Topic: Genetic Engineering and Genetically Modified Organisms

Recommendations in response to submissions on the Proposed Regional Plan for Northland - Section 42A hearing report

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Northland REGIONAL COUNCIL

Executive Summary

1. This report is prepared pursuant to Section 42A of the Resource Management Act 1991 (RMA). The report provides the Hearing Panel with recommendations relating to submissions on the Proposed Regional Plan for Northland (the "PRP") relating to Genetic Engineering and Genetically Modified Organisms (GE / GMO).

2. The views expressed in this report are mine and are not binding on the Hearing Panel. It should not be assumed that the Hearing Panel will reach the same conclusions.

3. Recommendations will be given after receiving written expert evidence from submitters (I will provide a further report after viewing that evidence prior to the hearing – by 19 October 2018) and may be further amended after presentations and evidence provided to the Hearing Panel (at the hearing).

4. The PRP as notified contains no rules relating to management of GE / GMOs. As will be detailed later in this report I am not, at least currently, in the position that I can confidently recommend provisions. In any case, in my view it is appropriate only to have provisions, under s12(3) of the RMA (and other RMA sections subject to the Panel's further consideration of issues raised in this report), relating to the Coastal Marine Area ("CMA"). I discuss possible wording of CMA provisions based on material that has been provided on behalf of submitters.

5. I raise two concerns in relation to land-based regional plan provisions. First, I question whether GE / GMOs can be defined as a contaminant under s15. Second, in my view submitters have not to date provided a sufficient basis for land-based provisions.

6. In relation to the CMA, the principal concerns I express in this report are that there is currently insufficient evidence, specifically relating to the Northland CMA environment, that there is any prospect of GE / GMO being introduced, or what risks, if any, there would be from whatever GE / GMO activities could locate in the CMA. If there is evidence of at least some potential that then creates a risk to the environment, then I acknowledge PRP provisions *may* be appropriate, including, importantly, for social and cultural wellbeing.

7. I expect that I will have greater confidence in giving advice about the possible or alternative provisions after the receipt of submitters' evidence. I have highlighted throughout this report where I believe further evidence is necessary. This includes having evidence that justifies GE / GMO provisions particular to the Northland CMA and questions I have about the necessity / appropriateness / wording of provisions that have been proposed on behalf of submitters.

8. In this report I provide some background about the emergence of a GE / GMO issue relevant to the RMA, specifically in relation to reports that were prepared for an inter-council working party. I provide an assessment of available evidence, and then a focus on the key matters relating to GE / GMO provisions raised in submissions.

9. The key matters I have identified are:

    1. Is there a legal constraint to including GE / GMO provisions in the Proposed Regional Plan? This is a legal question.
    2. Is there a legal obligation to include GE / GMO provisions in the Proposed Regional Plan? This is a legal question.
    3. Is there a potential basis to include GE / GMO provisions in the Proposed Regional Plan? This is a merits question, having regard to objectives and s32 RMA.
    4. If GE / GMO provisions are included in the Proposed Regional Plan what are the reasonably practical options that should be considered? This is a merits question, having regard to s32 RMA.
    5. Having regard to s32 RMA, what is the most appropriate option?
    6. Is the detail of the provisions proposed by submitters the most appropriate wording? This is a technical question.

10. The submissions are universally similar in what they seek. The approach I take in this report is to address key matters raised in submissions, rather than addressing submissions and/or and submission points individually. This is consistent with Clause 10 of Schedule 1 to the RMA. Submitters have the opportunity to speak to their individual submissions at the hearing.

Report author

11. My name is Peter Dean Reaburn. I am a consultant town planner and have been engaged by the Northland Regional Council ("NRC") to prepare this s42A report.

12. I am a Director of Cato Bolam Consultants Limited, based in that company's Henderson office. I have a Bachelor of Regional Planning (Honours) degree from Massey University and have over 37 years' planning and resource management experience. I have been a full member of the New Zealand Planning Institute since 1982. I am accredited under the Ministry for the Environment Making Good Decisions programme as an Independent Commissioner, with Chair's endorsement. I am a member of the Resource Management Law Association.

13. During my planning career I have held a number of senior management planning positions in both the public and private sectors, and in both policy and consenting roles. I have gained considerable experience in RMA processes, including those relating to statutory plan changes and reviews, resource consents and designation processes. I was engaged as a consultant lead planner by Auckland Council as a s42A reporting planner in relation to a number of Auckland Unitary Plan ("AUP") topics (although not the GE / GMO Topic). I have appeared regularly as an expert planning witness at Environment Court hearings. In recent times I have been involved in a number of issues where concerns to Maori have been paramount. I have also had considerable involvement in matters relating to the New Zealand Coastal Policy Statement, and some involvement in planning issues relating to the coastal marine environment.

14. I had an involvement as a consultant planner for the Environmental Defence Society ("EDS") at the appeals stage of the review of the Northland Regional Policy Statement, and I attended mediations on a number of topics of interest to EDS, although not the GMO Topic.

15. While my experience is broad, I have had no previous involvement on the part of any party in issues involving GE / GMOs. My only knowledge has come from a passing professional interest in how the issue was being addressed by various Councils around

the country. Accordingly, I have not entered this process having previously expressed any professional opinion about the topic of GE / GMOs.

16. I am accordingly not a GE / GMO expert. My expertise as a planner has been used to gather as much knowledge as I am able to obtain an understanding of the issues that have been raised in submissions, to conduct analyses of those issues, in particular by reference to the statutory planning framework, to review the more detailed input on the part of submitters that has been lodged in response to Minute 1, to raise some uncertainties I have in relation to the wording of provisions proposed by submitters and to provide other information that may be of assistance.

17. I have been given overall responsibility for this report and its recommendations. I have been given no direction or expectation in respect of what form my recommendations should take. I have however been helpfully provided with considerable background material by Ben Lee, NRC's Policy Development Manager. Mr. Lee has also responded to my many requests for information, and has reviewed my report and the preliminary draft provisions I have included in Appendix J for completeness and consistency.

18. Although this is a council hearing, I have read the Code of Conduct for Expert Witnesses contained in the Practice Note issued by the Environment Court in December 2014. I have complied with that Code when preparing this report and I agree to comply with it when giving oral presentations.

Overview of submissions

19. As noted, the PRP contains no GE / GMO rules. The only GE / GMO provision is a policy (D.1.1) relating to tangata whenua involvement in any resource consent application involving GE / GMO (this is further discussed later in the report). There is no specific s32 analysis relating to GE / GMO matters, although there is reference in the tangata whenua section (Section 3) to the RPS and proposed Policy D1.1 that identifies triggers (including GE / GMO) as matters of significance to tangata whenua.

20. A total of 83 submitters made submissions on GE / GMO[1]. The relevant Council summary of submissions is Part K.1 of the Summary of decisions requested (March 2018). This is attached at Appendix A. The submissions can be accessed at:

https://www.nrc.govt.nz/newregionalplan
(see "View the submissions and further submissions")

21. All submissions support inclusion of restrictive, precautionary or prohibitive provisions into the PRP for managing GE / GMO in the region, or parts of the region. In summary, the submissions seek that the PRP be amended to:

- give effect to the GMO 6.1.2 policy in the Northland Regional Policy Statement 2016 ("RPS");
- provide a region-specific approach to managing GMOs, taking into account environmental, economic, cultural and social well-being considerations and including strong precautionary and prohibitive GE provisions, policies and rules for all environments - land, inland waterways and coastal – and all possible vectors of such organisms;
- add provisions in the Coastal, Land and Water and Tangata Whenua parts of the PRP to address concerns to tangata whenua and potential adverse effects on biosecurity, indigenous biodiversity, existing non-GM primary producers and public health from outdoor use of GMOs;
- include provisions consistent with / align with / be the same as provisions in the Auckland Council Unitary Plan, and the Far North District Council and Whangarei District Council plan changes.

22. With one exception, the further submissions received support the primary submissions. The one exception is the further submission from Federated Farmers. That further submission covers a wide range of PRP matters. Relevant to GE / GMOs, part 124 of the submission opposes all of the primary submissions on the basis (directly quoted here) that:

[1] Note that there was some doubling-up of submissions in the submissions summary.

- *There is no scope to include the provisions sought in the Proposed Regional Plan*
- *Even if there was scope, there is no justification (in terms of RMA s32) for including the provisions sought in the Proposed Regional Plan*

23. It is important to note that neither the submissions, nor the further submissions were supported by expert analysis, apart from by way of reference to other material. While many submissions refer to what has occurred in Northland and Auckland Plans, and previous work that was carried out by a joint council working party, no specific s32 analysis or detailed set of proposed provisions was provided.

24. The Hearing Panel issued Minute 1 on 30 January 2018 which requested that s32 Evaluations be prepared for provisions which were not assessed by NRC (see Appendix D). In response to that Minute s32 evaluations and provisions were submitted by David Badham, consultant planner on behalf of the Whangarei District Council ("WDC") and Far North District Council ("FNDC") and Vern Warren, consultant planner on behalf of (originally) the Soil & Health Association, GE Free Tai Tokerau and many other submitters. Those documents, which I will term "the Badham s32" and "the Warren s32", are also attached at Appendix D.

