



Effects of Marine Farming on Landscape and Natural Character Values

Presentation to the Aquaculture Round-Table on the Hauraki Gulf Marine Spatial Plan

Assessing the effects of aquaculture on landscape and natural character values requires the following:



An understanding of:

- Why?
- What is Landscape? What is Natural?
- What is an outstanding natural feature or landscape?
- What is Natural Character?
- What is an appropriate assessment methodology
- Assessing the effects of aquaculture
- How is this done?
- Aquaculture and the New Zealand King Salmon Supreme Court Decision

Why?

Landscape and Natural Character are mentioned in the **Resource Management Act 1991 (RMA)** and within the **New Zealand Coastal Policy Statement 2010 (NZCPS)**.

Both are listed as ‘matters of national importance’ within the RMA

Specifically, it is the ‘*preservation of natural character*’ and the ‘*protection of outstanding natural features and landscapes*’...*from inappropriate subdivision, use, and development*

Why?

Within the NZCPS:

- **Policy 13: Preservation of Natural Character**

‘1(a) avoid adverse effects of activities on natural character in areas of the coastal environment with outstanding natural character’

1(b) avoid significant adverse effects and avoid, remedy or mitigate other adverse effects of activities on natural character in all other areas of the coastal environment’

- **Policy 15: Natural Features and Natural Landscapes**

follows similar suite of policies to Policy 13

Plus other Regional and District provisions

What is Landscape?

A **physical** area of land and people's **perceptions** of it

(Wakatipu Environment Society Inc vs The Queenstown-Lakes District Council, C180/99)

Such an approach is widely accepted professionally:

- European Landscape Convention
- NZILA Guidelines

Landscape Definition

‘An area, as perceived by people, whose character is the result of the action and interaction of natural and/ or human factors’.

European Landscape Convention

‘Landscape is the cumulative expression of natural and cultural features, patterns and processes in a geographical area, including human perceptions and associations’

New Zealand Institute of Landscape Architects

Landscape Definition

The following points can be taken from these definitions:

- A landscape is a **geographic area** (not just a view)
- Landscape involves both **physical** aspects and people's **appreciation** of them
- Appreciation entails **perceptual** (sensory) and **associative** aspects
- **Landscape character** is a **combination** of aspects (not a catalogue)

What is Natural?

Retains a liberal interpretation;

In terms of case law regarding natural landscapes the WESI* decision says that the criteria for naturalness includes:

- relatively unmodified and legible physical landform and relief;
- the landscape being uncluttered by structures and/ or obvious human influence;
- the presence of water;
- the presence of vegetation (especially native vegetation) and other ecological patterns

* (Wakatipu Environment Society Inc vs The Queenstown-Lakes District Council, C180/99)

What is Natural?

- Naturalness occurs on a continuum

Very Low	Low	Low - Moderate	Moderate	Moderate – High	High	Very High
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What is an Outstanding Natural Landscape or Feature?

The Landscape or Feature must be:

- **Outstanding**, and
- **Natural**

‘Outstanding’ has been discussed in many decisions

WESI* decision states:

“conspicuous, eminent, especially because of excellence”

“remarkable in”

* (Wakatipu Environment Society Inc vs The Queenstown-Lakes District Council, C180/99)

What is an Outstanding Natural Landscape or Feature?

- Still requires professional **judgement**
- Determination of appropriate **'thresholds'**

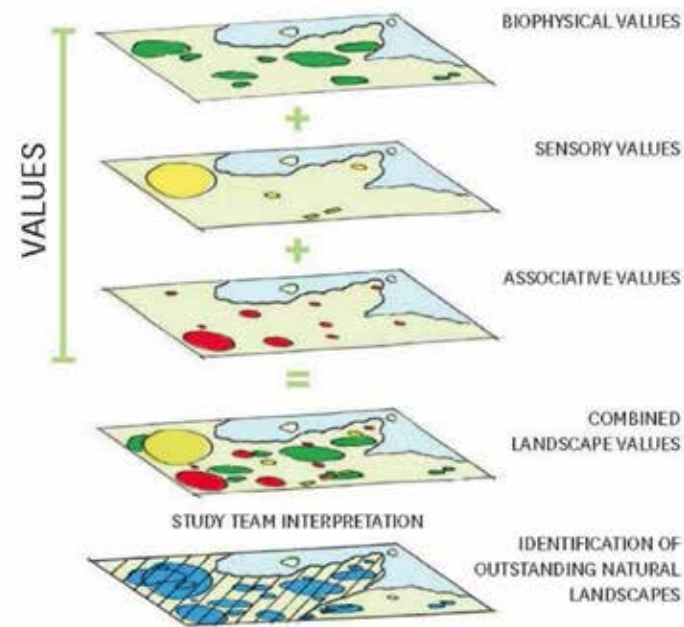
How big is a Landscape or Feature?

- A **landscape** is an **area** that is perceived as a whole: either **experienced from within** or seen as the **whole of the outlook**
- A **feature** is a **discrete element** within a landscape
- Small landscapes can **nest** within larger landscapes

How to analyse a landscape?

- As defined, landscape comprises many **factors**
- Factors are simply **things to consider**
- ‘Pigeon Bay’ factors are helpful but not an exhausted list
- Current thinking and **best practice** is focussed on three attributes:
 - **Biophysical** factors
 - Perceptual or **Sensory** factors
 - **Associative** factors
- These are important matters to landscapes

How to analyse a landscape?



- It's not just about outstanding natural landscapes

What is Natural Character?

- No definitive definition, however has been recently articulated through a DOC run workshop to mean:

Natural Character is the term used to describe the natural elements of all coastal environments. The degree or level of natural character within an area depends on:

- 1. The extent to which natural elements, patterns and processes occur;*
- 2. The nature and extent of modifications to the ecosystems and landscape/seascape.*

The highest degree of natural character (greatest naturalness) occurs where there is least modification.

