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# **The Approaches to Classifying Surf Breaks in New Zealand**

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A Dissertation  
submitted in partial fulfilment  
of the requirements for the Degree of  
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at  
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by  
Kenton Baxter

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Abstract of a Dissertation submitted in partial fulfilment of the requirements for the Degree of Master of Planning.

## The Approaches to Classifying Surf breaks in New Zealand

by

Kenton Baxter

This research is focused on classification as a process and how it relates to the identification of regionally significant surf breaks in New Zealand. New Zealand is the first country to incorporate surf breaks into legislation, most notably in the New Zealand Coastal Policy Statement 2010. The incorporation of surf breaks in legislation is a way to give surf breaks and the many benefits they provide protection from activities that may damage or destroy them. However, although the New Zealand Coastal Policy statement 2010 has guided regional councils to identify regionally significant surf breaks, it has not provided a methodology to follow. Even though the Wavetrack approach was used to classify nationally significant surf breaks, it may not be considered robust within the courts because of its lack of transparency. Therefore, the identification of regionally significant surf breaks in New Zealand is piecemeal, with different regions using different approaches and most of the regions have not even started identifying their regionally significant surf breaks. Therefore, within this dissertation the main methodologies used to classify regionally significant surf breaks are outlined and assessed as well as some potential solutions to the issues associated with this situation.

**Keywords:** classification, community-led, expert-led, surfing, surf breaks, surfing reserves

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## **Abbreviations**

CLP - Community Led Planning

NZCPS - New Zealand Coastal Policy Statement

NZCPS 2010 - New Zealand Coastal Policy Statement 2010

RIVAS - River Values Assessment system

RMA – Resource Management Act 1991

# Table of Contents

<b>Abstract</b> .....	<b>ii</b>
<b>Acknowledgements</b> .....	<b>iii</b>
<b>Abbreviations</b> .....	<b>iv</b>
<b>Table of Contents</b> .....	<b>v</b>
<b>List of Tables</b> .....	<b>vii</b>
<b>Chapter 1 Introduction</b> .....	<b>1</b>
1.1 Aims of the Research .....	2
1.2 Dissertation structure .....	2
<b>Chapter 2 Literature Review</b> .....	<b>3</b>
2.1 Classification .....	3
2.1.1 Benefits .....	3
2.1.2 Negatives.....	4
2.1.3 Expert-Led Classification .....	5
2.1.4 Community-led classification .....	9
2.1.5 Hybrid Approaches .....	13
2.1.6 Area vs Feature Classification.....	13
2.1.7 Surf break Classification.....	14
<b>Chapter 3 Case Law Review</b> .....	<b>15</b>
3.1 Relevant cases .....	15
3.1.1 Current landscape architecture assessment best practise .....	18
3.1.2 Caselaw direction for landscape assessment methodologies.....	18
<b>Chapter 4 Methodology</b> .....	<b>19</b>
4.1 Introduction.....	19
4.2 Literature Review.....	19
4.3 Case Law Review.....	19
4.4 Results.....	20
4.5 Discussion.....	20
<b>Chapter 5 Results</b> .....	<b>21</b>
5.1 Surfbreak Definition .....	21
5.2 Social and Economic Aspects.....	21
5.3 Nationally Significant Surfbreaks .....	22
5.4 Regionally Significant Surfbreaks.....	22
5.5 New Zealand’s Approaches to Surfbreak Classification .....	23
5.5.1 Wavetrack Approach .....	23
5.5.2 Spot X Approach .....	24
5.5.3 Scentific Approach.....	24
5.5.4 Expert Assessment Approach.....	24
5.6 Results and Analysis.....	25
5.6.1 Comparison of Approaches.....	27