25. I note, in respect of the above, that Council has recently (7 September 2018) received a letter on behalf of one of the submitters, Soil and Health Association of New Zealand, indicating that submitter will not be pursuing its request for land-based controls and will be focussing on the CMA (see Appendix G). It is also noted that the (Warren s32) will be withdrawn, with reliance being placed on the district Councils' (Badham) s32. This may help refine matters for the Hearings Panel, although on the basis that the Warren s32 was submitted on behalf of a large number of submitters it is still addressed in this report (noting, however that in most other respects it is similar to the Badham s32). A further letter received on behalf of the Soil and Health Association dated 10 September confirms that the withdrawal is on behalf of that submitter only.

Background and GE / GMO Issue

26. Genetic modification ("GM") refers to a set of techniques that alter genetic makeup by adding, deleting or moving genes (within or between species) to produce new and different organisms. Genetically modified organisms ("GMOs") are products of genetic modification. Another term often used to refer to the same technique is genetic engineering ("GE"). GMOs are not defined in the RMA, but it is defined in s2 of HSNO as follows:

> *Genetically modified organism means, unless expressly provided otherwise by regulation, any organism in which any of the genes or other genetic material -*
>
> *(a) have been modified by in vitro techniques; or*
>
> *(b) are inherited or otherwise derived, through any number of replications, from any genes or other genetic material which has been modified by in vitro techniques.*

27. Please see Appendix J for relevant definitions of GE / GMO terms.

28. The Environmental Protection Agency ("EPA") has a role in approving GMOs under the Hazardous Substances and New Organisms Act 1996 ("HSNO"). There has been significant research and attention given to whether and how concerns relating to GE / GMOs can or should also be addressed in RMA plans. The focus of concern is GMO activities involving outdoor release of a GMO. Activities that have been found not of (resource management) concern include research within contained laboratories involving GMOs, medical applications involving the manufacture and use of GM products, and food containing GM products that are not viable.

29. An Inter-Council Working Party on GMO Risk Evaluation and Management Options ("ICWP") was formed in 2003. The Working Party initially comprised the WDC, FNDC, Kaipara District Council, Rodney District Council, Waitakere City Council, Northland Regional Council and Auckland Regional Council, with Auckland City Council and North Shore City Council as observers. The new Auckland Council became a representative on the Working Party from 2010, replacing the former Auckland councils.

30. The ICWP commissioned a number of reports examining the risks local authorities could expect to face from outdoor activities involving GMOs, and options to respond to those risks. The reports are provided in Appendix C to this report and include:

- Community Management of GMOs: Issues, Options and Partnership with Government. Simon Terry Associates, March 2004 ("GMO I Report")
- Community Management of GMOs II: Risks and Response Options. Simon Terry Associates and Mitchell Partnerships, May 2005 ("GMO II Report")
- Community Management of GMOs III: Recommended Response Options. Simon Terry Associates and Mitchell Partnerships, September 2010 ("GMO III Report")
- Draft Proposed Plan Change to the District/Unitary Plan 2013.
- Draft Section 32 Report 2013, Volume 2: Supporting Documentation to the Draft Section 32 Report 2013

31. While the reports are sizeable, it is recommended that the Hearings Panel at least peruse them as relevant background. I do not intend to canvass the reports in detail, however my assessment is that they do provide a basis for recognising the management of GE / GMOs to be an RMA issue that is deserving of attention.

32. In summary, the following GE / GMO risks were identified (in the GMO II Report):

Economic risks:

- Economic damage through trace contamination appearing in non-GM crops;
- Market rejection due to concern (including perception) about trace GMO content;
- Opportunity costs, including the potential to inhibit branding and marketing.

Environmental risks:

- Uncertainty given the newness of the technology and limited research and monitoring,

- Unintended adverse effects on non-target species, including indigenous flora and fauna;
- GM plants becoming invasive weed-type species;
- Gene transfer to other organisms;

Cultural risks:

- Effects on Maori cultural beliefs (integrity of nature, upsetting whakapapa, mauri and wairua, failure to exercise Kaitiaki responsibilities);

33. The following are relevant outcomes from the process that was conducted:

1. While the requirements for approval under the HSNO legislation were acknowledged, it was considered there were matters that HSNO did not address that could or should be managed through the RMA process. These included concerns that HSNO has:

    - no liability provisions for damage arising as a result of an activity carried out in accordance with an approval from the EPA;
    - no requirement for applicants to prove they had the ability financially to meet costs should damage occur, or for bonds to be required for such eventualities;
    - no requirement to consider / adopt a precautionary approach (this is an option only);
    - no monitoring requirements apart from where it is relevant to assessing environmental risk.

2. A preferred regulatory response was then devised (Report III). It was not considered necessary to control "indoor" activities or prescribed medical or (other than viable) veterinary applications involving GMOs / GE.

3. Some activities were identified as requiring assessment through resource consent. A requirement would be that the EPA had already approved a release under the HSNO Act, thus ensuring that HSNO matters had been

addressed. The Council role would then be limited to determining whether there were additional, resource management - based conditions that would make release in the district or region permissible, or whether to decline the application.

4. Not all categories of outdoor GMO use needed to be regulated with the same degree of precaution. Different types of GMOs carry different risks, therefore similar GMOs were grouped together which could be expected to have similar types of effects.

5. Field trials were required to be designed with the objective of ensuring that no altered genetic material left the test site - greatly reducing the risks of harm arising. However breaches of trial conditions that could lead to GMOs escaping the trial site have occurred in New Zealand. Making all field trials a discretionary activity was considered to provide greater protection for the community by making the GMO operator financially accountable should adverse effects arise from a breach of conditions.

6. Given the high levels of potential harm and the uncertainties surrounding the extent of costs and benefits that could be expected from GMO releases, a precautionary approach was promoted that made GMO releases (both food-related and non-food related) a prohibited activity.

7. Adopting an adaptive risk management approach, periodic reviews could be undertaken as to whether further particular classes or individual GMOs should be made discretionary activities. Further, after later review, field trials (initially a discretionary activity) could be considered a restricted discretionary activity if a specific council determined this was appropriate in the context of their respective plan. Discretion would be limited to the general development and performance standards provided in the Plan Change.

8. At the point a set of GMOs demonstrated the potential to provide net benefits, a change to the relevant plan could then make these subject to discretionary or even permitted provisions.

34. A draft plan change and draft s32 document was then prepared, which has become the basis for the AUP, WDC and FNDC[2] provisions that have subsequently become operative (and are copied in Appendix I).

35. The advice I have been given[3] is that, while NRC was involved in the ICWP, the Council did not indicate any firm intention to proceed with GMO / GE provisions in its planning instruments. NRC was not involved at the stage of the ICWP process that produced the draft plan change or draft s32.

36. In October 2012 NRC notified its proposed regional policy statement for Northland ("RPS") and that document did not include provisions concerning or referring to GMOs. Council. NRC had considered including provisions but it's assessment at that stage was that they were not justified. In response to a large number of submissions raising concerns about that matter, Council's appointed Commissioners made recommendations, then adopted as decisions by the Council), notified in September 2013, to include provisions in the RPS relating to the use of GMOs. Those provisions are detailed later in this report.

37. Federated Farmers unsuccessfully appealed the decisions on jurisdictional grounds, and then failed in their subsequent High Court appeal. A further Federated Farmers appeal to the Court of Appeal was later withdrawn (in October 2017).

38. A more minor appeal was received from WDC. By the time of the hearing the issues had been narrowed to seeking one word change only, however Federated Farmers was involved again raising jurisdictional issues. The appeal was resolved in an Environment Court decision dated 12 April 2018. The relevant RPS provisions became operative on 14 June 2018.

39. At the time the PRP was prepared and notified (November 2017) the appeal challenges to GMO provisions had not been fully settled. As I have noted, the only reference to GE / GMO in the PRP as notified is in the D.1 Tangata Whenua Section, where a resource

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2 In the case of the FNDC provisions the operative date is 19 September 2018

3 Pers. comm. with Ben Lee, Council's Policy Development Manager and NRC's former planning manager Glenn Mortimer.

consent application involving the use of genetic engineering or release of genetically modified organisms to the environment must include an analysis of the adverse effects of an activity on tangata whenua and their taonga when an analysis is required for a consent application involving the use of GE / GMO..