The effect of different types of modification upon the natural character of an area varies with the context, and may be perceived differently by different parts of the community.'

Natural Character of the coastal environment:

Both the terms Coastal Environment and Natural Character stem from the RMA 1991 and are listed under Section 6:

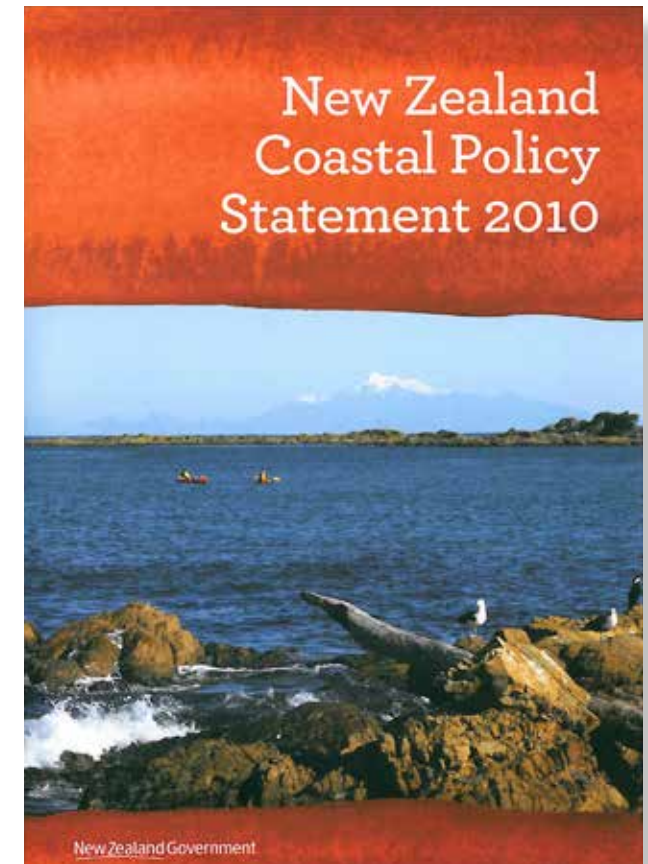
'In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for the following matters of national importance:

(a) the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development

Natural Character of the coastal environment:

Preservation of natural character under the NZCPS 2010

- The 2010 NZCPS tasks local authorities with undertaking studies in the coastal environment;
- This requires councils to identify the coastal environment (Policy 1)
- Councils need to undertake an assessment of natural character by mapping or otherwise identifying at least areas of high natural character (Policy 13-1(c))
- NZCPS provides greater guidance over what is contained within the Coastal Environment
- It uses the term 'outstanding natural character';
- Endorses the view that natural character is made up of both biophysical/ ecological aspects, as well as perceptual and is different from natural landscapes and features.



Policies 1, 13, 14 and 15

Policy 1 sets the study area through the identification of the 'Coastal Environment'

Policy 13: Preservation of Natural Character

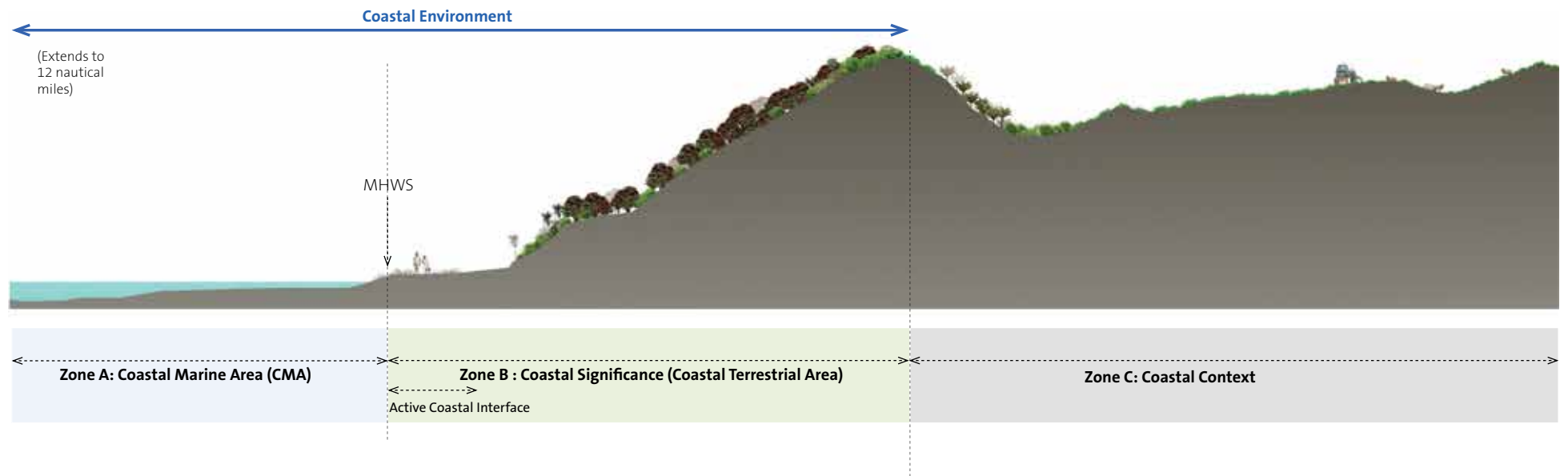
Policy 14: Restoration of Natural Character