5.6.2	Regional Situation.....	30
5.6.3	Comparison of Approaches in Relation to Case Law .....	32
<b>Chapter 6 Discussion .....</b>		<b>33</b>
6.1	The Importance of Surfbreaks and Impacts of Classifying .....	33
6.2	Secret Surfbreaks .....	33
6.3	Implications of Current approaches to Surfbreak Classification .....	34
<b>Chapter 7.....</b>		<b>37</b>
<b>Conclusion.....</b>		<b>37</b>
7.1	Overall Findings .....	38
<b>Appendix A National vs Regional Scale and Scientific Approach .....</b>		<b>39</b>
7.2	Wavetrack Method National vs Regional Scale .....	39
7.3	Scientific Analysis Method.....	39
<b>Appendix B Comparison of Spot X and Wavetrack Surf Guides .....</b>		<b>41</b>
7.4	Spot X and Wavetrack Surf guides .....	41
	7.4.1 Nationally Significant Surfbreaks/areas.....	41
	7.4.2 Wavetrack’s Approach to Secret Spots.....	43
<b>References .....</b>		<b>44</b>

## List of Tables

Table 1 The four main approaches to surf break protection assessed against an evaluative criterion based on the literature review. ....	26
Table 2 A comparison of surf break identification approaches taken by New Zealand's regions....	28
Table 3 A comparison of the four main approaches to surf break identification assessed against the criteria considered robust by New Zealand caselaw. ....	31



# Chapter 1

## Introduction

The NZCPS 2010 recognised and identified surf breaks of national significance, as a way of protecting them from harmful and damaging activities. 17 surf breaks in New Zealand were classified as being nationally significant, using a methodology that was predominantly based on what is known as the Wavetrack methodology. The NZCPS 2010 also incorporated a policy that specified areas of high natural character be assessed and identified, surf breaks are included as areas of natural character. Within this policy, it states that the natural character of the coastal environment of each region must be assessed and areas of high natural character identified. It also specifies that these should be incorporated into regional planning documents where objectives, policies and rules are required to protect the natural character (New Zealand Coastal Policy Statement, 2010).

*“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:*
  - 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.*
2. *Recognise that natural character is not the same as natural features and landscapes or amenity values and may include matters such as:*
  - c) *natural landforms such as headlands, peninsulas, cliffs, dunes, wetlands, reefs, freshwater springs and surf breaks;”*

(New Zealand Coastal Policy Statement, 2010)

Therefore, this policy has led to local governments identifying and classifying some surf breaks within their regions as regionally significant. Local governments around New Zealand are at various stages of this process, however there is no one overall methodology used by local governments to assess and identify regionally significant surf breaks.

## **1.1 Aims of the Research**

Therefore, this dissertation aims to investigate and highlight the strengths and weaknesses of the different methodologies used to classify regionally significant surf breaks by regional councils around New Zealand. It also aims to outline the approaches used by all New Zealand's regional councils that have carried out classification or are in the process of carrying it out. To meet these aims these objectives will be carried out.

1. To develop an evaluative framework to assess the various methodologies
2. To use the evaluative framework to assess the methodologies
3. To identify the stage and approach of regional councils around New Zealand
4. To assess the strengths and weaknesses of each methodology

## **1.2 Dissertation structure**

A literature review of classification as a concept is carried out first, this provides an explanation of classification features and the strengths and weaknesses of the main overall approaches to classification which are expert-led and community-led. New Zealand caselaw in relation to landscape assessments is then outlined. This is followed by the results section which outlines the importance of surf breaks, the four main approaches used to classify surf breaks in New Zealand and the approaches of each region to surf break identification. Using information from the literature review and case law sections an evaluative criterion, is used to compare each surf break identification approach, enabling the results analysis to be carried out. The discussion then outlines the implications of this research and some proposed solutions to deal with the issues of the current situation. The dissertation is completed with a conclusion, that summarises this research.

## **Chapter 2**

### **Literature Review**

Classification is a process that involves putting ideas or objects into categories, which enables them to be recognized, differentiated, and understood. Classification depends on pattern recognition, as the natural world tends towards disorder so recognising a pattern is the first step towards organising phenomena and asking scientific questions about why and how the patterns occur (Clary & Wandersee, 2013). It has been carried out for many different subjects including species, ecosystems, ideas and landscapes for many years. There has been many different systems and methods used to classify, although these systems classify different subjects, they often share common characteristics and issues. No matter what the system, even the act of classifying something, has an impact on the subject classified and on other subjects (Braverman, 2015). Classification has been used in most fields including mathematics, media, science, business, organizations, and economics. Classification is an essential aspect of this dissertation as the NZCPS 2010 has resulted in the classification of surf breaks, therefore classification needs to be understood, so the likely impacts of classification processes on surf breaks can be deduced. Therefore, this literature review will first outline the positives and negatives of classification, followed by an outline and critique of the two main approaches to classification which are expert-led and community-led. Hybrid approaches will be described and explained, as well as the difference between feature and area classification. Finally, an explanation of the reasoning behind classifying surf breaks and an outline of international approaches to surf breaks classification will conclude the literature review.