40. The following note is included in the PRP (Page 3):

> *Note - the regional council has reserved its decision on including provisions in the Plan on regulating genetically modified organisms (GMOs). At the time of notification, there were still active appeals on the proposed GMO provisions in the Regional Policy Statement for Northland. The regional council want the legal and planning context to be clear before proceeding. The regional council will review whether it will proceed with a plan change to include provisions regulating GMOs once the appeals have concluded.*

GE / GMO Provisions in Regional Plans

41. Volume 2 Supporting Documentation to the Draft Section 32 Report prepared by the ICWP contains the following statement:

> *Regional Councils may also be able to develop specific regulatory approaches to the management of GMOs if legal opinion indicates such management falls within the scope of matters they can develop rules for within regional plans. For example, in relation to the coastal marine area (e.g. aquaculture), the maintenance of indigenous biodiversity (e.g. GMO weeds), or if GMOs are identified as a contaminant. Further investigation would be required if such mechanisms were to be pursued.* (Page 18)

42. It has been suggested that the following RMA sections are relevant to management of GE / GMOs[4]: Sections 12(1) (b), (c), (d), (e), (f), (g) 12(2)(a), 12(3), 14(1), 15(1) and (2).

43. The relevant parts of Section 12 are:

> ***12 Restrictions on use of coastal marine area***

[4] ICWP Draft Plan Change 2.6 Page 17 and / or Bradham or Warren s32 documents

(1) No person may, in the coastal marine area,—

(a) ….
(b) erect, reconstruct, place, alter, extend, remove, or demolish any structure or any part of a structure that is fixed in, on, under, or over any foreshore or seabed; or
(c) disturb any foreshore or seabed (including by excavating, drilling, or tunnelling) in a manner that has or is likely to have an adverse effect on the foreshore or seabed (other than for the purpose of lawfully harvesting any plant or animal); or
(d) deposit in, on, or under any foreshore or seabed any substance in a manner that has or is likely to have an adverse effect on the foreshore or seabed; or
(e) destroy, damage, or disturb any foreshore or seabed (other than for the purpose of lawfully harvesting any plant or animal) in a manner that has or is likely to have an adverse effect on plants or animals or their habitat; or
(f) introduce or plant any exotic or introduced plant in, on, or under the foreshore or seabed; or
(g) destroy, damage, or disturb any foreshore or seabed (other than for the purpose of lawfully harvesting any plant or animal) in a manner that has or is likely to have an adverse effect on historic heritage—

unless expressly allowed by a national environmental standard, a rule in a regional coastal plan as well as a rule in a proposed regional coastal plan for the same region (if there is one), or a resource consent.

(2) No person may, unless expressly allowed by a national environmental standard, a rule in a regional coastal plan or in any proposed regional coastal plan for the same region, or a resource consent,—

(a) occupy any part of the common marine and coastal area; or
(b) …..

(3) Without limiting subsection (1), no person may carry out any activity—

(a) in, on, under, or over any coastal marine area; or
(b) in relation to any natural and physical resources contained within any coastal marine area,—

in a manner that contravenes a national environmental standard, a rule in a regional coastal plan, or a rule in a proposed regional coastal plan for the same region (if there is one) unless the activity is expressly allowed by a resource consent or allowed by section 20A (certain existing lawful activities allowed).

(4) ….

44. GE / GMO activities may be associated with a physical structure, however the GE / GMO is not the structure itself. The PRP manages structures separately to uses or activities and s12(1)(b) is not therefore strictly relevant. Similarly, s12(1)(c), (d) and (e) refer to physical effects which do not appear to be clearly related to GE / GMO effects.

45. s12(1)(f) may be relevant to some GE / GMO activities. However I have not seen specific evidence referring to the relevance of this section, or s12(1)(g).

46. Section 12(2) refers to persons occupying the CMA, and does not appear to be relevant to GE / GMOs.

47. Section 12(3) would apply to specific rules relating to GE / GMO in the PRP.

48. Section 14(1) is:

> ***14 Restrictions relating to water***
>
> *(1) No person may take, use, dam, or divert any open coastal water, or take or use any heat or energy from any open coastal water, in a manner that contravenes a national environmental standard or a regional rule unless the activity—*
>
> *(a) is expressly allowed by a resource consent; or*
> *(b) is an activity allowed by section 20A.*

49. While Section 14(1) is mentioned in the ICWP Draft Plan Change it does not appear to relate to GE / GMOs and is not referred to in the Badham or Warren s32 documents.

50. Section 15 is:

> ***15 Discharge of contaminants into environment***
>
> *(1) No person may discharge any—*
>
> *(a) contaminant or water into water; or*

(b) contaminant onto or into land in circumstances which ma result in that contaminant (or any other contaminant emanating as a result of natural processes from that contaminant) entering water; or
(c) contaminant from any industrial or trade premises into air; or
(d) contaminant from any industrial or trade premises onto or into land—

unless the discharge is expressly allowed by a national environmental standard or other regulations, a rule in a regional plan as well as a rule in a proposed regional plan for the same region (if there is one), or a resource consent.

(2) No person may discharge a contaminant into the air, or into or onto land, from a place or any other source, whether moveable or not, in a manner that contravenes a national environmental standard unless the discharge—

(a) is expressly allowed by other regulations; or
(b) is expressly allowed by a resource consent; or
(c) is an activity allowed by section 20A.

(2A) No person may discharge a contaminant into the air, or into or onto land, from a place or any other source, whether moveable or not, in a manner that contravenes a regional rule unless the discharge—

(a) is expressly allowed by a national environmental standard or other regulations; or
(b) is expressly allowed by a resource consent; or
(c) is an activity allowed by section 20A.

(3) ….

51. The Volume 2 Supporting Documentation to the Draft Section 32 Report also contains the following statement:

Under any scheme for local authority involvement, regional councils are likely to play an important role through the issuing of policy statements and plans. However, a number of important issues remain to be clarified before it is known to what extent a regional council could manage the outdoor use of GMOs. These include whether a GMO would be a "contaminant" in terms of section 2 of the act. Crown Law considers that whether it meets the definition would be case dependent. (Page 25)

52. s15 RMA would apply only if GE / GMOs was regarded as being a "contaminant", which is defined in the RMA as:

> ***contaminant*** *includes any substance (including gases, odorous compounds, liquids, solids, and micro-organisms) or energy (excluding noise) or heat, that either by itself or in combination with the same, similar, or other substances, energy, or heat—*
>
> *(a) when discharged into water, changes or is likely to change the physical, chemical, or biological condition of water; or*
>
> *(b) when discharged onto or into land or into air, changes or is likely to change the physical, chemical, or biological condition of the land or air onto or into which it is discharged*

53. Evidence would be required to confirm that GE / GMOs meet this definition and to give confidence relating to the other matters I have raised above. As will be noted later in this report, these questions then have some significance in respect of the options that could be adopted to manage GE / GMOs.

Sufficiency of Evidence

54. In addition to the concerns I have raised in the preceding section of this report, this part of the report further examines what material is currently in the process.

55. It is important to note that the current PRP process is fundamentally different to that conducted by Auckland Council, WDC and FNDC. Those Councils proposed GE / GMO provisions via plan reviews and plan changes. The plan provisions were supported by a s32 analysis and specialist evidence at hearings. In this case, the Council has not proposed GE / GMO provisions in the PRP. The PRP s32 document does not assess GE / GMO provisions further than noting this is a matter that may be addressed at a later date, with there being a particular reference to the possibility of a future plan change. The Council has not engaged its own specialist advice as to whether there is a basis for including GE / GMO provisions into the PRP.

56. If the matter is to be addressed as part of this process (rather than a future plan change) reliance is therefore being placed on submissions and evidence being provided by submitters.

57. A number of submissions have sought further GE / GMO provisions, to the extent of identifying what parts of the PRP should be amended. The primary submissions are universal in their requested relief that the PRP address GE / GMOs, including via rules. It is appropriate in my view that that the submissions be given significant weight in respect of, at least, the indicated concerns of the community relating to social and cultural wellbeing.

58. From an analytical perspective I also believe the ICWP reports commented on above to be relevant. Those reports were prepared to cover the entire Northern Peninsula, obviously including the Northland Region and its CMA.

59. Policy 6.1.2 of the RPS, detailed later in this report, is also relevant.

60. In combination, this material in my view justifies the need to consider the issue of GE / GMOs in the PRP, if not now then at some future time through a possible regional plan change.

61. The submissions do not contain detailed provisions, or expert analysis with a focus on the Northland Region that fully justifies the introduction of provisions. In response to Minute 1 the Badham and Warren s32 documents do provide further detail, and the following commentary from the Badham s32 is particularly relevant (from Page 14):

> *The Problem, Opportunity and / or Requirement*
>
> *The resource management issue to be addressed is that there is scientific uncertainty use of GMOs within the CMA may adversely affect the environment, economy, and social and cultural resources and values, and could result in significant costs, as has been extensively researched through the Working Party's investigations.*
>
> *The absolute and relative benefits associated with the development and use of GMOs is continually being redefined as this and other forms of applied biotechnology advance. However there remains scientific uncertainty with respect to potentially significant adverse*

effects of GMOs on natural resources and ecosystems. The risks could be substantial and certain consequences irreversible, and could include the following:

- *Environmental risks, including adverse effects on other species and ecosystems by way of GM species becoming invasive and disrupting ecosystems; altered genes transferring to other organisms; and development of herbicide or pesticide resistance;*
- *Economic risks, including loss of income associated with actual or perceived contamination of non-GMO food products; negative effects on marketing and the international NZ 'green' image; and costs associated with environmental damage; and*
- *Social and cultural risks, including effects on Māori cultural beliefs; ethical concerns; and actual or perceived effects on human health of GMO foods.*

Once released into the environment, most GMOs would be very difficult to eradicate even if the funding were available for this, irrespective of the consequences. If the GMO is related to a food product, the "GE Free" food producer status of a district or region would likely be permanently lost, along with any marketing advantages that status confers.