Policy 15: Natural Features and Natural Landscapes

Policy 1: Extent and Characteristics of the Coastal Environment

- (1) *Recognise that the extent and characteristics of the coastal environment vary from region to region and locality to locality, and the issues that arise may have different effects in different localities.*
- (2) *Recognise that the coastal environment includes:*
 - a) *The coastal marine area;*
 - b) *Islands within the coastal marine area;*
 - c) *Areas where coastal processes, influences or qualities are significant, including coastal lakes, lagoons, tidal estuaries, salt marshes, coastal wetlands, and the margins of these;*
 - d) *Areas at risk from coastal hazards;*
 - e) *Coastal vegetation and the habitat of indigenous coastal species including migratory birds;*
 - f) *Elements and features that contribute to the natural character, landscape, visual qualities or amenity values;*
 - g) *Items of cultural and historic heritage in the coastal marine area or on the coast;*
 - h) *Inter-related coastal marine and terrestrial systems, including the intertidal zone; and*
 - i) *Physical resources and built facilities, including infrastructure, that have modified the coastal environment.*

COASTAL LANDSCAPE: HILL COUNTRY



COASTAL LANDSCAPE: PLAINS

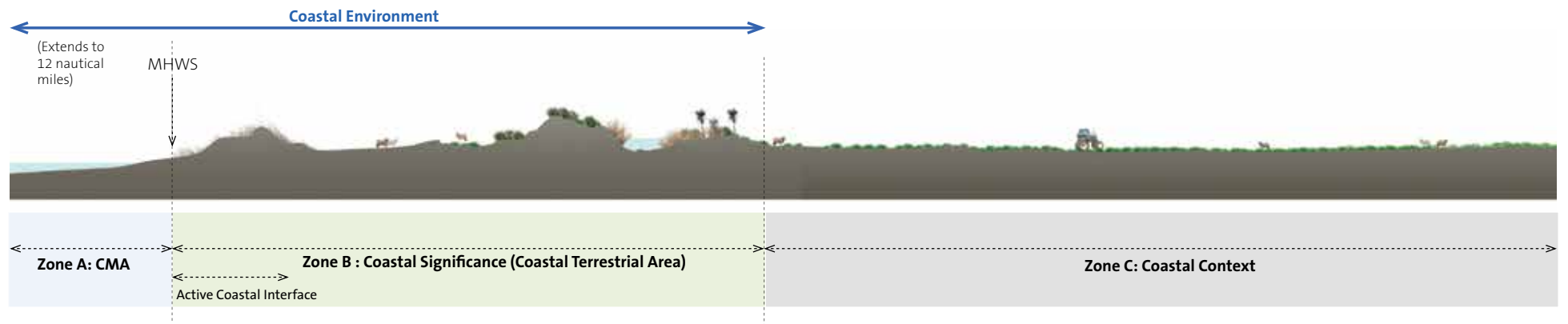


Figure 1: Diagram of the Coastal Environment

Policy 13: Preservation of Natural Character

(1) To preserve the natural character of the coastal environment and to protect it from inappropriate subdivision, use and development:

- (a) avoid adverse effects of activities on natural character in areas of the coastal environment with outstanding natural character; and*
- (b) avoid significant adverse effects and avoid, remedy or mitigate other adverse effects of activities on natural character in all other areas of the coastal environment;*

including by:

- (c) assessing the natural character of the coastal environment of the region or district, by mapping or otherwise identifying at least areas of high natural character; and*
- (d) ensuring that regional policy statements, and plans, identify areas where preserving natural character requires objectives, policies and rules, and include those provisions.*

Policy 13: Preservation of Natural Character

(2) Recognise that natural character is not the same as natural features and landscapes or amenity values and may include matters such as:

- (a) natural elements, processes and patterns;*
- (b) biophysical, ecological, geological and geomorphological aspects;*
- (c) natural landforms such as headlands, peninsulas, cliffs, dunes, wetlands, reefs, freshwater springs and surf breaks;*
- (d) the natural movement of water and sediment;*
- (e) the natural darkness of the night sky;*
- (f) places or areas that are wild or scenic;*
- (g) a range of natural character from pristine to modified; and*
- (h) experiential attributes, including the sounds and smell of the sea; and their context or setting.*

It is generally accepted that naturalness varies across a spectrum

Indigenous/ Pristine	Very High	High	Moderate High	Moderate	Moderate Low	Low	Very Low	Totally Modified
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Case law has indicated that ‘natural’ does not necessarily mean ‘pristine’



Natural Character is essentially a study of naturalness:

Naturalness comprises both:

Ecological naturalness (or indigenous nature) and

Landscape naturalness (or perceptions of nature)

Natural Character is therefore an understanding of both aspects

Policy 13(2) Recognise that natural character is not the same as natural features and landscapes or amenity values and may include matters such as:

