken for the purposes of comparison in this evidence, has been desktop and where only one or two attributes are tested against ecological significance criteria. The results

may differ at actual sites in the field. However, in my opinion, the difference is likely to be in the direction of *more* sites triggering ecological significance, rather than less (because more attributes are usually being tested at the same time when in the field).

32. Notwithstanding this limitation, in my opinion there is strong alignment between both systems overall, with both triggering ecological significance for almost all the same attributes tested.
33. However, because of the slightly different ways that “representativeness”, “diversity”, “pattern”, “rarity”, “distinctiveness”, and “ecological context” are interpreted in each system, there is some overlap between the criteria, e.g., “ecological context” has strong links with “diversity and pattern” and sometimes “representativeness”, so the same feature might trigger any one (or more) of these criteria.
34. Where there are some differences, in my opinion these are largely minor in the Kaipara District. For example, there are very few Type Localities² (a trigger under NPS-IB criteria, but not RPS criteria) in the Kaipara District, and the one that was identified would also trigger ecological significance for other attributes (under both sets of criteria).
35. One area where there does seem to be a discrepancy is around taxa that are ranked as At Risk—Naturally Uncommon, At Risk—Relict, or Data Deficient (Rolfe et al., 2022; Townsend et al., 2008). Under the RPS criteria, the presence of one of these taxa at a site would trigger ecological significance, however it would not trigger ecological significance under the NPS-IB.
36. The following is a line-by-line analysis of the areas where the two systems provide essentially the same results. For ease of reference this is presented as a table in Appendix A.

² Discussed in more detail in paragraphs 61–62, below.

Commonality with the two systems

37. Both systems use the same broad ecological concepts to assess ecological significance, based around the concepts of:
 - a. representativeness;
 - b. diversity and pattern;
 - c. rarity and distinctiveness; and
 - d. ecological context.

38. In summary, both systems:
 - a. recommend the use of Ecological Districts (Brook, 1996; McEwen, 1987) as a framework for setting the ecological context of the assessed site, but the RPS criteria also allows for other frameworks to be considered (such as assessments of marine areas).
 - b. require a suitably qualified assessor.
 - c. recognise that representativeness is about remaining indigenous vegetation regardless of its state, but the NPS-IB criteria more explicitly identifies the importance of commonplace and degraded systems as a trigger for significance. By contrast, the RPS criteria recognises that seral and regenerating indigenous vegetation types would have been typical components of the 1840 flora in Taitokerau/Northland, because of the length of time of occupation, and would therefore also trigger ecological significance. Therefore, for indigenous ecosystems both systems would produce similar results, but ecological significance could be more easily triggered for weedy, contemporary ecosystems under the NPS-IB criteria in ecological districts where nothing else remains. The patchwork nature of remaining indigenous vegetation in many ecological districts across Taitokerau/Northland mean that many – if not all – examples of exotic vegetation are unlikely to trigger representativeness. However, they would trigger one of the other criteria, such as rarity, if they contained a Threatened species. For example, Dr Beauchamp describes how bittern

- Threatened—Nationally Critical species – use exotic vegetation at paragraph 37 in his evidence.
- d. recognise the importance of fauna and faunal habitat, and both systems recognise that fauna may not be restricted to indigenous vegetation.
 - e. recognise the importance of changes in substrate in defining ecological patterns.
 - f. use the concept of Ecological Units (defined in the RPS but not the NPS-IB) to stratify the landscape into groups of similar ecosystems, however the NPS-IB does not use the term.
 - g. recognise the importance of indigenous diversity, but the RPS criteria possibly have a higher threshold, in that “high diversity” is required, (versus “at least a moderate diversity” under the NPS-IB). However, neither system quantifies relative diversity, so this would rely on the suitably qualified assessor, and would arguably provide a similar result.
 - h. recognise the importance of changes in species composition in the landscape.
 - i. recognise that naturally uncommon species are important, and both systems identify the importance of taxa with limited distributional ranges.
 - j. recognise the importance of threatened land environments, using the threshold of <20% remaining (Acutely or Chronically Threatened) as a trigger of ecological significance.
 - k. identify the importance of naturally rare and threatened ecosystems.
 - l. recognise distinctive assemblages as a trigger for ecological significance.
 - m. have triggers to recognise the importance of “special areas.”
 - n. recognise the importance of buffering and linkages as a trigger of ecological significance.