Local regulation can address key gaps that have been identified in the national regulatory regime for the management of GMOs, in particular the absence of liability provisions and the lack of a mandatory precautionary approach. Benefits of local level regulation, in addition to the controls set by the EPA, include:

- *Ensuring GM operators are financially accountable in the long-term through bonding and financial fitness provisions for the full costs associated with the GMO activity. This includes accidental or unintentional contamination, clean-up, monitoring and remediation;*
- *Adoption of a precautionary approach to manage potential risks (economic, environmental, social and cultural) associated with the use of GMOs within the CMA;*
- *Protection of local/regional marketing advantages through reducing risks associated with market rejection and loss of income from GM contamination of non-GM species, and negative effects on marketing, branding and tourism opportunities; and*
- *Addressing cultural concerns of Maori, particularly given that Maori make up a considerably greater proportion of the population in Northland than is represented nationally.*

Given a council's general duties of care for its financial position and that of its constituents, there is a ready justification for the Council to enforce mandatory conditions to provide for both financial accountability and avoidance of economic damage. These controls would act in addition to those that may be set by the EPA under the HSNO Act.

62. I generally agree that the above statements are justified by the work that has been done to date, and included in Appendices A – D of this report. However, while the general issue of GE / GMOs and the role RMA plans may play in managing GE / GMOS is well-established, the material to date is not accompanied by specialist analysis strictly focussed on issues or potential issues relevant to the PRP. References in the submissions and the s32 documents are primarily to other Council processes, and the (more generally focussed) ICWP documentation referred to above. The notable exception is submissions that particularly refer to issues to tangata whenua, a particular matter I discuss later in this report.

63. In discussing the policy reasons for regional councils managing GMOs in RMA plans, the Environment Court stated[5] (underlining added):

Once having been approved for import and release into New Zealand under HSNO, regional authorities can provide for use and protection of them together with other resources in a fully integrated fashion, taking account of regional needs for spatial management that might differ around the country for many reasons, not the least of which might include climatic conditions, temperatures, soils, and other factors that might drive differing rates of growth of new organisms and/or of other organisms, as just a few of perhaps many examples.

64. The ICWP draft s32 document contains the following section relating to the CMA (presumably covering both the Auckland and Northland CMAs):

2. GENETICALLY MODIFIED ORGANISMS IN THE COASTAL MARINE AREA

2.1 Introduction

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5 *Federated Farmers of New Zealand v Northland Regional Council* [2015] NZEnvC 89, (2015) 18 ELRNZ 603, Paragraph 49

Aquaculture is a rapidly growing primary industry in New Zealand, and provides economic benefits such as employment, as well as social and cultural benefits. The Northern Peninsula accounted for 73% of the nation's total production of Pacific oysters in 2008. Due to the area's extensive coastline, isolation from heavily populated and polluted areas (particularly north of the urban Auckland area), temperate climate and high water quality, the Northern Peninsula is an ideal area for growing seafood, and further development of the aquaculture industry is expected in the future.

GM products are currently being researched and developed to provide opportunities for more efficient and effective aquaculture development across a wide range of species, in addition to the use of GM salmon that is well established in North America. Applications of GMOs in aquaculture include, use of hormones for enhanced growth and better production, improved feed conversion efficiencies; development of genetically superior broodstocks; improved disease resistance; and, increased tolerance to low temperatures and oxygen levels.

Risks associated with the use of GMOs in aquaculture are similar to those for land-based outdoor GMO use, and include:

- *Biodiversity risks at the population and ecosystem level through escapes of genetically distinct farmed fish or plants.*

- *Animal welfare issues in fish species, for example changes in colouration, cranial deformities and opercula overgrowth, and lower jaw deformation.*

- *Economic risk through GM contamination appearing in non-GM farmed species.*

- *Cultural risk (concerns of Maori) of preserving the integrity of nature, the mixing of genes from unrelated species, and which parts of the community stand to the benefit from the technology.*

*If appropriate containment measures (physical and biological) are adopted, general risks, for example to biodiversity and the economy, from GMOs if contained are likely to be small. However, the risks and consequences of release are potentially large and irreversible in the environment. Therefore, similar to the outdoor use of GMOs on the land, the Northern Councils have adopted a precautionary approach to the management of GMOs in the coastal marine area ("**CMA**").*

65. I acknowledge the above, however I remain concerned that there is little scientific or benefit-cost evidence targeted at the Northland Region that, as yet, gives confidence that I can recommend a detailed PRP response. I note that the reporting planners in respect of both the AUP and the WDC / FNDC processes deferred to and relied on specialist scientific and economic evidence as a basis for presenting their views and recommendations. That is, currently, a gap in this process. In my opinion it is necessary to have evidence specific to the Northland CMA, and also evidence as to whether any potential GE / GMO adverse effects are limited to aquaculture activities or whether other activities may be relevant.

66. I understand from discussions I have had with Mr. Badham and Mr. Warren that submitters will be providing expert evidence at the next step in the process.

67. Submissions that seek a GE / GMO response in the Land and Water parts of the PRP have not been responded to by the way of proposed detailed provisions in the Badham or Warren s32 documents, which both focus on CMA provisions. Mr. Warren raises a concern that Kaipara District does not (yet) have the type of district plan provisions that have been introduced by WDC and FNDC. However, apart from an argument that Kaipara District should be included as part of an overall integrated package for the Northland (and Auckland) regions, no further detail has been provided. I acknowledge the concern about integration, however have been advised that the Kaipara District Council passed the following resolution at its Extraordinary meeting on 5 September 2018 (underlining added):

> *That Kaipara District Council:*
>
> *1 Receives the District Planner's report "Genetically Modified Organisms - District Plan Position" dated 31 August 2018; and*
>
> *2 Believes it has complied with the decision-making provisions of the Local Government Act 2002 to the extent necessary in relation to this decision; and in accordance with the provision of s79 of the Act determines that it does not require further information prior to making a decision on this matter; and*
>
> *3 <u>Decides in principle that the District Plan be amended to include the necessary provisions related to Genetically Modified</u>*

Organisms similar to those of the other Upper North Island Local Authorities' District Plans; and

4 *Accepts that this District Plan change will be part of the comprehensive review of the District Plan; and*

5 *Conveys its intent to the Northland Regional Council in relation to the upcoming Proposed Regional Plan hearings.*

68. In any case, my concern is that to date there has been no consideration of how land and water provisions might look, or on what evidential basis they would be introduced. I note in that respect that the Auckland Unitary Plan provisions are solely district plan and regional coastal plan provisions – they do not cover other land and water aspects of regional plans. In my opinion significantly more detail would be required if amendments to the Land and Water parts of the PRP were to be considered. On that basis, I make no further comment in relation to the Land and Water parts of the PRP in this report.

69. I address GE / GMO and aquaculture later in this report (from paragraph 106).

Is there a legal constraint to including GE / GMO provisions in the Proposed Regional Plan?

70. The Federated Farmers Further Submission has raised jurisdictional issues.

71. In its decision on a Federated Farmers appeal relating to GE / GMO provisions in the RPS, the Environment Court referred to Section 30 of the RMA (functions of regional councils under the RMA) and noted:

> *Subject to some confined exceptions (e.g. concerning control of fisheries), it can be seen that the functions of regional councils under the Act are very broad, and cover a multitude of matters.*[6]

[6] *Ibid* Paragraph 23

72. The Court went on to determine that the management of GE / GMOS was consistent with a regional council's s30 functions. In respect of regional plans Section 66 RMA (Matters to be considered by regional council (plans)) requires amongst other matters that a regional council must prepare and change any regional plan in accordance with its functions under section 30 (s66(1)(a)). Under s67 (Contents of regional plans) a regional plan must also give effect to a regional policy statement (s67(3)(c)), a matter addressed further below. Section 68 (1) provides that:

> *A regional council may, for the purpose of—*
>
> *(a) carrying out its functions under this Act (other than those described in paragraphs (a) and (b) of section 30(1)); and*
>
> *(b) achieving the objectives and policies of the plan,—*
>
> *include rules in a regional plan.*

73. In a decision dated 12 May 2015, the Environment Court determined that:

> *..there is power under the RMA for regional councils to make provision for control of the use of GMOs through regional policy statements or plans*[7].