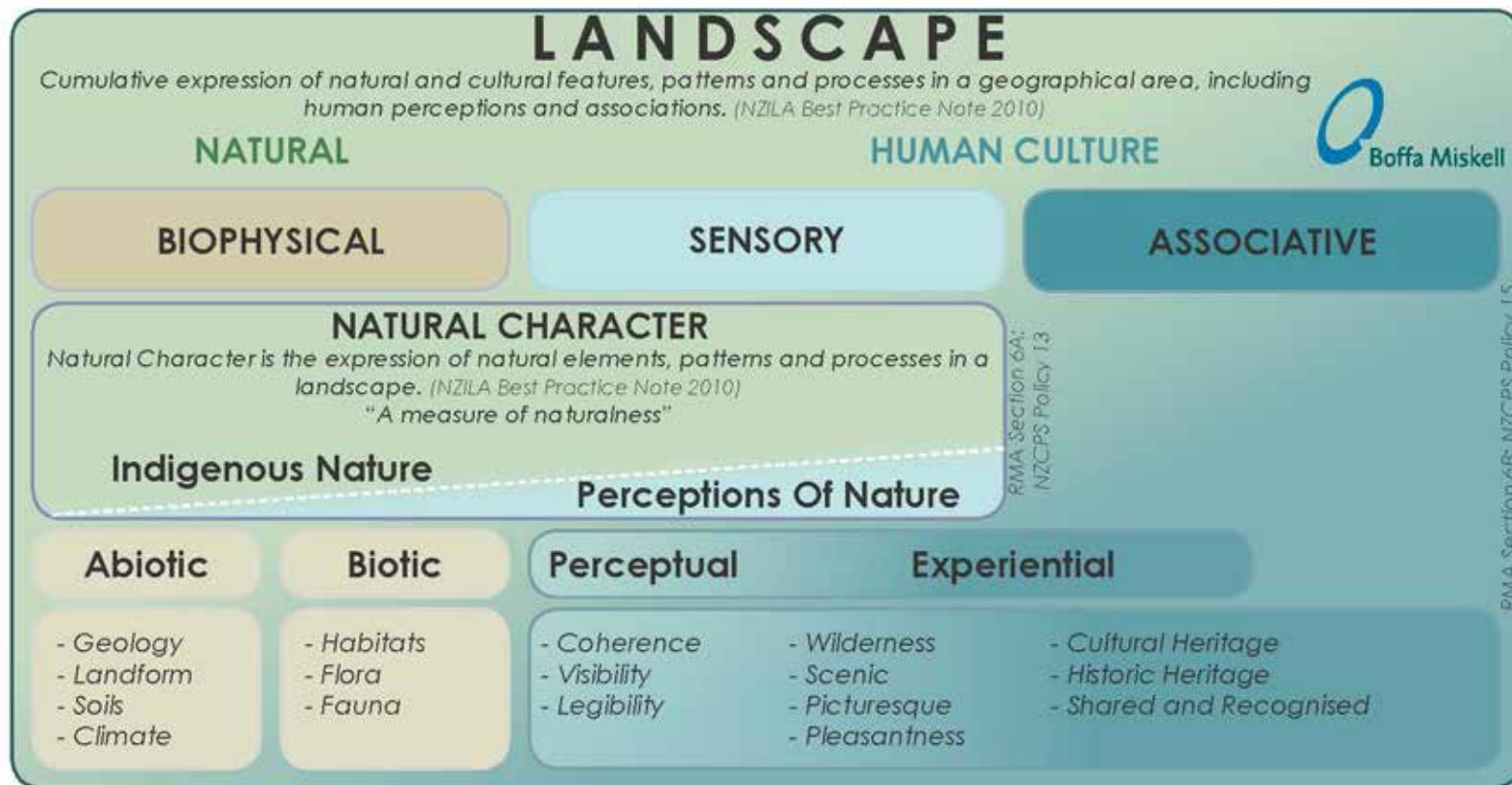
- (a) natural elements, processes and patterns;*
- (b) biophysical, ecological, geological and geomorphological aspects;*
- (c) natural landforms such as headlands, peninsulas, cliffs, dunes, wetlands, reefs, freshwater springs and surf breaks;*
- (d) the natural movement of water and sediment;*
- (e) the natural darkness of the night sky;*
- (f) places or areas that are wild or scenic;*
- (g) a range of natural character from pristine to modified; and*
- (h) experiential attributes, including the sounds and smell of the sea; and their context or setting.*

ABIOTIC (or non-living)

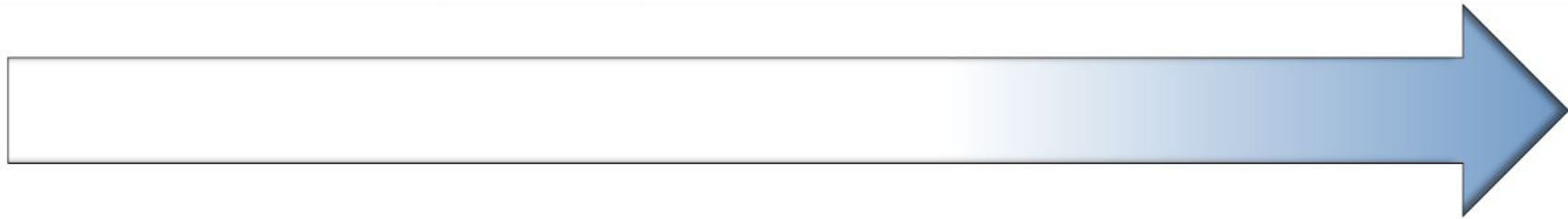
BIOTIC (living)

EXPERIENTIAL (inc. perceptual)

Policy 13	Assessment	Policy 15
Natural Character Policy 13(2) <ul style="list-style-type: none"> (a) Natural elements, processes and patterns (b) Biophysical, ecological, geological, geomorphological (c) Natural landforms (d) Natural movement of water / sediment (e) Natural patterns of darkness / night sky 		Natural Features, Landscapes (including Seascapes) Policy 15(c) <ul style="list-style-type: none"> (i) Natural science factors (ii) Presence of water bodies (v) Vegetation (ix) Historic and heritage associations
<ul style="list-style-type: none"> (f) Wild and scenic areas / places (h) Experiential attributes: <ul style="list-style-type: none"> - Sounds / smells / context or setting 		<ul style="list-style-type: none"> (iv) Aesthetic values (memorability and naturalness) (vi) Transient values (vii) Shared and recognised (viii) Cultural / spiritual values (x) Wild or scenic values



Very Low	Low	Low - Moderate	Moderate	Moderate – High	High	Very High
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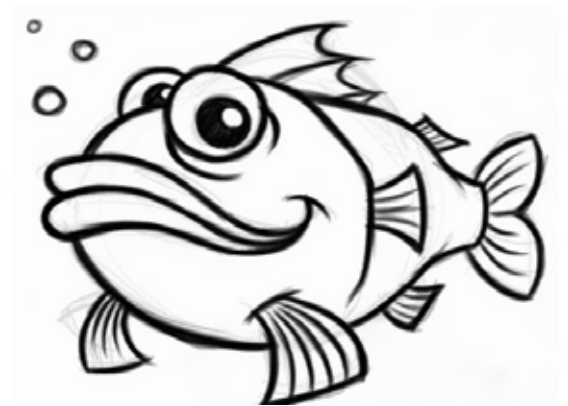


POTENTIAL TO HAVE
OUTSTANDING NATURAL
CHARACTER

Assessing the effects of aquaculture....