Areas where the two systems might differ

39. There are some areas where the systems would be likely to produce differing results. These are described below.
40. The first part of criterion NPS-IB C(6)(b) recognises an “indigenous vegetation type that is uncommon within the region or ecological district” as a trigger of ecological significance (as separate to “an indigenous species” – the second part of criterion C(6)(b)). Indigenous vegetation types are not explicitly identified under the RPS rarity criteria, however it may be triggered under rarity criterion RPS 2(d)iii, as an example of “an indigenous ecosystem and vegetation type that is naturally rare, or has developed as a result of an unusual environmental factor(s) that occur or are likely to occur in Northland”.
41. The NPS-IB criteria appears to be more restrictive when considering At Risk flora and fauna because it excludes some taxa if they occur in more than three other regions (unless they are ranked as At Risk—Declining, which is specifically included under the Rarity and Distinctiveness criterion³). This means that taxa ranked as At Risk—Relict, or At Risk—Naturally Uncommon, which have a wide distribution, may not trigger ecological significance under the NPS-IB but would under the RPS.
 - a. In the Kaipara District, taxa that fit this set of circumstances includes:
 - b. *Bulbophyllum tuberculatum*, known from private land near Ruawai (AK 229771).
 - c. *Doodia mollis*, known from several sites in Kaipara District, including a swamp forest remnant south of Dargaville⁴; near Whenuanui Reserve⁵; and Waipoua Forest⁶.

³ NPS-IB C(6)(a).

⁴ <https://www.inaturalist.nz/observations/268172573>

⁵ <https://www.inaturalist.nz/observations/26733600>

⁶ <https://www.inaturalist.nz/observations/137378991>

- d. *Doodia squarrosa*, known from a forest remnant east of Dargaville⁷; and Maunganui Bluff⁸.
 - e. *Fimbristylis velata*, also known from private land on the margins of some of the Pouto lakes (Wells et al., 2014).
 - f. *Pseudopanax ferox*, known from forest remnants on Pouto Peninsula (e.g., AK 205021).
 - g. *Schizaea dichotoma*, known from Waipoua Forest⁹ and Trounson Kauri Park¹⁰, and will be present in other unprotected kauri (*Agathis australis*) forest remnants¹¹.
 - h. *Stuckenia pectinata*, known from some of the Pouto lakes (Wells et al., 2014).
 - i. *Thismia rodwayi*, known historically from Trounson Kauri Park (e.g., CHR 141477).
42. Where these species occur on private land, they would automatically trigger ecological significance criteria under the RPS, but not necessarily under the NPS-IB criteria.
43. Taxa that also fit this set of circumstances and are possibly present in the Kaipara District (because they are present in adjacent Districts) include: *Brachyglottis myrianthos*, *Crassula ruamahanga*, *Danhatchia australis*, *Hymenophyllum australe*, *Hypolepis dicksonioides*, *Leptinella dispersa* subsp. *dispersa*, and *Pittosporum ellipticum*.
44. If any one of these taxa were the only Threatened or At Risk taxon present at the site, or was common in the ecological district, it would not trigger ecological significance under the NPS-IB at that site. However, this is

⁷ <https://www.inaturalist.nz/observations/65265406>

⁸ <https://www.inaturalist.nz/observations/61190178>

⁹ <https://www.inaturalist.nz/observations/257317636>

¹⁰ <https://www.inaturalist.nz/observations/240712142>

¹¹ Kauri is itself ranked as At Risk—Declining (de Lange et al., 2024), and so would provide an umbrella trigger of ecological significance for At Risk—Naturally Uncommon species, endemic to kauri forest.

unlikely because many of these taxa are likely to co-occur at the same site, or are likely to be “rare within the region or ecological district”, which would mean that they would trigger ecological significance under the NPS-IB. Therefore, there is the potential for these taxa to trigger ecological significance under the RPS criteria but not the NPS-IB criteria, but the number of instances in the field where this would occur would be likely to be low.

45. The RPS criteria has a mechanism for triggering ecological significance for taxa that are ranked as Data Deficient, but the NPS-IB criteria does not.
46. Data Deficient taxa lack sufficient information to adequately rank them, and so could be species that are highly threatened (or even extinct), or more common.
47. In the Kaipara District several taxa in the *Alseuosmia banksii* species complex are ranked as Data Deficient and are known to be present in Waipoua Forest (and elsewhere). Under the NPS-IB criteria, these would not trigger ecological significance but would under the RPS criteria. (These *Alseuosmia* taxa are often associated with kauri, and so would be afforded ecological significance where it is present because it is At Risk—Declining).
48. There are also several other Data Deficient taxa that may be present in the Kaipara District because they are known from adjacent Districts and are not well known or studied. These include:
 - a. *Caladenia minor* Hook.f. — Far North (and elsewhere);
 - b. *Celmisia graminifolia* Hook.f. — Whangārei (with similar/sister taxa also occurring in western Auckland);
 - c. *Coprosma* aff. *neglecta* (b) (AK 250769; Whangaroa) — Far North;
 - d. *Hymenophyllum polyanthos* (Sw.) Sw. — Far North (and elsewhere);
 - e. *Notogrammitis* aff. *ciliata* (a) (AK 289892; Mt William) — southern Auckland;