#### **2.1 Classification**

##### **2.1.1 Benefits**

The overall reasons for and benefits of carrying out classification are that it helps recognise and differentiate a group of subjects into smaller groups based on common characteristics. A basic example of this is living creatures have been broken down into smaller classification groups such as fish, plants and animals, this enables a better understanding to be gained of the subjects within the groups (Clary & Wandersee, 2013). Also, it helps decision makers where needed allocate suitable resources and impose suitable legislation for each different group. For example, different rules are applied to different land zones, as land has different classification depending on its characteristics. This is more effective than applying the same rules for land in general as legislation could not consider natural hazard areas and areas planned for different purposes. Therefore, classification has allowed different types of legislation to be created for groups of land with shared characteristics, for

example land that is classified as flood prone, enables legislation to be made to manage flood risks. Therefore, classification enables a more specific targeted approach to a group of similar things without being completely case-by-case, which would be highly complicated.

A well-known classification method is the taxonomy classification system, which is used to define and name groups of biological organisms. This method classifies and groups organisms based on their shared characteristics, each organism is grouped into taxa and these groups are given a taxonomic rank (Ereshefsky, 2001). The groups of a given rank can be aggregated to form a super-group of higher rank, thus creating a taxonomic hierarchy. The principal ranks in modern use are domain, kingdom, phylum/division (sometimes used in botany), class, order, family, genus and species (Ereshefsky, 2001). The origins of this system came from the Swedish botanist Carl Linnaeus who developed the system now known as the Linnaean taxonomy. This was used to categorize organisms and used binomial nomenclature creating a standard process for naming organisms. The uptake of these rules was rapid and brought unity to biological nomenclature as before that there was confusion and disagreement among biologists on the nomenclature procedures (Ereshefsky, 2001). As biologist often assigned different common names to the same taxon, therefore having a unified approach improves clarity for people regarding the classification process.

Another benefit of classification for the subject classified as significant is that it gains a much greater level of recognition, which often results in increased resources and legislation focused on protecting it. An example is that threatened and endangered species receive a much greater level of funding and resources over species that are considered to be common (Braverman, 2015). This funding and resources are used in ways that will help the species to reproduce and survive in situations that have resulted in their decline. This could include providing sanctuaries of habitat undisturbed by human influences, or areas that are pest free so that the threatened species can live without unnatural pest competition.

### **2.1.2 Negatives**

A negative of classification is that although it helps to organise large complex groups into smaller groups, therefore enabling a management approach to be created and carried out for each group. And although this approach may be the best for the group, some of the individual subjects may not receive the specific type of management they need. This can occur through misclassification, or if the classification groups are too generalized. Therefore, in some instances more of a case-by-case analysis could provide a more accurate management approach even though this is more difficult to carry out.

Other negative effects of classification are that it leads to increased recognition, increasing tourism therefore negatively impacting the subject. A key piece of literature by Braverman (2015) outlines the impacts of classifying species, based on their abundance, on other species and the species itself. Braverman (2015) outlines that when a species is classified as endangered, the value of that species is considered higher than common species, this results in the common species being seen as less valuable and therefore expendable. Another aspect outlined by Braverman (2015) is that for organisations looking after species classified as endangered it's in their interests to keep the species at that level of classification, as it enables them to receive more funding. There is also the possibility that a species classified as rare becomes valuable for hunters, as its scarcity increases its value as a collection trophy. Similar logic and principals from Braverman (2015) can be applied to a significant surf break, if developers carry out activities that damage the surf break without permission the surf break won't be significant anymore therefore their activity may become legal anyway. Therefore, the method used to classify, becomes important as it will have a significant impact on the subjects classified.