...on Landscape, Natural Character and Visual Amenity values requires addressing the following:

- Evaluate **existing baseline**
- Understand the **various elements** of the proposed marine farm
- Analyse the **ability of the proposal to be absorbed into the landscape/ seascape** through an understanding of the likely effects

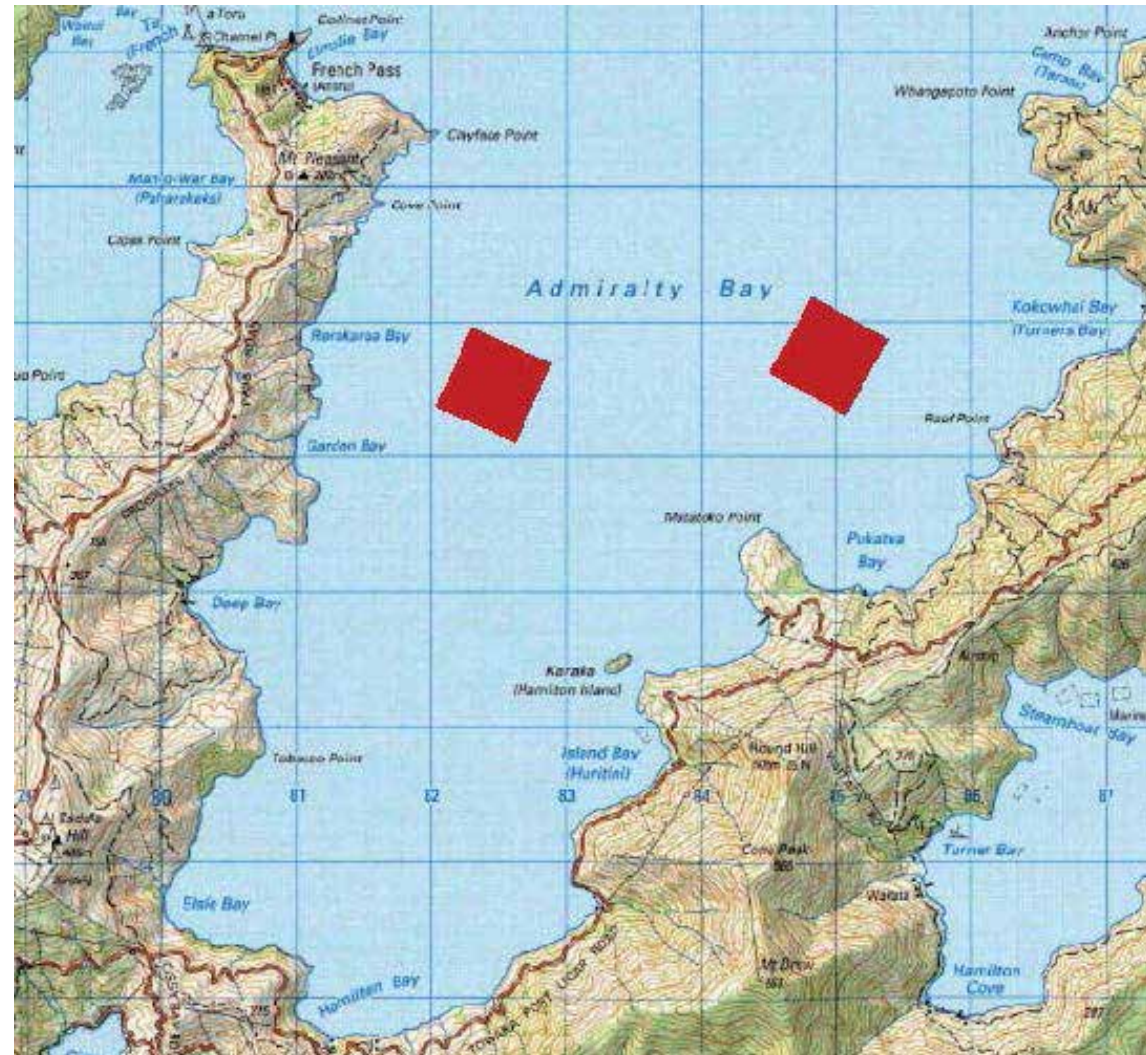


Just because something can be seen does not mean that adverse effects are created

Aquaculture incorporates a number of elements that can impact on the landscape, natural character and visual amenity values of an area:



Also Size and Location...



...density of buoys, colour of buoys...



...glare, reflection and lighting...



...including night lighting...