- f. *Notogrammitis* aff. *rawlingsii* (b) (AK 236942; Auckland) — southern Auckland; and
- g. *Thelymitra* aff. *brevifolia* (a) (AK 347116; Northland) — Far North and Whangārei.
49. Presence of these taxa at a site would automatically trigger ecological significance under the RPS criteria but not under the NPS-IB criteria.
50. Highly developed land is explicitly excluded from triggering ecological significance under the NPS-IB¹² but (except for manmade wetlands) could trigger ecological significance under the RPS criteria, e.g., because it is used by indigenous fauna for a critical part of its lifecycle, such as roosting or resting¹³.
51. In addition to the NPS-IB criteria, NPS-IB 3.20 directs regional councils to identify areas outside SNAs that are important for “specified highly mobile fauna”¹⁴; and directs local authorities to develop policies (etc.) for managing adverse effects to maintain viable populations¹⁵. This may include areas that would not trigger NPS-IB ecological significance criteria (because it is highly developed land¹²), but because of its importance to fauna it would trigger RPS criteria.
52. Some of the characteristics that maintain indigenous biodiversity in the NPS-IB, such as the size and shape¹⁶ of an area, are not used as triggers for ecological significance under the RPS criteria e.g. shape is not used.
53. The shape of an area is used in reserve design because sites with round shapes have relatively less edge, which means that they are less easy to invade. In my opinion, the shape of an area has little to do with whether it is ecologically significant or not, i.e., a site is not ecologically significant

¹² NPS-IB criterion (A5).

¹³ RPS criterion 4(c).

¹⁴ NPS-IB 3.20(1).

¹⁵ NPS-IB 3.20(3).

¹⁶ NPS-IB D(2)a.

because its round. It might mean that it is easier to maintain but this is an aspect of its management, rather than its ecological significance.

54. Smaller areas are also more easily invadable (and are more likely to be affected by single stochastic events, like a treefall creating a gap where weeds can invade), but size is a factor of a site's representativeness, which is where it is covered under the RPS criteria¹⁷. ("Invasibility" – how easily a site can be invaded or not – might be a factor of diversity and pattern, in that sites that have a highly diverse composition because of their canopy gaps might have higher ecological value if the invading species were diverse and indigenous.)
55. The RPS criteria specifically recognise the importance (and loss) of wetland types in Northland and use a minimum size criterion to trigger ecological significance based on that wetland type, regardless of the ecological district in which the wetland occurs. By contrast, the NPS-IB relies on the rarity of the ecosystem (wetland) type within the ecological district (or other criteria) to determine whether it would trigger ecological significance or not.
56. Wetlands are traditionally acknowledged as having approximately 10% of their former extent remaining (Ausseil et al., 2008), and so would automatically trigger other criteria¹⁸.
57. Other than where specified for where highly mobile fauna occur¹⁹, the NPS-IB applies in the terrestrial environment and does not extend into the coastal marine area²⁰. By contrast, the RPS criteria recognise the importance of particular habitat types, whether terrestrial or marine, and includes these as trigger-points for ecological significance²¹. Therefore, there is likely to be some divergence between results from the two systems because a number

¹⁷ RPS 1(b)i.

¹⁸ Such as NPS-IB criterion C(6)(d), which has a threshold of <20% of its pre-human extent in the ecological district, region, or land environment.

¹⁹ NPS-IB clause 3.20.

²⁰ NPS-IB 1.3(1).

²¹ RPS criterion 4(c).

of environments (such as marine) are not within the scope of the NPS-IB assessment criteria.

58. Both systems have provisions to recognise the importance of special features as triggering ecological significance, but the NPS-IB specifically recognises the importance of type localities. Type Localities are a cornerstone of biological science (underpinning the Linnaean nomenclatural system²²) because part of the naming of a new species requires defining the location that the specimen that defines the species came from, i.e., the type locality.
59. There appears to be very few type localities in the Kaipara District, possibly limited to only *Veronica saxicola* (de Lange & Rolfe, 2008), found only on Maungaraho Rock. It is a Threatened—Nationally Critical (de Lange et al., 2024) hebe which occurs at only one location, and so would automatically trigger ecological significance under both systems.
60. My assessment shows that the RPS Appendix 5 criteria and the NPS-IB Appendix 1 criteria essentially produce the same results. As such, I consider them effectively equivalent instruments for significance assessment purposes, and do not foresee any significant unintended consequences from applying one over the other. I understand that the KDC prefers the application of the RPS criteria, and, as they appear equivalent, I consider this an acceptable approach.