74. The decision was in response to an appeal by Federated Farmers, that the regulation of GMOs was the sole province of the EPA under HSNO and was not a matter for which a regional council may make provision in a regional policy. An appeal against that decision was later dismissed by the High Court[8]. These decisions have been included in Appendix B to this report.

75. The Environment Court noted that, while there was an overlap between the HSNO Act and the RMA, there was no express exemption for consideration of control of new organisms under the RMA in either the RMA or HSNO. The Court found that:

> *"….there is nothing present in these pieces of legislation to prevent the establishment of objectives, policies and methods to achieve integrated management of natural and physical resources in the broad terms directed by*

[7] *Ibid* Paragraph 60

[8] *Federated Farmers of New Zealand v Northland Regional Council* CIV-2015-488-0064 [2016] NZHC 2036

the RMA…. I consider that there is a readily identifiable policy reason for that in these pieces of legislation, read together. Once having been approved for import and release into New Zealand under HSNO, regional authorities can provide for use and protection of them together with other resources in a fully integrated fashion, taking account of regional needs for spatial management that might differ around the country for many reasons, not the least of which might include climatic conditions, temperatures, soils, and other factors that might drive differing rates of growth of new organisms and/or of other organisms, as just a few of perhaps many examples. I agree with the opposition parties that the RMA and HSNO offer significantly different functional approaches to the regulation of GMOs[9]."

76. I consider, given the Court decisions that have been made, that there is now no doubt that there is jurisdiction to include appropriate GE / GMO provisions in the PRP.

77. Submissions are required to be "on" a plan. This matter has been raised in discussions with Council's counsel. In this case the PRP as notified includes minimal reference to GE / GMOs. However, references are there, in Section D.1, and by way of the note referred to above. The PRP makes it clear that GE / GMO matters are not ignored, and will be considered further at a later date. A number of submissions have sought further GE / GMO provisions, to the extent of identifying what parts of the PRP should be amended. While the primary submissions themselves do not contain detailed provisions I believe they adequately highlight an issue to be addressed, including by reference to other Council processes and the ICWP documentation also referred to above. In my opinion the submissions can be regarded as being "on" the plan.

78. The second part of the Federated Farmers Further Submissions refers to the justification required under RMA s32 for including provisions in the PRP.

79. Section 32(1) states that an evaluation must:

a. examine the extent to which the objectives of the proposal being evaluated are the most appropriate way to achieve the purpose of this Act; and

b. examine whether the provisions in the proposal are the most appropriate way to achieve the objectives by—

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9 Paragraphs 48 and 49

i. identifying other reasonably practicable options for achieving the objectives; and

ii. assessing the efficiency and effectiveness of the provisions in achieving the objectives; and

iii. summarising the reasons for deciding on the provisions; and

c. contain a level of detail that corresponds to the scale and significance of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the proposal.

80. An assessment under subsection s32(1)(b)(ii) must—

a. identify and assess the benefits and costs of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the provisions, including the opportunities for—

i. economic growth that are anticipated to be provided or reduced; and
ii. employment that are anticipated to be provided or reduced; and

b. if practicable, quantify the benefits and costs referred to in paragraph (a); and

c. assess the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the provisions.

81. As I have noted above, the PRP s32 document does not assess GE / GMO provisions further than noting this is a matter that may be addressed at a later date. Some of the detail given in submissions would contribute to a s32, however none of the submissions provided a detailed s32 response. It is understood that this was a reason for the Panel asking in Minute 1 for submitters to, within the scope of their primary submissions, provide detailed provisions and an analysis of those provisions. Importantly, this information was provided prior to the notification date for Further Submissions.

82. The Badham and Warren s32 documents are of considerable assistance. They could (in combination or one only) be simply adopted by the Hearings Panel, at least as one basis for the Panel's findings. While I have raised doubt whether there is currently sufficient specialist scientific and economic evidence to satisfy s32 requirements, that can still be examined through the hearing process. It is ultimately for the Hearings Panel to decide whether a sufficient basis has been established. The information provided to

date is relevant, as is this s42A report and the submitter evidence and further advice / recommendations to come.

Is there a legal obligation to include GE / GMO provisions in the Proposed Regional Plan?

83. Section 67(3) of the RMA requires that a regional plan must give effect to:
    (a) any national policy statement; and
    (b) any New Zealand coastal policy statement; and
    (ba) a national planning standard; and
    (c) any regional policy statement.

84. There is no relevant national policy statement or national planning standard. However parts of the NZCPS and RPS are relevant and should be considered.

85. The NZCPS is identified in the Badham s32, Policies 2 and 3 being quoted. I agree those policies are relevant. In my opinion Objectives 1, 3 and 6 and Policies 4, 6, 7, 8, 11, 13, 21 and 23 are also relevant (See NZCPS 2010 in Appendix E). Policy 12 (Harmful aquatic organisms) could be relevant, although I am not sure that this applies to activities beyond those specifically listed (the specific list does not include GE / GMOs).

86. Some of these provisions are directive. For instance, Policy 23 (Discharge of contaminants) under (1)(d) requires that particular regard must be given to avoiding significant adverse effects on ecosystems and habitats after reasonable mixing. Policy 13 (1)(b) has a similar directive in respect of natural character and Policy 11 requires the avoidance of adverse effects on specified areas of indigenous biological diversity. It has now been clearly established in case law that "avoid", in the context of adverse effects on the attributes and characteristics of the resource being affected, does mean "avoid"[10].

87. In respect of giving effect to most provisions of the NZCPS I believe it would need to be shown that there are adverse effects or significant adverse effects of the type referred to

[10] SCC82-2013 *EDS v King Salmon*

in the relevant policies. Evidence has not been provided to date that this is or would be the case in the Northland Region. While reference has been made to evidence presented to other Councils in my opinion it is necessary to have evidence that is particular to this region.

88. This leaves Policy 3 (Precautionary approach) as being the NZCPS policy most likely to be relevant. Policy 3 is:

> ***Policy 3 Precautionary approach***
>
> *(1) Adopt a precautionary approach towards proposed activities whose effects on the coastal environment are uncertain, unknown, or little understood, but potentially significantly adverse.*
> *(2)* (N/A – refers to climate change)

89. Policy 6.1.2 – Precautionary approach in the RPS has recently been made operative. It is:

> ***6.1.2 Policy - Precautionary approach***
>
> *Adopt a precautionary approach towards the effects of climate change and introducing genetically modified organisms to the environment where they are scientifically uncertain, unknown, or little understood, but potentially significantly adverse.*
>
> ***Explanation**:*
> *Climate change and the introduction of genetically modified organisms to the environment have a greater potential for significant but scientifically uncertain adverse effects than other natural processes and activities.*
>
> *Taking a precautionary approach means that where there are threats of significant or irreversible adverse effects, and there is scientific uncertainty as to the extent of those effects, decision-makers shall assume the threat of significant or irreversible effects is a reality. The response should be in proportion to the degree of significance and irreversibility of the threat and the degree of scientific uncertainty.*
>
> *When adopting a precautionary approach decision-makers may apply the following criteria:*
>
> *Consideration of the degree of significance or irreversibility:*
>
> - *the scale of the threat;*
> - *the value of the threatened environment;*

- *whether the possible adverse effects are able to be managed or contained;*
- *the level of public concern; and*
- *whether there is a rational or scientific basis for the concern.*

Consideration of the degree of scientific uncertainty:

- *what would constitute sufficient evidence;*
- *the level of scientific uncertainty; and*
- *the potential to reduce scientific uncertainty*

90. Method 6.1.5 is:

> *The regional and district councils should apply Policy 6.1.2, when reviewing their plans or considering options for plan changes and assessing resource consent applications, but should not include plan provisions or resource consent conditions that attempt to address liability for harm.*

91. There is clearly alignment between Policy 3 of the NZCPS and Policy 6.1.2 of the RPS. If effect is given to the RPS, effect is also given to the NZCPS. If Council considers a plan change for GMO provisions, then it is obliged to apply Policy 6.1.2.

92. The PRP does have a policy (D.1.1) in the tangata whenua section that an analysis of effects on tangata whenua and their taonga is required when (amongst other things) *"the use of genetic engineering and the release of genetically modified organisms to the environment"* is likely. This policy is consistent with the RPS Policy 6.1.2. The question is whether the PRP is required to have further provisions relating to GE / GMOs.

93. Council sought legal advice on this matter which is attached at Appendix F. Neither the policy nor the method requires that Council includes GMO provisions in the regional plan. If the intention was that Council must include GMO provisions in the PRP, then the policy and/or method would have been worded accordingly, as is the case, for example, in Method 7.1.7 of the RPS which requires that:

> *(1) The district councils shall notify a plan change to incorporate finalised flood hazard maps into district plans in the first relevant plan change following the operative date of the Regional Policy Statement or within two years of the Regional Policy Statement becoming operative, whichever is earlier....*

94. The RPS appropriately explains the circumstances under which a precautionary approach should be adopted. These circumstances relate to the degree of significance and irreversibility of the threat, the degree of scientific uncertainty, the value of the threatened environment, whether the possible adverse effects are able to be managed or contained, the level of public concern, and whether there is a rational or scientific basis for the concern. I have highlighted my concerns that there is currently insufficient evidence to give me confidence that there is a basis for further provisions to be introduced into the PRP.