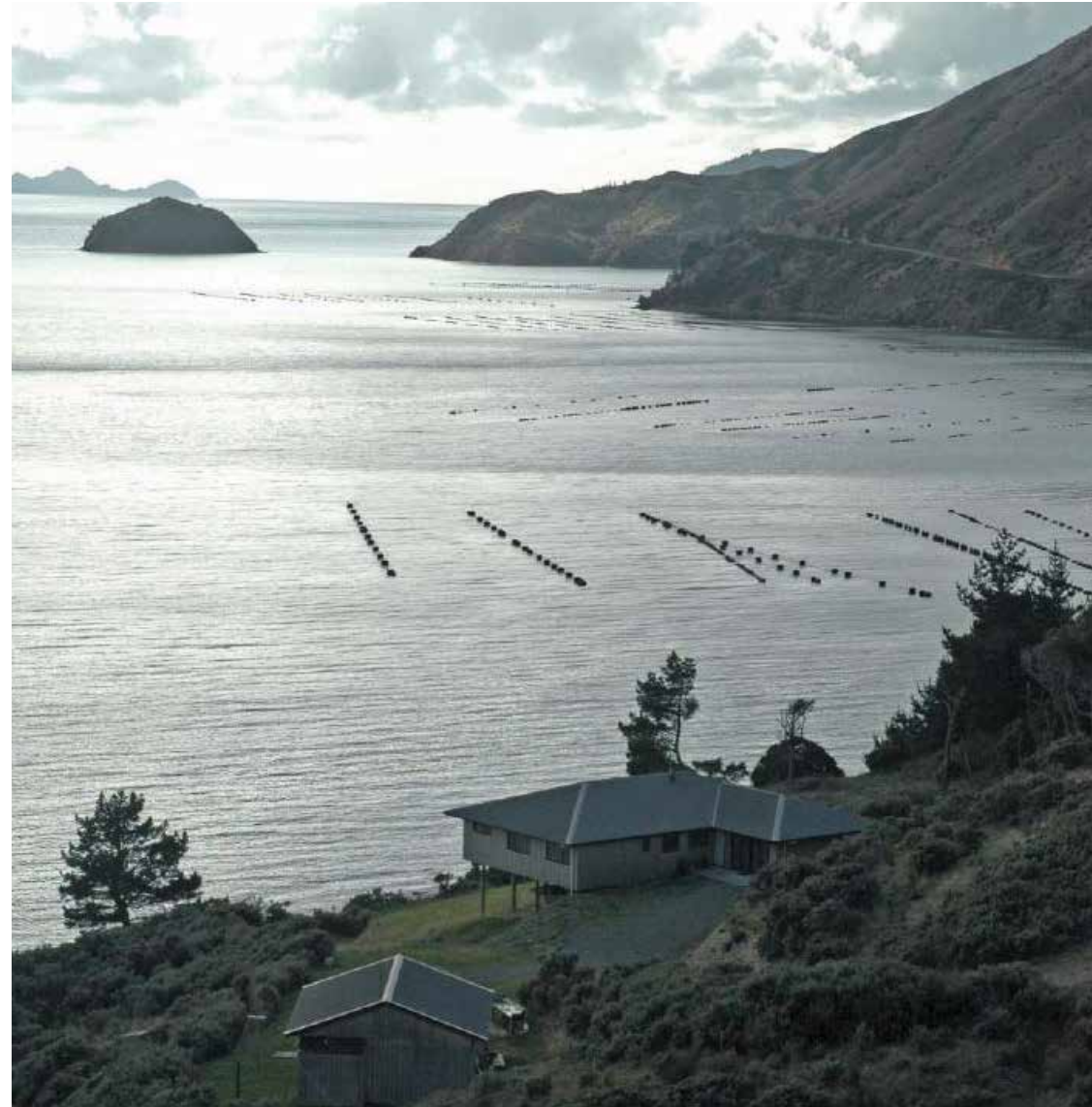


...and other structures involved, including barges that work on the farms...



Other aspects that affect aquaculture include:

- nature and frequency of viewing audience
- focus of view
- distance from the viewer, and
- angle of view



Backdrop, weather, light and sea conditions also influence how a marine farm is absorbed into its setting:



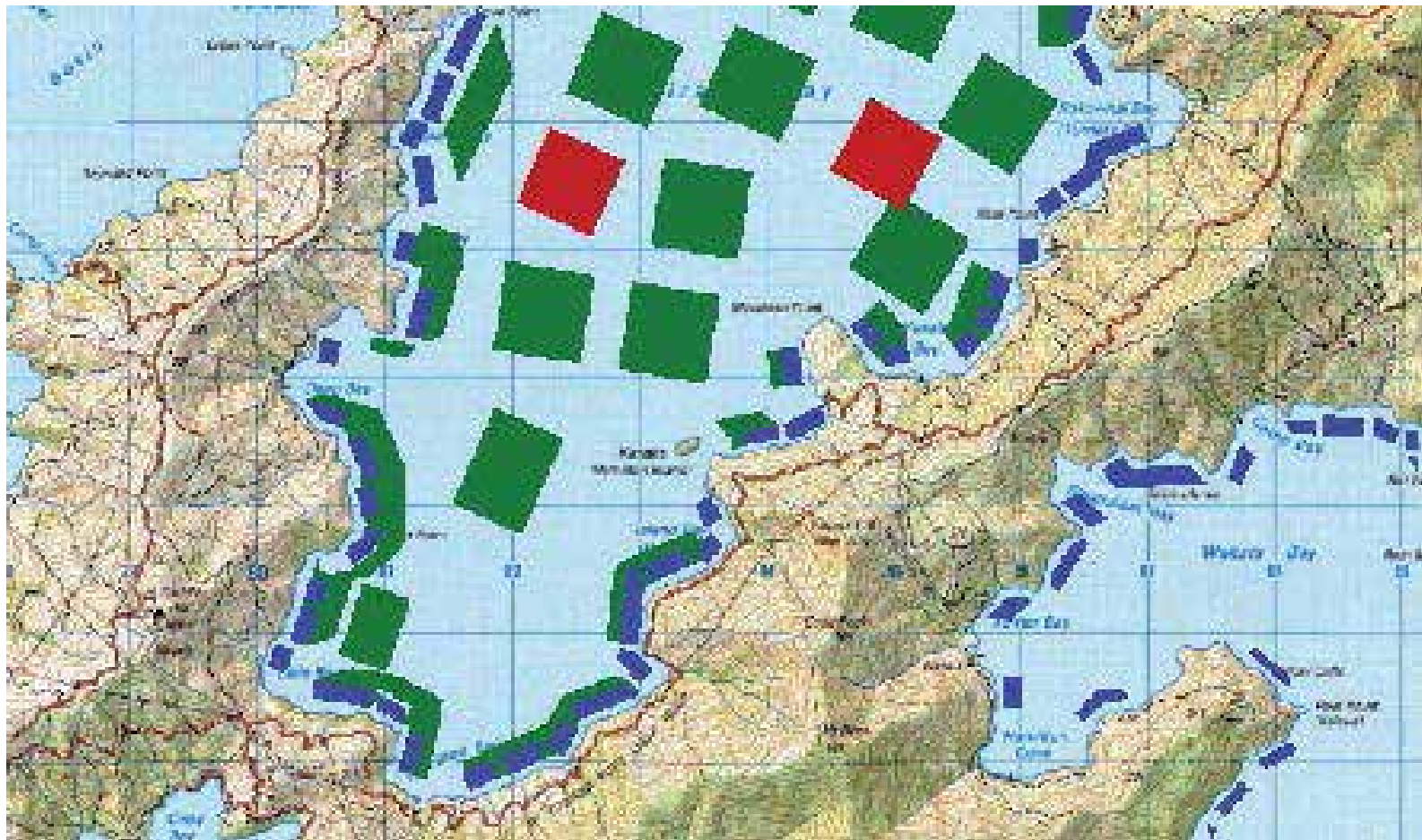
And for Natural Character a better understanding of the ecology of the marine environment is also important