Part II – Harvesting Indigenous Timber

61. This part provides comment on Rule ECO-R1, providing permitted activity status for: *(k) the harvesting of indigenous timber carried out in accordance with a forest management plan or permit under Part IIIA of the Forests Act 1949.*

²² That is: the combination of a genus and its species.

62. Young & Norton (2017) studied vegetation clearance under the Forests Act 1949. They found that native woody vegetation on protected land²³ comprises 10% of Taitokerau/Northland, and native woody vegetation on private land makes up another 18%.
63. They note that even though these forests on private land are not 'old growth', they still contain important values for biodiversity conservation.
64. Their research on the spatial distribution of forest in Northland shows that when forest on public conservation land alone is considered, the average nearest neighbour distance between forest remnants is 1.2 km. However, when remnants (>10 ha) on private land are included, the average nearest neighbour distance decreases to 280 m and would be even less if smaller remnants were also included. This highlights the critical role that private native forest patches can play in sustaining birds like kiwi as well as many other species.
65. They found that for the three predominantly cattle-grazed Northland properties with regenerating native woody vegetation they studied, that 100–110 native plant species were associated with the forest remnants, including 20–30 native woody species (Young & Norton, unpublished data).
66. They noted that even small, regenerating tōtara (*Podocarpus totara* subsp. *totara*) remnants open to cattle grazing supported a surprisingly high number of native woody species, with 25 native woody species (excluding vines and tree ferns) occurring in a 2.3 ha remnant at one site, and 11 native woody species recorded from another 0.3 ha remnant²⁴.
67. They concluded that because wholesale indigenous vegetation clearance occurs, which is often not effective (resulting in sites reverting back to tōtara

²³ Including public conservation land, open space covenants under the Queen Elizabeth II Trust, and Nga Whenua Rahui kawenata.

²⁴ Note that they are not concerned with ferns, herbs or other non-woody species (which could easily include Threatened, At Risk, or regionally significant (Ford et al., in prep.) plants), so the actual number of indigenous plants in these remnants will be higher than their results indicate and could include species that trigger ecological significance.

or kānuka (*Kunzea robusta*) or weeds such as woolly nightshade (*Solanum mauritianum*), gorse (*Ulex europaeus*) or privet (*Ligustrum* spp.)), regenerating forests should be incentivised and managed sustainably under the Forests Act 1949.

68. A further consideration is that Threatened or At Risk flora is known to be present in some forest remnants in the Kaipara District. The following list is a summary of species in the Kaipara Protected Natural Areas (PNA) report (Smale, 2009), updated with current threat rankings (de Lange et al., 2024), that has been filtered on the likely occurrence in forest or shrubland, and the likelihood of occurring on private land:
- a. *Mida salicifolia* (At Risk—Declining), recorded during this survey from Opanake Road Reserve (P07/148), and from Lake Humuhumu Wetland and Forest (Q09/054).
 - b. *Pimelea tomentosa* (Threatened—Nationally Endangered), recorded from Okaro Creek (part Q09/051) and also at Lake Kahuparere (Q09/060); possibly more widespread. Also recorded from Pouto Point (part Q09/063) and Lake Humuhumu Wetland and Forest (Q09/054).
 - c. *Doodia mollis* (At Risk—Naturally Uncommon), recorded from Rotu Stream (P07/141), in the Kaihu Valley, and also at Tatariki in NRC Creamery Road Reserve (P07/068b) (AK 235015).
 - d. Fierce lancewood/*Pseudopanax ferox* (At Risk—Naturally Uncommon), recorded from Pretty Bush (Q09/061) (AK 203129); Pouto Point Wildlife Reserve (Q09/063) (AK 252746); and Lake Kahuparere (Q09/060) (AK 300268); and Tapu Bush (P09/001) (Cameron et al. 2001).
 - e. Rohutu/*Lophomyrtus obcordata* (At Risk—Declining), recorded from P09/001 (AK 180267) and Pretty Bush (Q09/061) (AK 203113).
 - f. Northern rātā/*Metrosideros robusta* (At Risk—Declining), recorded from Te Kawa Stream Forest (P07/121a); and Tapu Bush (P09/011) (Reid, 1977).