95. I conclude with the opinion that there is no legal obligation to introduce further GE / GMO provisions into the PRP.

Is there a potential basis to include further GE / GMO provisions in the Proposed Regional Plan?

96. Notwithstanding my conclusion that there is no legal obligation to include further GE / GMO provisions into the PRP and my concerns about the current sufficiency of expert evidence, in my opinion there is sufficient material in the work that was completed by the ICWP, the submissions and the Badham and Warren s32s to suggest that there is a *potential* basis to include further GE / GMO provisions in the CMA part of the PRP.

97. Since the matters identified by the ICWP (listed in Paragraph 32 above) additional matters have been identified. For instance, the Environment Court referred in the Federated Farmers decision to the possibility of cumulative effects[11] and also stated the following: [12]

> *… regional authorities might, with community input, consider particular regional approaches acknowledging social, economic and cultural wellbeing (amongst other things), somewhat beyond the more limited policy considerations for regulation of import and release of new organisms under HSNO. These aspects in s5 RMA are underpinned by the statutory requirements for preparing and publishing evaluation*

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11 *Federated Farmers of New Zealand v Northland Regional Council* [2015] NZEnvC 89, (2015) 18 ELRNZ 603, Paragraph 20

12 *Ibid* Paragraph 51

reports under s32, including by way of just one example, the requirement for assessment of benefits and costs of the environmental, economic, social, and cultural effects that are anticipated from the implementation of proposed provisions, including opportunities for economic growth and employment. Particular regional considerations would come in for study in a way not anticipated by HSNO.

98. If it can be shown that -

- there is even some potential for GE / GMO introduction into the Northland CMA, and
- it can be determined what activities (whether confined to aquaculture or other activities as well) need to be managed

- then in my opinion there would be a basis to introduce a suitable management approach into the PRP for the CMA. As noted, I am not yet comfortable with making that conclusion, without further scientific and economic evidence targeted at the Northland CMA environment.

99. However I am, within the bounds of my own expertise, able to provide further information and advice on other matters, that may be contribute to the Hearings Panel making a final decision.

Concerns to tangata whenua

100. Concerns to tangata whenua are raised in many submissions. Section 66(2A) of the RMA requires regional authorities to take into account any relevant planning document recognised by an iwi authority to the extent that its content has a bearing on the resource management issues of the region. Iwi and Hapu management Plans are referenced in the PRP Section 32 Report and include the following:

- Ngātiwai Trust Board (Te Iwi o Ngātiwai Iwi Environmental Policy Documents 2007; Ngātiwai Aquaculture Plan 2005)
- Te Rūnanga o Ngāti Rehia (Ngati Rehia Environmental Management Plan 2007 (updated 2015 yet to be formally lodged with council))
- Patuharakeke Te Iwi Trust Board Hapū (Environmental Management Plan 2015)

- Te Rūnanga o Ngāti Hine (Ngā Tikanga mo te Taiao o Ngāti Hine 2008)
- Kororareka Marae Kororareka Marae (Environmental Hapū Management Plan 2009)
- Te Uri o Hau Settlement Trust (Te Uri o Hau Kaitiakitanga O Te Taiao 2012)
- Ngāti Kuta (Whakatakoto Kaupapa Mo Te Hapū o Ngāti Kuta ki Te Rawhiti)
- Ngā Hapū o Te Wahapū o Te Hokianga Nui A Kupe (Ngāti Korokoro, Ngāti Wharara, Te Poukā) (Hapū Environmental Management Plan 2008)
- Te Rūnanga o Whaingaroa (Te U Kaipo RMU) (Kia Matau, kia mohia e ora ana Te U Kaipo 2011)
- Ngati Hau (Ngati Hau Environmental Management Plan 2016)
- Te Uriroroi, Te Parawhau and Te Māhurehure ki Whatitiri (Whatitiri Resource Management Plan 2016)
- Ngāti Kuri Trust Board (Pou Taiao – Environmental Management Plan 2018)
- Te Iwi O NgaiTakoto (Environmental Plan 2017)

101. These documents generally oppose the release of GMOs to the environment and advocate a precautionary approach to GMOs. Some advocate local management of GMOs. There is clearly a concern from tangata whenua in relation to any prospect of GE / GMO being introduced in the region.

102. D1.1 as notified is (underlining added):

> ***When an analysis of effects on tangata whenua and their taonga is required***
>
> *A resource consent application must include in its assessment of environmental effects an analysis of the effects of an activity on tangata whenua and their taonga(1) if one or more of the following is likely:*
>
> 1. *adverse effects on mahinga kai(2) and access to mahinga kai(3), or*
> 2. *any damage, destruction and loss of access to wāhi tapu, sites of customary value and other ancestral sites and taonga which Māori have a special relationship with(4), or*
> 3. *adverse effects on indigenous biodiversity where it impacts on the ability of tangata whenua to carry out cultural and traditional activities(5), or*
> 4. *the use of genetic engineering and the release of genetically modified organisms to the environment, or*

5. *adverse effects on tāiapure, mataitai or Māori non-commercial fisheries(6), or*
6. *adverse effects on protected customary rights(7), or*
7. *adverse effects on Sites and Areas of Significance to Tangata Whenua mapped in the Regional Plan (refer I 'Maps').*

Note:

The continued inclusion of clause 4 in this policy depends on the outcome of the appeals on the matter in the Regional Policy Statement

103. The relief sought in submissions is that the provisions in Section D.1.1 be strengthened[13]. However no further detailed relief is provided, including within the Badham and Warren s32 documents.

104. In response to similar concerns raised during the WDC and FNDC plan change processes those district plans included amendments to policies which then read as follows:

> *To ensure that a resource consent granted for the outdoor field trialling of a GMO is subject to conditions that serve to avoid, as far as can reasonably be achieved, risk to the environment**,** the mauri of flora and fauna, and the relationship of mana whenua with flora and fauna**,** from the use, storage, cultivation, harvesting, processing or transportation of a GMO.*

105. Specific references to flora and fauna could be made in an adjustment to D1.1, however I note that "3" in the policy already refers to indigenous biodiversity and the specific reference to GE and GMOs in "4" contains an appropriate reference to the environment (which would include flora and fauna). Reference to flora and fauna may be better placed in a new GE / GMO policy section, as further discussed below.

4. ~~*the use of genetic engineering and the release of*~~ *the use, cultivation, harvesting, processing or transportation of a genetically modified organisms* ~~*to the environment, or*~~

[13] See, for instance, the submission from Juliane Chetham on behalf of Patuharakeke Te Iwi Trust Board Inc.

Aquaculture

106. The following is an extract from the Proposed Plan s32[14].

> *Background*
>
> *There is approximately 850 hectares of approved aquaculture area within the coastal marine area of Northland. Around 700 hectares is used for oyster farms and 150 hectares for mussel farms. There is no definitive data on how much of the approved area has been developed. The majority of oyster farms are located in Whangaroa, Bay of Islands, Houhora, Kaipara and Pārengarenga harbours. There is a group of mussel farms in Houhora Bay (just north of Houhora Harbour) and a resource consent has recently been granted for a large mussel farm in the lee of Stephenson's Islands, Whangaroa. In addition to aquaculture activities, mussel spat is collected from seaweed at Ninety Mile Beach (Te Oneroa-a-Tōhe), which supplies more than 75% of seed to mussel farms throughout New Zealand.*
>
> *Aquaculture is currently a relatively small industry in Northland. In 2010 it was estimated that oyster farming and processing directly contribute $19 million to regional income and provided 336 full time jobs. Compare this to the forestry industry which was estimated to contribute $255 million to regional income in 2013.*
>
> *Estimated exports for Northland aquaculture declined from $101 million in 2008 to close to $38 million in 2013. The decline was largely a result of the oyster virus OsHV-1. In 2010 up to 80% of juvenile oysters on some farms were lost. The value of seafood processing in the region fell from $20 million in 2008 to $11 million in 2013. However the industry has bounced back, and in 2015 the export earning were $19.6 million, eclipsing the previous high of $18.1 million earned in 2006.*
>
> *Growth potential*
>
> *In Northland the aquaculture industry is generally positive about its prospects, having established an ambitious strategy for growth in 2012. Its goal is to double the value of oyster and pāua production, increase greenshell mussel production twenty-fold, and to develop kingfish into a major industry by 2030. The potential for shellfish aquaculture 'other than oyster and mussel has also been explored (for example, Geoduck). The Tai Tokerau Northland Growth Strategy 2015 identifies that there is potential for king fish farming in Northland and increased oyster and mussel production. The strategy suggests regulation (which include the rules in the current Regional Coastal Plan) is a key constraint to the development of aquaculture in Northland. Aquaculture has the potential to be an increasingly important contributor to the*

[14] Section 32 Document, Page 292

social, economic, and cultural well-being and health of Northland, especially in the more remote parts of the region. The New Zealand Coastal Policy Statement 2010 (coastal policy statement) requires councils to recognise the benefits of aquaculture and directs regional councils to include provisions in regional plans that provide for aquaculture in appropriate places (Policy 8, New Zealand Coastal Policy Statement 2010).