That effects can be actual, ephemeral and secondary and can change over time

Effects can also be Cumulative

- In general, consolidating marine farms can have clear environmental advantages over spreading the same farms across wider areas.
- However, extensions or additional farms can dominate the character of the area and create a strong, new, utilitarian focus.





Understanding, Landscape and Natural Character values can assist with:

- Identifying locations for Aquaculture Management Areas (which are zoned specifically for marine farms)
- Identifying cumulative thresholds

Assessing the impacts

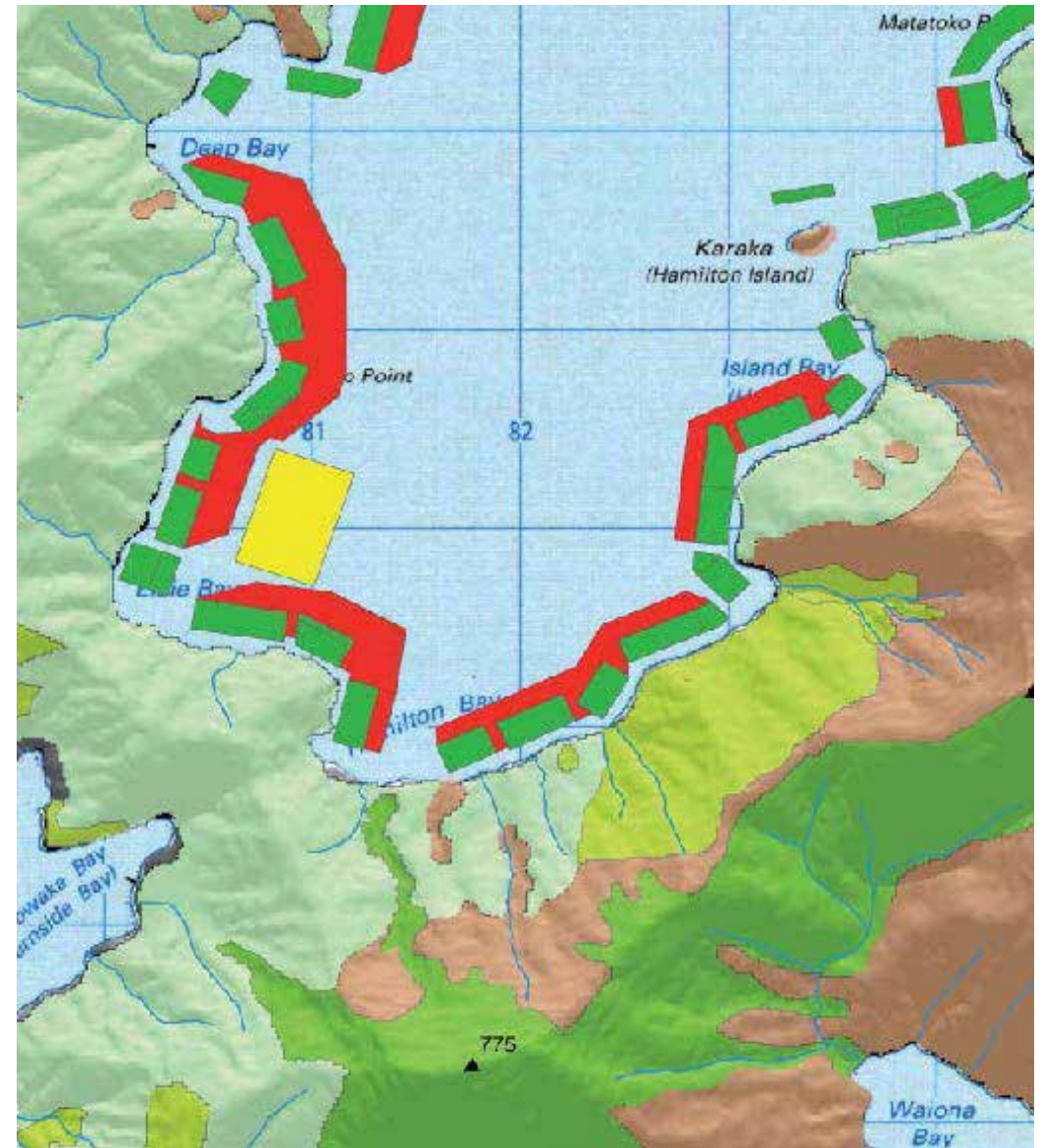
- Requires balancing **objective** and **subjective** judgements...