- g. *Olearia albida* (At Risk—Declining), recorded from Tapu Bush (P09/011) (Wright & Young 1991); and Pretty Bush (Q09/061) (Cameron et al. 2001).
69. In addition to the PNA report:
- a. *Ramarama/Lophomyrtus bullata* (Threatened—Nationally Critical) is known from multiple forest remnants throughout Taitokerau/Northland (including Maunganui Bluff, Waipoua Forest and Tutamoe Forest) and is likely to be present in privately owned forest remnants elsewhere in the District.
 - b. *Coprosma pedicellata* (At Risk—Declining) is known from small a kahikatea/ *Dacrycarpus dacrydioides* remnant in the Kaihu Valley. It had a disjunct distribution, with the next-closest population occurring near Gisborne, c.500 km south.
70. In my opinion, given the high diversity encountered in forest remnants, and the possibility of encountering a Threatened or At Risk species, it is appropriate that an assessment is undertaken under the appropriate criteria (NPS-IB or RPS), before allowing clearance of indigenous forest under the Forests Act 1949. I note that Mr Whitelock’s evidence (Paragraph 117) points out that the Forests Act 1949 and Resource Management Act 1991 (RMA) are both relevant to harvesting indigenous forests on private land under the Forests Act 1949. If a consent is required under the RMA, an assessment under the NPS-IB or RPS would need to be undertaken.

Conclusion

71. The assessment of ecological significance in the field will often be complex. For the purposes of my evidence, I have undertaken a theoretical desktop assessment, as a controlled exercise where only one or two of the features that trigger ecological significance were activated, to highlight differences between the systems. Results from actual field assessments are more likely

to trigger ecological significance because they are likely to involve assessing several features at once. I do not consider that this would change the overall result that the site is ecologically significant.

72. Therefore, in my opinion the results between the NPS-IB criteria and the RPS criteria are very similar. Both systems have strong alignment, triggering ecological significance for almost all the same attributes. However, because of the slightly different ways that “representativeness”, “diversity”, “pattern”, “rarity”, “distinctiveness”, and “ecological context” are interpreted in each system, there is some overlap between the criteria, e.g., “ecological context” has strong links with “diversity and pattern” and sometimes “representativeness”, so the same feature might trigger any one (or more) of these criteria.
73. Where there are some differences, most are minor. Although taxa that are ranked as At Risk or Data Deficient could trigger ecological significance under the RPS criteria but not the NPS-IB.
74. Some differences occur for specified highly mobile fauna, which are afforded separate provisions (outside the scope of the ecological assessment criteria) under the NPS-IB, but would be included as a trigger of ecological significance under the RPS criteria. However, I consider habitats of highly mobile fauna that are threatened, would trigger significance criteria.
75. Apart from the edge areas (mentioned above at paragraphs 89 and 90, and in more detail at paragraphs 57–60 and 61–65), the results from the two systems appear to be largely similar, which because they both use similar attributes as criteria, is not unexpected.
76. I therefore conclude the RPS formulation of ecological significance criteria which KDC prefers to use, will result in similar outcomes to the NPS-IB formulation of criteria. Because it is equivalent, I consider it is appropriate to use, even though the NPS-IB is in force.

77. In addition, in my opinion, given the high diversity encountered in forest remnants, and the possibility of encountering a Threatened, At Risk or regionally significant species, it is appropriate that an assessment is undertaken under the appropriate criteria (NPS-IB or RPS), in association with clearance of indigenous forest under the Forests Act 1949. I understand this will be undertaken in situations where the RMA would require a consent for the harvesting.

Andrew James Townsend



DATED this 22 day of May 2026

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Appendix A: side by side alignment of the two appendices to assess ecological significance.

| NPS-IB Appendix 1: Criteria for identifying areas that qualify as significant natural areas (SNAs) | RPS Appendix 5 - Areas of significant indigenous vegetation and significant habitats of indigenous fauna in terrestrial, freshwater and marine environments |
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| 1 What qualifies as an SNA | <i>Note that paragraphs have been moved around to align with a similar NPS-IB criterion, where possible. Numbering (bottom, right corner) relates to the relevant number/section in Appendix 5.</i> |
| 1. An area qualifies as an SNA if it meets any one of the attributes of the following four criteria: a) representativeness b) diversity and pattern c) rarity and distinctiveness d) ecological context | An area of indigenous vegetation or habitat(s) of indigenous fauna is significant if it meets one or more of the following criteria: 1 Representativeness 2 Rarity / distinctiveness 3 Diversity and pattern 4 Ecological context |
| 2. If an area would qualify as an SNA solely on the grounds that it contains one or more indigenous flora species that are Threatened or At Risk (declining), and those species are widespread in at least three other regions, the area does not qualify as an SNA unless: a) the species is rare within the region or ecological district where the area is located; or b) the protection of the species at that location is important for the persistence of the species as a whole. | |
| 3. If an area would qualify as an SNA solely on the grounds that it contains one or more indigenous flora species that are Threatened or At Risk (declining), and those species are widespread in at least three other regions, the area does not qualify as an SNA unless: a) the species is rare within the region or ecological district where the area is located; or b) the protection of the species at that location is important for the persistence of the species as a whole. | |
| 2 Context for assessment | |
| 1. The context for an assessment of an area is: a) its ecological district; and b) for the rarity assessment only, its ecological district, its region and the national context. | Ecological site: the area under assessment comprising one or more ecological units. Ecological sites are comparable with each other at relevant and recognised scales within the landscape. Current ecological classification systems include the ecological districts framework, freshwater biogeographical units and LENZ, and are expected to evolve in terrestrial, freshwater and marine environments as new information and technology develops. <i>[Definitions]</i> |
| 3 Manner and form of assessment | |
| 1) Every assessment must include at least: a) a map of the area; and b) a general description of its significant attributes, with reference to relevant criteria (as specified below); and | |