### **2.1.3 Expert-Led Classification**

The expert led classification approach involves an expert or a group of experts developing the criteria for classification and implementing this criterion. This approach is characterised by its top-down format with experts leading the way in all aspects with little to no say from community members (Tadaki, Allen, & Sinner, 2015). It is often considered that this approach can be applied in a universal way, as once the theoretical frameworks are established, experts can apply these in a range of situations (Tadaki et al., 2015). In some cases the expert approach uses scientific data, although this is not a requirement and often expert assessment and opinion is relied upon (K. F. D. Hughey & Baker, 2010). Therefore, although the theoretical framework behind the approach is replicable the results are dependent on the expert's views and opinion which can vary between experts.

The expert led approach empowers the experts, as they have complete control over the creation of the classification criteria and how its implemented. This can lead to many issues regarding communities and their knowledge, as although experts will have a wider knowledge on the particular field being classified, the actual users or local communities will have a better knowledge of the intricacies of their local resources for example a river. Therefore, the expert led approach will not take this knowledge into account and critical components could be missed (Padrós, Garcia, Mello, & Molina, 2011). The fact that the expert led classification approach can only be carried out by experts limits this approach, as the community who use the resources and will be affected by the classification of those resources are unable to influence the classification. For example, the community may consider one of the rivers in their region to be the most significant to them but if the

experts decide otherwise, the community will have no means to influence their decision (Duncan, 2013).

Another key issue of the expert led approach is the identification and defining of experts to create and implement the classification process. An expert is defined as “a person who is very knowledgeable about or skilful in a particular area” (Oxford Dictionaries). This standard English definition of an expert is extremely broad, as this could apply to many different people. Therefore, in order for the expert led approach to be carried out effectively the type of experts required in the process must be well defined (Rennie, 2016b). Issues around the identification of experts is that experts must have the necessary expertise to carry out the classification method. Often classification involves assessing a range of different criteria (multi-criteria), therefore experts must have knowledge and skills in these criteria to carry out the classification. Experts with this range of skills and knowledge are extremely rare therefore an approach that is often used to deal with this issue is the expert panel approach. The expert panel approach involves a group of experts creating the classification criteria and carrying out the classification process (Northland Regional Council). This approach has the advantage of incorporating the views of different types of experts into the classification process, this is especially helpful when using the multi-criteria analysis approach as experts can share and combine their knowledge (Northland Regional Council).

One of the supposed advantages or assumptions of the expert led approach is that it is a more objective method. This viewpoint originates from the 1900s, when experts were believed to be people that could make objective decisions based on scientific evidence (Buchanan, 2012; Sandercock, 2004). However, as a more postmodern worldview began taking hold, it was realised that experts are no different to lay people. As they still have their own perspectives that influence their decisions, and therefore the expert led classification approach which is based on expert opinion cannot be viewed as an objective approach (Sandercock, 2004). As although it may reflect a degree of expert opinion, it is also likely to be influenced by the particular expert carrying out the classification. Therefore, the expert led approach may not be significantly more objective than other approaches to classification as the very act of classifying something is highly subjective (Sandercock, 2004). For example, a natural feature will hold varying degrees of significance to different people, based on their experience and values. Therefore, classification of natural features is extremely complicated and there are no right and wrong answers, just opinions on the value of certain qualities and aspects. This means that no matter how scientific the classification approach being carried out, there will always be different viewpoints and the expert led approach may not actually provide a more objective approach.