107. The GMO II Report states (Section 2.2.4):

> *Aquaculture currently earns the Northland region $20 million per annum. The industry's contribution is projected to increase to $50 million per annum by 2008.*
>
> *For the time being, shellfish (dominated by Pacific Oyster) are the major focus of aquaculture. However, a report commissioned by Enterprise Northland identities the potential for the industry to expand to include a much wider range of shell and finfish. While regulation of any marine fanning is clearly a regional council responsibility, and freshwater farming would tend to similarly come under its ambit, to the extent that a wider Northland peninsula response to the outdoor use of GMOs is being sought, GM aquaculture is a relevant activity to consider.*
>
> *A recent review conducted in the US has identified that GM research is being conducted internationally on at least 14 different finfish and shellfish species. This includes research on Atlantic salmon, rainbow trout, carp, goldfish, catfish, shellfish and prawn. The chief GM traits under trial include increased growth rates as well as temperature and disease resistance. In the US, regulators are now reviewing the first application for commercial breeding of a GM fish breed. Atlantic salmon have been engineered with the growth hormone from the Chinook salmon to increase growth rate and food conversion efficiency.*

108. While aquaculture is currently not extensive in the region, it does exist and has the potential to expand, both geographically and in relation to species. However GE / GMO modification is not currently used in New Zealand aquaculture. In that respect I note that NRC has very recently been advised that Aquaculture New Zealand has issued the following statement:

> *The New Zealand aquaculture industry does not currently farm Genetically Modified Organisms and supports a precautionary approach towards their use in the coastal marine environment. The industry follows global best practice standards around animal husbandry/safety and the sustainable management of resources, and*

recognises community and iwi values when adopting technologies and practices that maximise animal health and the health of the surrounding environment[15].

109. There is a question as to whether currently there is any prospect of GE / GMO in the Northland (or even New Zealand) aquaculture industry. The examples used in the GMO II report are not New Zealand examples. It would in my opinion be helpful for the Hearings Panel to have information as to whether there is any potential, in the Northland Region, for GE / GMO activities to be introduced in relation to mussel or oyster farming, or any other aquaculture that has the potential to be established in the CMA. In that respect, while in my opinion it is relevant to consider a potential effect of low probability which has a high potential impact (s5(2)(c) and s3 (f) RMA), evidence of *any* probability should be provided to justify that there is an issue to be addressed. Evidence from submitters would be helpful to address this matter.

Consistency between plans

110. Section 66 (2)(d) of the RMA requires that Council shall have regard to the extent to which the regional plan needs to be consistent with plans of adjoining regions. In that respect the submission from Auckland Council seeks that the PRP, if it is to have further GE / GMO provisions, has provisions that are the same as or similar to the operative AUP provisions. The Auckland CMA adjoins the Northland CMA, however I have not seen evidence to indicate how the adverse effects of GE / GMOs may cross from one region's CMA to the other, and should therefore be managed in a like manner.

111. This has also been a matter raised in the WDC and FNDC submissions. I note that the RMA does not specifically require that regard be given to consistency between district plans and the regional plan and I have yet to see evidence that there is a connection between issues relating to GE / GMOs that may be present in the CMA and effects on land, or *vice versa*.

112. It was clearly the original intention of the ICWP that a consistent approach be achieved for both regional and district councils, from Auckland north. I have raised an issue that

[15] Advised by way of email to Ben Lee NRC Policy Development Manager on September 12 2018 by Rebecca Clarkson | Environment Manager Aquaculture New Zealand

it may not necessarily be the case that the same circumstances will apply between regions or between districts and the region – if that was the case then it would perhaps be national standards that should be considered.

113. However, as considerable work has been carried out within the region and the adjoining region in my opinion it is sensible that, pending the Hearings Panel being satisfied a detailed response in terms of provisions is required, serious consideration be given to the form of provisions already introduced by these other Councils. I cover this in more detail in the concluding part of this report.

If GE / GMO provisions are included in the Proposed Regional Plan what are the reasonably practical options that should be considered?

114. The Warren s32 identifies three options, being "status quo - do nothing", "amendment to the HSNO Act" and the recommended option, which is provisions similar to those introduced by Auckland Council, WDC and FNDC. The Badham s32 identifies four options, being "status quo - do nothing", " Control of GMOs in the CMA consistent with the Auckland Unitary Plan Approach" (which is the preferred option), "Control of GMOs to prohibit all use of GMOs within the CMA" and "Control of GMO Discretionary Consent for Release".

115. Of these options, amendment to the HSNO Act is not possible under this (RMA) process and I consider prohibiting all GMOs in the CMA to be outside the scope of submissions and any expert analysis justifying that option.

Issue Statement

116. I note that the PRP does not include Issues (the RMA does not require this) and it would be inconsistent to have discrete issues relating to GE / GMOs only.

Objectives

117. The Badham s32 suggests, as an option, further objectives relating to GE / GMOs. The PRP as notified contained a single objective, however it has now been recommended that this be significantly expanded to include an objective relating to each of the various PRP sections. If GE / GMO provisions were to be introduced then it would be consistent to have an objective relating to that matter, and the following is a provisional wording:

> FO:15 *The coastal marine area is protected from potential adverse effects associated with the use of genetic engineering and the release of genetically modified organisms to the environment through the adoption of a precautionary approach, including adaptive responses, to manage uncertainty and lack of information.*

118. I note that the primary difference between this wording and that proposed in the Badham s32 is that specific reference is not made to storage and transportation of GMOs. These are uses not specifically managed by the submitter's proposed rules, and – where not associated with the listed permitted, discretionary and prohibited activities would appear to be permitted under the activity "use not specifically provided for or prohibited".

119. If it is shown that any potential adverse effects in the CMA relate only to aquaculture then the above objective may need to be modified further. This also applies to the following commentary on policy and rules (and where, ultimately, rules may be located within the PRP).

Policy and Rule Options

120. Whether s15, or alternatively s12(1) or (2) or s14, applies has some significance in terms of rules options. Those sections, if applicable, would require discretionary activity consent in the absence of the PRP specifically providing for GE / GMOs. Policies could still be included, even if rules were not. If, as I believe seems possible, only s12(3) applies, then the plan would need to include policies rules if GE / GMOs were to be managed. The following rules options should be viewed with that (current) uncertainty in mind.

Status Quo / Modified Status Quo Option

121. The Badham s32 identifies a "status quo" option as meaning that a GMO release in the CMA would be a discretionary activity, as it would be a discharge without a specific rule (under s15 of the RMA). That would, however, depend on GE / GMOs being confirmed as being a contaminant, an uncertainty raised earlier in this report.

122. Assuming s15 was applicable, a modification of this status quo option (one not currently identified as an option) would be for further GE / GMO policies to be introduced without any change to rules. This could include similar policies that have been proposed in the Badham and Warren s32 documents, as amended in Appendix J of this report.

123. Discretionary consent status for GE / GMO activities in the CMA would differ from the submitters' preferred approach by not having permitted activities, and not having prohibited activities.

124. Proposed permitted activities include:

1. research and trials within contained laboratories, and
2. medical applications (including vaccines), and
3. veterinary applications of non-viable genetically modified organisms (including vaccines), and
4. viable genetically modified organism vaccines provided the use is supervised by a veterinarian.
5. any other genetically modified organism release or use not specifically provided for or prohibited.

125. Whether or not requiring discretionary activity consent for these activities would be an undue burden on potential applicants would depend on whether there is any potential anyway for these types of activities to be proposed in the CMA. Submitters may wish to provide the Hearings Panel with further information on this matter.

126. Genetically modified organism releases – both food-related and non-food related - within the coastal marine area and any structure intended to house or otherwise contain plants and animals which are associated with outdoor genetically modified organisms releases would be a discretionary activity, rather than a prohibited activity as preferred by

submitters. I do not necessarily agree with a concern raised in the Badham s32, that this would will transfer greater liability to NRC to understand and potentially remediate the adverse effects of GMO releases, where supporting information on the adverse effects of releases may be insufficient. NRC could require information on an application to address those matters and applications could be refused if uncertainty remained.

127. However I do agree that in this area the status quo option would be inconsistent with that adopted in the district and adjoining regional coastal plans. Again, this is a matter submitters may need to provide evidence on, particularly in relation to the potential for this to be an issue in Northland's CMA.