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| <ul style="list-style-type: none"> c) a general description of the indigenous vegetation, indigenous fauna, habitat, and ecosystems present; and d) additional information, such as the key threats, pressures, and management requirements; and e) for SNAs in areas of Crown-owned land referred to in clause 3.8(8), the conservation management strategy or plan or national park management plan that applies to the area. | |
| 2) An assessment under this appendix must be conducted by a suitably qualified ecologist (which, in the case of an assessment of a geothermal ecosystem, requires an ecologist with geothermal expertise). | <p><i>These criteria are intended to be applied by suitably qualified and experienced ecologists.</i></p> <p style="text-align: right;"><i>[Note i]</i></p> |
| A Representativeness criterion | 1 Representativeness |
| 1) Representativeness is the extent to which the indigenous vegetation or habitat of indigenous fauna in an area is typical or characteristic of the indigenous biodiversity of the relevant ecological district. | <p>Regardless of its size, the ecological site is largely indigenous vegetation or habitat of indigenous fauna that is representative, typical or characteristic of the natural diversity at the relevant and recognised ecological classification and scale to which the ecological site belongs:</p> <p style="text-align: right;"><i>[1(a)]</i></p> |
| <i>Key assessment principles</i> | |
| 2) Significant indigenous vegetation has ecological integrity typical of the indigenous vegetation of the ecological district in the present-day environment. It includes seral (regenerating) indigenous vegetation that is recovering following natural or induced disturbance, provided species composition is typical of that type of indigenous vegetation. | <p>Is typical of what would have existed circa 1840;</p> <p style="text-align: center;">or</p> <p style="text-align: right;"><i>[1(a)ii]</i></p> |
| 3) Significant indigenous fauna habitat is that which supports the typical suite of indigenous animals that would occur in the present-day environment. Habitat of indigenous fauna may be indigenous or exotic. | <p>1(a)iii. Is represented by faunal assemblages in most of the guilds expected for the habitat type; or</p> <p>Ecological unit: ... The Ecological Unit may include exotic vegetation types where they support indigenous fauna. <i>[Definitions]</i></p> |
| 4) Representativeness may include common-place indigenous vegetation and the habitats of indigenous fauna, which is where most indigenous biodiversity is present. It may also include 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, and it is not a measure of how well that indigenous vegetation or habitat is protected elsewhere in the ecological district. | <p>Regardless of its size, the ecological site is largely indigenous vegetation or habitat of indigenous fauna that is representative, typical or characteristic of the natural diversity at the relevant and recognised ecological classification and scale to which the ecological site belongs:</p> <p>If the ecological site comprises largely indigenous vegetation types;</p> <p style="text-align: right;"><i>[1(a)i]</i></p> |
| 5) When considering the typical character of an ecological district, any highly developed land or built-up areas should be excluded. | <p>Man made wetlands: These are wetlands developed deliberately by artificial means or have been constructed on sites where:</p> |