Multi-criteria analysis as mentioned previously is an approach that uses more than one criteria to assess and classify a subject. Each criterion can be given equal value or else they can be specifically weighted to overall reflect the importance of the criterion. It is often incorporated into the expert led approach as it provides a set of organised criteria which according to O'Connor, Overmars, and Ralston (1990) is needed. As without multi-criteria analysis it may be easy to forget some elements of significance and overemphasise others (O'Connor et al., 1990). The use of multi-criteria means the full range of values present at a site are more likely to be covered, thereby avoiding inadequate site assessment and gaining wider community acceptance for an evaluation (O'Connor et al., 1990). Multi-criteria analysis often uses numerical values to value and categorise each subject, therefore having number boundaries between categories can be problematic. For example, a species may be classified as rare when there are ten or less remaining, therefore if there are eleven, the species is no longer considered rare. This shows the problem with using metrics to classify as the difference between 10 and 11 is extremely small however it could result in completely different outcomes for the rare species. Therefore, it may be more appropriate to use qualitative terms such as low, medium and high rarity levels to avoid this issue (Tadaki & Sinner, 2014). As this means that small differences may not have as significant impacts on the classification categories, and therefore the particular subject classified (Tadaki & Sinner, 2014)

The advantage of numerically based expert led classification approaches is that it enables complex environmental aspects to be measured, modelled, and optimised across scales. This helps to simplify the world for ease of observation and makes legible it's human and environmental subjects for purposes of management (Tadaki & Sinner, 2014). However, this approach also has major issues, as environmental values are too complex to be reduced into a number therefore by doing this it limits the true uniqueness and significance of each environmental values or landscape feature (Duncan, 2017).

### **RIVAS Methodology**

An example of an expert led approach is the RIVAS, this system incorporates the expert panel based approach with Multi Criteria Analysis and a standardised numeric scale approach (England, 2011). This method was designed to provide an objective consideration of relative importance, as although different methods had been used for classification in legislation like the RMA and lower down legislation which have met the required needs, they were considered highly subjective (K. F. D. Hughey & Baker, 2010). Therefore the RIVAS method is considered to be a reasonably objective approach for assessing the significance and value of waterways (K. F. D. Hughey & Baker, 2010) This classification system was designed to enable any set of rivers to be prioritised for any specified values. The key steps taken to carry out this method include first assessing and identifying the appropriate river values. Appropriate river values are different for each river as although it may be

easier to assess rivers using consistent river values, it may not be practical to do so. As different rivers can have completely different characteristics, for example one river may have swimming areas within it, therefore its swimmerability value should be assessed, whereas another river may not be used for swimming therefore this value should not be assessed. Therefore, appropriate river values are based on the rivers primary uses and characteristics. Once appropriate values are decided, it enables the primary attributes to be selected and the main indicators identified (K. F. D. Hughey & Baker, 2010).

Once this has been carried out significance is determined by putting a threshold for significance on the indicators and applying this to the data collected. The threshold of significance is put into high/medium/ low importance. Deciding thresholds is a judgemental exercise, the expert panel undertake this exercise using the best available existing data (K. F. D. Hughey & Baker, 2010). There are some common rules used, for example while still a subjective judgement a 5:1 ratio was recognised by the national expert panel as adequately reflecting the relativity between high and low importance (K. F. D. Hughey & Baker, 2010). The weighting of each primary attributes is also carried out which enables the river significance to be calculated numerically and comparisons between rivers made. (K. F. D. Hughey & Baker, 2010). The default approach is that all primary attributes are weighted equally, however different weighting combinations can be tested to assess the robustness of the rankings. But in all cases weighing should be guided by the experience of the expert panel in evaluating the relative importance of specific attributes for a value. Therefore the adjusting of weightings is essentially a political process, rather than an analytical, problem solving one as it really depends on what is considered most important by decision makers (Chapman, Harte, Lewin, Zuur, & Meijer, 1996).

Values for primary attribute indicators range from 6-10 for manageability, this range was once again chosen using expert opinion. Also, policy managers particularly those tasked with the responsibility of managing rivers of national importance and even regional and district importance may design thresholds to reflect manageability and funding limits rather than providing protection for all outstanding natural features being the focus. Thresholds of high, medium, low relative significance need to be defined for each attribute's indicator, these are then converted to numeric scales, usually 3 to 1 for high to low respectively (England, 2011). The scores are then added together for each river. Once the scores for each river have been made, they can be compared and a comparative importance ranking of rivers can be created. In order to rank the rivers a predetermined criteria created by the experts/authors of this method is used, the criteria defines what values/score is needed for a river to be classified as either national, regional or of local importance (England, 2011). This results in a list of ranked rivers and their classification which reflects whether they are valued locally, regionally or nationally. As illustrated within the RIVAS approach, the conversion of



environmental values to a single dimension, generates a single overall index, however this approach cannot characterise the varied interactions of social, environmental and economic systems (Chapman et al., 1996)