128. Both the Badham and Warren s32s support the preferred option on the basis that it achieves consistency between the planning provisions of the various councils and adopts an adaptive management approach to GMOs in the CMA that adequately addresses the scientific uncertainty and potential for significant adverse effects on the environment, economy and social and cultural well-being.

129. Another option is that flagged in the PRP – consideration and possible introduction of a future plan change. If it is confirmed that there is potential for GE / GMO introduction into the Northland CMA then I have expressed the view that a management approach in the PRP would be appropriate. I would therefore tend to agree with a comment in the Badham s32 (under Risk of acting or not acting, Page 25), that there are less costs to the Council to include the proposed provisions at this time when compared with undertaking a separate plan change at a later date once the proposed RPS provisions are confirmed. If the Hearings Panel is satisfied that there is a sufficient basis after all information and evidence is provided, and an appropriate management response can be substantiated, then I do see advantages in addressing the matter now rather than later.

Having regard to s32 RMA, what is the most appropriate option?

130. In this report I have noted reservations I have in relation to the evidential basis for introducing further GE / GMO provisions into the PRP. I understand that further evidence

will be forthcoming, and I have been given the ability to provide further advice after the receipt of that evidence. Accordingly, I propose to complete this section of my report after seeing that submitter evidence.

Is the detail of the provisions proposed by submitters the most appropriate wording?

131. If I am able to conclude with advice that the option proposed in the Badham and Warren s32s is to be recommended as the most appropriate option then I have considered it may be of assistance, at this stage of s42A reporting, to comment on the proposed wording in relation to that option. This may assist all parties in addressing issues at the earliest possible time.

132. The ICWP Community Management of GMOs lll report examined options available to councils under the RMA for managing the outdoor use of GMOs and identified a preferred response option (via a plan change). A draft plan change was arrived at that has become the basis for now-operative provisions in the AUP and WDC / FNDC district plans (these are included in Appendix I). That has then been amended in the submitted s32 documents for recommended inclusion in the PRP.

133. At Appendix J I have attached a set of preliminary draft provisions that are a further amendment of the submitted provisions. These are provided for comment only at this stage, as I have reservations about the applicability of at least some of the proposed provisions to the Northland CMA, and also the workability of rules, particularly relating to bonds. Also, while I acknowledge particular wording has been adopted in other plans that does not mean it needs to be the wording in the PRP. I have suggested what I regard as being possibly a better wording / structure in Appendix J.

134. I expect that submitters will comment in their evidence and submissions on the concerns I raise, and the rewording proposed. I will then advise the Hearings Panel further.

<u>Objectives</u>

135. Following from the discussion above, I have suggested a possible GE / GMO objective. The objective is consistent with the s32 documentation that has been submitted to date.

Definitions

136. In terms of the definitions, these are as proposed in the Badham and Warren s32 documents. I note they are the same as have been introduced in the AUP and WDC / FNDC plans. I have not included a definition of "Adaptive management approach" which is proposed in the Warren s32 on the basis that term is not used in the rules.

Introduction to the Rules

137. I have not included the amendments proposed in the Badham s32 to the "legal effect of rules" part of Section C: Rules, as I do not see the additions as being necessary.

RMA Activities covered by the rules

138. Each rule contains a section listing the RMA activities the rule covers. The Badham s32 refers to a number of activities that do not appear to me to be relevant. For instance structures are covered by other rules. I have at this stage referred only to s12(3) of the RMA in these provisions.

Permitted Activities

139. I have provisionally adopted the permitted activities proposed in the Badham and Warren s32 documents, although reworded in a way that (to me) is simpler and avoids unnecessary repetition.

140. I note that the proposed permitted activities cover activities in laboratories, medical and veterinary applications. Submitters are invited to provide evidence in relation to the likelihood of these particular activities being conducted in the Northland CMA. If there is no clear basis to list these activities then the simple category of any activity not otherwise specifically provided for or prohibited would appear to suffice.

Discretionary Activities

141. I have adopted the proposed discretionary activity category proposed in the Badham and Warren s32 documents for field trials.

142. While I have provisionally included it, I have a question in relation to whether it is necessary or appropriate to have prior EPA approval. I acknowledge that the RMA and HSNO provisions cover different matters, however there is no clear reason why one consent should come before the other. Submitters may wish to provide the Hearings Panel with further advice on this point.

143. The following is an extract from the Badham s32 provisions, relating to bonding:

> *2. Council requires the applicant for the resource consent to provide a performance bond, with an approved trading bank guarantee, in respect of the performance of any one or more conditions of the consent, including conditions relating to monitoring required of the GMO activity (prior to, during and after the activity). This bond is to be available for payment to redress any adverse environmental effects and any other adverse effects to third parties (including economic effects) that become apparent during or after the expiry of the consent. The form of, time and manner of implementing and discharging the bond shall be decided by, and be executed to the satisfaction of Council.*
>
> *Note: All of the following matters will be considered when determining the amount and type of the bond:*
>
> *(a) what adverse effects could occur and the potential significance, scale and nature of those effects, notwithstanding any measures taken to avoid those effects;*
> *(b) the degree to which the consent holder for the activity has sought to avoid those adverse effects, and the certainty associated with whether the measures taken will avoid those effects:*
> *(c) the level of risk associated with any unexpected adverse effects from the activity;*
> *(d) the likely scale of costs associated with remediating any adverse effects that may occur*

144. I note that very similar provisions have been made in the AUP, WDC and FNDC plans (see Appendix I).

145. I have provisionally included bonding provisions (Appendix J), with simplified wording as follows:

> *A genetically modified organism field trial in the coastal marine area is a discretionary activity provided:*
> *…..*
>
> *2. Details of a performance bond, with an approved trading bank guarantee, are provided, to ensure the performance of any one or more of the conditions of the consent.*

The bond is to be available for payment to redress any adverse environmental effects and any other adverse effects to third parties (including economic effects) that become apparent during or after the expiry or surrender of the consent.

146. However, while again acknowledging provision for bonding is an important matter that has been raised in respect of RMA controls, as has already been included in other plans, I do have reservations about these provisions.

147. Bonding for GE / GMOs has been described as "*…a highly speculative exercise. It would involve consideration of a range of difficult issues…"* and *"there does not appear to be a principled basis for devising a special liability regime solely on the basis of a GM/non-GM distinction*" in a cabinet paper[16] (the paper is attached at Appendix H). Questions that arise, and on which submitters would helpfully provide answers, include:

1. How are potential adverse effects to be determined?
2. Would the bond amount need to be significantly high to cover any possible outcome?
3. Whatwould happen if the bond amount is not enough,?
4. How (legally) can a bond continue to apply after the expiry of a consent (note I have also added "surrender")?
5. Assuming a bond continue to apply after the expiry or surrender of a consent what responsibility may then be placed on the Council in relation to addressing

[16] Cabinet Paper: Government Response to the Royal Commission on Genetic Modification: Legislative changes for New Organisms – Paper 5: Liability Issues for GM

adverse effects when the original consent holder may no longer be present – including if the bond amount is not sufficient?

148. In any case, I have not included the proposed provision relating to "the level of risk associated with any unexpected adverse effects from the activity" on the basis that I cannot see how risks can be calculated for adverse effects that are not expected.

149. I have provisionally included the proposed discretionary activity category relating to Viable GMO Veterinary Vaccines not otherwise provided for. However I note that, where supervised by a veterinarian this is a permitted activity. Given the requirement for a resource consent, bonding, etc, one might expect that it would be the simple approach to have a veterinarian present. I understand that in some cases vaccines may be administered through feed, which is an example of when there would be no close supervision. In such cases it may appropriate that the use of such vaccines be evaluated through a resource consent process, however in my opinion the Hearings Panel would benefit by having evidence about potential activities in the CMA that could relate to this matter.

150. I have adopted the proposed prohibited activities for GMO releases, noting again that I do not see it as being necessary for this to include structures.

Policies

151. I have generally adopted the proposed policies, however reworded and restructured them so that they (to me) read better. I have not included policies that simply restate the rule activity categories.

Conclusion

152. In conclusion, in my opinion there is jurisdiction to include GE / GMO provisions in the PRP, although I am not as yet confidence on what basis, beyond s12(3) of the RMA.

153. I am tentatively of the view that, subject to the receipt of further evidence from submitters that addresses questions I have raised in this report, a GE / GMO management response would be appropriate in the PRP.

154. The concerns I have raised include whether there is any current prospect of GE / GMO being introduced into the CMA. If evidence is not available on that matter then any PRP response may need to rely on matters of social and cultural wellbeing. These are relevant concerns, however I am currently in doubt as to whether they are sufficient to justify the full range of response being sought by submitters.

155. In any case have some concerns about the provisions recommended on behalf of submitters, which I believe need further justification or explanation. I have addressed my concerns in alternative wording, however pending further evidence on questions I have raised, do not at this stage recommend that wording or expect that will be the final wording if provisions are to be introduced.

156. I hope to be able to provide more definitive views and recommendations after receipt of submitters' evidence.

Peter Reaburn
Consultant Planner