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| <p>NPS-IB Appendix 1: Criteria for identifying areas that qualify as significant natural areas (SNAs)</p> | <p>RPS Appendix 5 - Areas of significant indigenous vegetation and significant habitats of indigenous fauna in terrestrial, freshwater and marine environments</p> |
| | <p>a) Wetlands have not occurred naturally previously; and b) The current vegetation cover cannot be delineated as indigenous wetland; or c) Man made wetlands have been previously constructed legally. Man made wetlands do not include <i>induced wetlands</i>; <i>reverted wetlands</i> or wetlands created for conservation purposes for example as a requirement of resource consent. Examples of man made wetlands include wetlands created and subsequently maintained principally for or in connection with: a) Effluent treatment and disposal systems; or b) Stormwater management; or c) Water storage; or d) Other artificial wetlands and water bodies including or open drainage channels (that have been legally established) such as those in drainage schemes). These may contain emergent indigenous vegetation such as mangroves, rushes and sedges.</p> <p style="text-align: right;"><i>[Definitions]</i></p> |
| <p>6) The application of this criterion should result in identification of indigenous vegetation and habitats that are representative of the full range and extent of ecological diversity across all environmental gradients in an ecological district, such as climate, altitude, landform, and soil sequences. The ecological character and pattern of the indigenous vegetation in the ecological district should be described by reference to the types of indigenous vegetation and the landforms on which it occurs.</p> | <p>Ecological unit: Any combination of indigenous vegetation types (or suite of interrelated types) plus the landform they occur on. <i>[Definitions]</i></p> |
| <p><i>Attributes of representativeness</i></p> | |
| <p>7) An area that qualifies as an SNA under this criterion has at least one of the following attributes: a) indigenous vegetation that has ecological integrity that is typical of the character of the ecological district:</p> | |
| <p>b) habitat that supports a typical suite of indigenous fauna that is characteristic of the habitat type in the ecological district and retains at least a moderate range of species expected for that habitat type in the ecological district.</p> | <p>The <i>ecological site</i> is an important habitat for critical life history stages of indigenous fauna including breeding / spawning, roosting, nesting, resting, feeding, moulting, refugia or migration staging point (as used seasonally, temporarily or permanently). <i>[4(c)]</i></p> |
| <p>B Diversity and pattern</p> | <p>3 Diversity and pattern</p> |
| <p>1) Diversity and pattern is the extent to which the expected range of diversity and pattern of biological and physical components within the relevant ecological district is present in an area.</p> | |
| <p><i>Key assessment principles</i></p> | |

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| 2) Diversity of biological components is expressed in the variation of species, communities, and ecosystems. Biological diversity is associated with variation in physical components, such as geology, soils/substrate, aspect/exposure, altitude/depth, temperature, and salinity. | The ecological site plays an important hydrological, biological or ecological role in the natural functioning of riverine, lacustrine, palustrine, estuarine, plutonic (including karst), geothermal or marine system; or [4(b)] |
| 3) Pattern includes changes along environmental and landform gradients, such as ecotones and sequences. | |
| 4) Natural areas that have a wider range of species, habitats or communities or wider environmental variation due to ecotones, gradients, and sequences in the context of the ecological district, rate more highly under this criterion. <i>Attributes of diversity and pattern</i> | |
| 5) An area that qualifies as a significant natural area under this criterion has at least one of the following attributes: a) at least a moderate diversity of indigenous species, vegetation, habitats of indigenous fauna or communities in the context of the ecological district: | Indigenous vegetation or habitat of indigenous fauna that contains a high diversity of: i. Indigenous ecosystem or habitat types; or ii. Indigenous taxa; [3(a)] |
| b) presence of indigenous ecotones, complete or partial gradients or sequences. | Changes in taxon composition reflecting the existence of diverse natural features or ecological gradients; or [3(b)] Intact ecological sequences. [3(c)] |
| C Rarity and distinctiveness | 2 Rarity / distinctiveness |
| 1) Rarity and distinctiveness is the presence of rare or distinctive indigenous taxa, habitats of indigenous fauna, indigenous vegetation or ecosystems. | |
| <i>Key assessment principles</i> | |
| 2) Rarity is the scarcity (natural or induced) of indigenous elements: species, habitats, vegetation, or ecosystems. Rarity includes elements that are uncommon or threatened. | |
| 3) The list of Threatened and At Risk species is regularly updated by the Department of Conservation. Rarity at a regional or ecological district scale is defined by regional or district lists or determined by expert ecological advice. The significance of nationally listed Threatened and At Risk species should not be downgraded just because they are common within a region or ecological district. | Indigenous vegetation or habitat of indigenous fauna that supports one or more indigenous taxa that are threatened, at risk, data deficient or uncommon, either nationally or at the relevant ecological scale. [2(b)] |
| 4) Depletion of indigenous vegetation or ecosystems is assessed using ecological districts and land environments. | The ecological site comprises indigenous ecosystems or indigenous vegetation types that: Are either Acutely or Chronically Threatened land environments associated with LENZ Level 4); [2(a)] |
| | The ecological site comprises indigenous ecosystems or indigenous vegetation types that: |