Some of the key elements of this tool are that an expert panel uses the best available information in order to decide on the values for different aspects of the river (England, 2011). The best available information is considered to be scientific data that can be gathered and used within the process. If no scientific data is available or is not considered to be robust, the expert panel estimates data for each indicator (K. F. D. Hughey & Baker, 2010). Rivers can be ranked either in segments or as a whole, once a river has been separated into segments they cannot be added together and remain separated for the whole process (K. F. D. Hughey & Baker, 2010). Long rivers should be subdivided into two or more segments where necessary, for example in Marlborough the Upper Wairau and the Lower Wairau. The number of segments a river is divided into, should be as low as possible and should mark distinct differences in river geomorphology (K. F. D. Hughey & Baker, 2010).

K. Hughey, Rennie, and Williams (2014) set out water conservation orders in New Zealand and the geographical boundaries imposed on them, similar issues they outlined could be applied to the RIVAS method involving the splitting up of rivers into segments. As a provision in the water conservation legislation recognises that not all parts of a catchment necessarily contain features that are 'outstanding'. Therefore, leaving the opportunity for parts of catchments to be covered by a WCO, while other parts are more 'open' to development. This weakens arguments for a more holistic view of a protected 'river' (K. Hughey et al., 2014). This argument can also be applied to the separation of rivers into segments within the RIVAS approach, as this means that the same river could have different segments with different levels of significance. This is problematic as the segments are interconnected therefore more lenience to development in one segment may have adverse effects on segments of the river that are considered a higher level of significance. Also in WCO the protection is limited to the water itself and surrounding land isn't affected by the WCO, although restrictions are imposed on surrounding land is to limit negative impacts on the water body (K. Hughey et al., 2014). Therefore, boundaries are an extremely important part of classifying natural landscapes, as if the boundary does not incorporate areas that are sensitive for the natural feature itself the classification and protection may not be effective.

#### **2.1.4 Community-led classification**

Another type of classification approach is the community led approach. This is when a community decides on a classification method and then carries out the classification as a community. The community involved may be a geographically determined community (e.g., all the people living in a particular town) or a community defined by a common interest (e.g., fishers).

The expert led system appears to follow a similar approach to the expert led rational comprehensive planning approaches which used to be very popular in the mid-1900s. But in the planning world there has been a shift to a communicative approach working with and drawing out the values of communities in planning (Sandercock, 2004). This has also become evidence in classification systems which are important to planning. Therefore, it is useful to consider the key principles of CLP as they are a basis for contextualising community led classification systems. The CLP approach has been carried out in a number of different settings with varying levels of success, this approach is designed to explore community characteristics and priorities and help shape local agendas (Parker & Murray, 2012). The CLP was conceived to be more holistic and inclusive than the traditional rational comprehensive formal planning processes (Parker & Murray, 2012). Community planning acts as a means to gather local knowledge and provide a vehicle for local populations to voice their concerns and needs and, to the extent that the community is enabled to make final decisions, it is empowering (Parker & Murray, 2012). This empowerment is also what the community led classification approach seeks to do. The approach assumes that the community holds a vast knowledge of, say, natural features in their region that may be overlooked by the expert and scientific approach.

### **Assessment of the Whitewater Recreational Values of West Coast rivers – whitewater kayaking**

An example of a classification approach that involves community participation is the assessment of white-water recreational values of West Coast rivers. This approach can be considered somewhat community led as it was carried out by a member of the white-water kayaker community Andy England and features community participation within the assessment process. However, there are more community based approaches which are led by the whole community or at least more than one member. However, this assessment carried out by Andy England's provides a good example of one type of community led assessment. He decided to carry out the assessment, when he realised how little written material was available about kayakers use of rivers, when the Arnold River was threatened with dewatering for hydro electricity generation (England, 2011). The methodology used to assess the reaches of rivers with white-water kayaking qualities included geotagged photos to provide evidence of what exists in the white-water rivers, river trip reports, the information from the RIVAS method and a survey of kayakers (England, 2011). These tools enabled different types of data to be collected, and combined into an assessment of recreational value from a white-water recreation user perspective. This method incorporated how white-water kayak users (including himself) viewed the overall importance of the resource, its white-water qualities and landscape scenery qualities (England, 2011). The white-water kayaking community was involved in the decision-making process through surveys, these surveys gathered information on the white-water kayakers most valued attributes for rivers. They also gave the opportunity for white-water kayakers to define the value of each of these attributes within the various West Coast white-water rivers they had