....so the approach must be structured, explicit and consistent

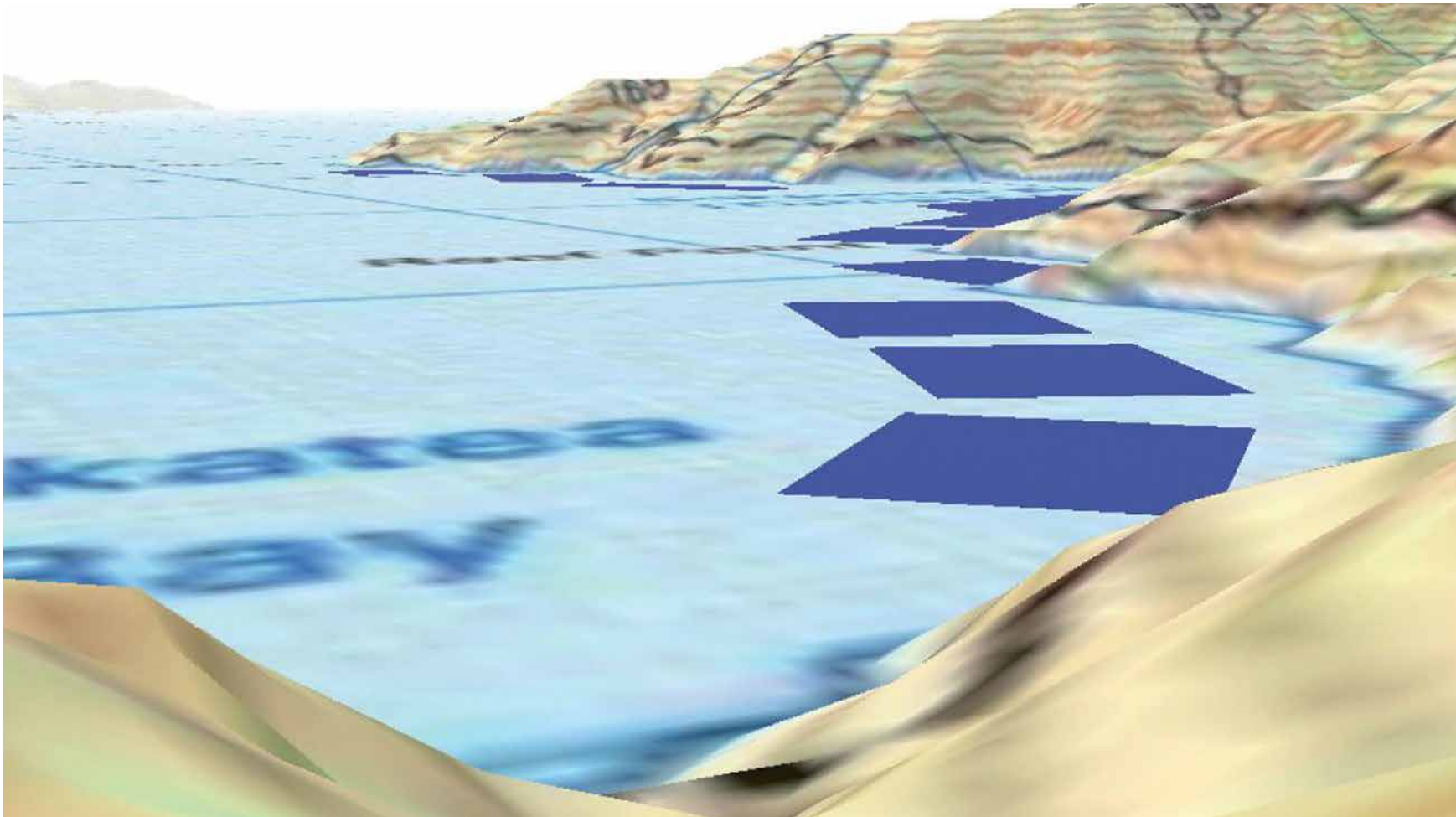
How do we do it?

There are many sophisticated tools to assist in making those judgements:

- GIS mapping
- Photographs
- Ecological data
- 3D-fly through models
- Visual simulations







Assessing the effects of aquaculture requires...

- the identification of the existing values to:
 - **natural character**
 - **landscape**
 - **visual amenity**
- understand impacts of type of viewing audience, distance, angle of view etc
- identify cumulative effects
- evaluate significance of effects

This will provide a sound basis on whether the proposal is considered appropriate development

Aquaculture and the New Zealand King Salmon Supreme Court Decision

- Relating to a specific salmon farm in the outer Marlborough Sounds, located next to an outstanding natural feature and an area holding outstanding natural character
- The proposed salmon farm was outlined as having high to very high adverse effects on the natural character and landscape of that location. Policies 13(1)(a) and 15(a) of the NZCPS would not be given effect to.
- Despite this, the Board of Inquiry approved the farm, as it applied an overall broad judgement pursuant to Part 2 of the RMA

- This was appealed by EDS due to the adverse effects to the landscape and natural character
- The High Court dismissed this appeal, agreeing with the Board.
- EDS sought leave and appealed directly to the Supreme Court
- The Supreme Court overturned the Board's decision

In summary, the Supreme Court stated:

- That to give effect to Policies 13 & 15 a Regional Council must:
 - Assess the natural character, natural features and natural landscapes of the region
 - Identify where natural character, natural features and landscapes require preservation or protection
 - Ensure that RPS and plans include objectives, policies and rules which require the preservation of natural character and the protection of natural features and landscapes in particular areas.
- That 'avoid' means 'not allow' or 'prevent the occurrence of'

- What adverse effects are to be avoided and what is 'inappropriate' should be assessed by reference to what is being 'protected'. The higher the value being protected, the more likely a development will be inappropriate
- Activities that have minor or transitory adverse effects may be acceptable
- Councils need to be careful and clear, and have a strong methodology for their identification and mapping of areas of outstanding natural character, features and landscapes. Well-defined statements of the characteristics/ values of each area that need to be protected should be articulated

In Summary

- Establish the **landscape, natural character and visual amenity values** through a well defined and worked out methodology
- That **different types** of aquaculture can have different types of effects in different locations
- That effects can be **actual, ephemeral, cumulative and secondary**
- That **‘avoid’** means avoid in statutory documents
- That outstanding areas in the coastal environment does not necessary mean that further development is inappropriate