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| | <p>Excluding man-made wetlands, are examples of the wetland classes that either otherwise trigger Appendix 5 criteria or exceed any of the following area thresholds (boundaries defined by Landcare delineation tool);</p> <p>a) Saltmarsh greater than 0.5 hectare in area; or b) Shallow water (lake margins and rivers) greater than 0.5 hectare in area; or c) Swamp greater than 0.4 hectare in area; or d) Bog greater than 0.2 hectare in area; or e) Wet Heathlands greater than 0.2 hectare in area; or f) Marsh; Fen; Ephemeral wetlands or Seepage/ flush greater than 0.05 hectares in area.</p> <p style="text-align: right;"><i>[2(a)iii]</i></p> |
| 5) Distinctiveness includes distribution limits, type localities, local endemism, relict distributions, and special ecological or scientific features. | |
| <i>Attributes of rarity and distinctiveness</i> | |
| 6) An area that qualifies as an SNA under this criterion has at least one of the following attributes: a) provides habitat for an indigenous species that is listed as Threatened or At Risk (declining) in the New Zealand Threat Classification System lists: | <p>Indigenous vegetation or habitat of indigenous fauna that supports one or more indigenous taxa that are threatened, at risk, data deficient ...</p> <p style="text-align: right;"><i>[2(b) in part]</i></p> |
| b) an indigenous vegetation type ... that is uncommon within the region or ecological district or | |
| an indigenous ... species that is uncommon within the region or ecological district: | <p>... or uncommon, either nationally or at the relevant ecological scale.</p> <p style="text-align: right;"><i>[2(b) in part]</i></p> |
| c) an indigenous species or plant community at or near its natural distributional limit: | <p>The <i>ecological site</i> contains indigenous vegetation or an indigenous taxon that is: Endemic to the Northland-Auckland region; or</p> <p style="text-align: right;"><i>[2(c)i]</i></p> <p>At its distributional limit within the Northland region;</p> <p style="text-align: right;"><i>[2(c)ii]</i></p> |
| d) indigenous vegetation that has been reduced to less than 20 per cent of its pre-human extent in the ecological district, region, or land environment: | <p>The ecological site comprises indigenous ecosystems or indigenous vegetation types that: Excluding wetlands, are now less than 20% of their original extent;</p> <p style="text-align: right;"><i>[2(a)ii]</i></p> |
| e) indigenous vegetation or habitat of indigenous fauna occurring on naturally uncommon ecosystems: | <p>The ecological site contains indigenous vegetation or an association of indigenous taxa that: Is part of an ecological unit that occurs on an originally rare ecosystem;</p> <p style="text-align: right;"><i>[2(d)ii]</i></p> <p>Is an indigenous ecosystem and vegetation type that is naturally rare or ...</p> <p style="text-align: right;"><i>[2(d)iii in part]</i></p> |
| f) the type locality of an indigenous species: | |
| g) the presence of a distinctive assemblage or community of indigenous species: | <p>The ecological site contains indigenous vegetation or an association of indigenous taxa that: Is distinctive of a restricted occurrence;</p> <p style="text-align: right;"><i>[2(d)i]</i></p> |

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| NPS-IB Appendix 1: Criteria for identifying areas that qualify as significant natural areas (SNAs) | RPS Appendix 5 - Areas of significant indigenous vegetation and significant habitats of indigenous fauna in terrestrial, freshwater and marine environments |
| h) the presence of a special ecological or scientific feature. | The ecological site contains indigenous vegetation or an association of indigenous taxa that: ... has developed as a result of an unusual environmental factor(s) that occur or are likely to occur in Northland; [2(d)iii in part] |
| | Is an example of nationally or regionally rare habitat as recognised in the New Zealand Marine Protected Areas Policy. [2(d)iv] |
| D Ecological context | 4 Ecological context |
| 1) 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 the surrounding landscape to maintain its indigenous biodiversity. | The <i>ecological site</i> Is a large example of indigenous vegetation or habitat of indigenous fauna [1(b)i] |
| <i>Key assessment principles</i> | |
| 2) Ecological context has two main assessment principles: a) the characteristics that help maintain indigenous biodiversity (such as size, shape, and configuration) in the area; and | The ... <i>site</i> is a large example of indigenous vegetation or habitat of indigenous fauna [1(b)i] Changes in ... composition reflecting the existence of diverse natural features ... [3(b)] |
| b) the contribution the 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). | Indigenous vegetation or habitat of indigenous fauna is present that provides or contributes to an important ecological linkage or network, or provides an important buffering function; or [4(a)] |
| <i>Attributes of ecological context</i> | |
| 3) An area that qualifies as an SNA under this criterion has at least one of the following attributes: a) at least moderate size and a compact shape, in the context of the relevant ecological district: b) well-buffered relative to remaining habitats in the relevant ecological district: c) provides an important full or partial buffer to, or link between, one or more important habitats of indigenous fauna or significant natural areas: d) important for the natural functioning of an ecosystem relative to remaining habitats in the ecological district. | |