kayaked. The level of participation the community is given through this approach can be assessed using Arnstein's ladder of participation. Andy England although he is part of the community, assessing how he incorporated the rest of the white-water kayaking community shows that he created this approach by himself and the survey which guided community participants into answering certain questions and expressing thoughts on certain subjects. The answers to these questions were used to illustrate river values and the importance of attributes therefore this shows a level of community participation that can be considered a high level of tokenism according to Arnstein's ladder (Stelmach, 2016). As the community is consulted and their opinions are used to provide the basis of the river values. A higher level of participation would be if the community was consulted and had major influence on not only the river values but the process of finding those values and carrying out the classification method (Stelmach, 2016).

Andy England's approach to classification of West Coast rivers is not solely focused on white-water kayaking, it incorporates a number of different methods and values. It recognises that providing a set of numerically ranked rivers is of limited depth and value (England, 2011). Therefore, this method has outlined all the information regarding peoples view on the river, numerical values based on the views of members of the white-water kayaking community and observations of the rivers. However, in terms of white-water qualities the emphasis is placed on more difficult and extreme qualities being considered more significant, because many of these users are vastly experienced and such stretches of river are relatively rare. The approach puts a higher rating on rivers that are more difficult for white-water kayaking, therefore implying that rivers with lower level white-water qualities are less significant. This is a limitation, as the focus on more difficult stretches of river means that 'nursery' stretches (areas where beginners can safely learn) could be under-rated in such an approach. This is due the author and his choice of survey participants being predominantly experienced white-water kayakers who prefer more difficult stretches of river.

A key consequence of the community-led approach is the potential for the most popular subjects to be classified as the most significant. This is because the community-led approach seeks to empower members of the community, idealistically community members are given equal influence in the classification process however in reality this is highly unlikely to occur and community members will have different degrees of influence. If community members have equal influence within the classification decision making process it could result in the most popular subjects being classified as the most significant. Therefore although popularity is an important indicator of significance, there may be other indicators that are equally as important in judging significance. England (2011) approach is an expert kayaker leading a community approach, therefore this has helped to mitigate the danger of a community led approach resulting in popularity deciding significance. As England (2011) outlines that although a higher number of users indicates greater value, there is not a linear

relationship with overall value. This is because some highly prized resources (in this case rivers) have very limited numbers of users because they are so hard to access, therefore popularity should not be the main indicator for significance according to (England, 2011). This shows that England (2011) clearly has an underlying value judgement that popularity should not be the main indicator as it may not agree with his pre-formed view which gives the impression of a personal bias. Therefore England (2011) approach is not a completely community led approach and reflects the traditional dilemma between expert and community planning which questions whether the community is or should have the power to completely determine planning decisions.

Another key consideration with the community led approach is whether the whole community gets a say on the classification or is it restricted to the users of the resource. This could also have a major impact on what is considered to be of the most significance. For example, the classification of rivers by high level river kayakers could provide a very different view and therefore classification than the general population would provide. As high-level river kayakers will most likely classify rivers that are the most challenging as the best, but these rivers might only be accessible to the elite few who are able to meet the costs of accessing such places. The general population might be more likely to classify a river that everyone can use as more significant. Therefore, this raises two key points, giving the main users of the resource the power to decide on significances has the advantage of using this extensive knowledge source, as these users will have gained experience from many years of use. However, this approach discounts the views and opinion of the whole community, who may not use the resource as intensively however also value it in different ways. For example, the value of a river to an extreme white-water kayaker will be completely different to an average person, therefore it would not seem equitable for the white-water kayaker's views to be prioritised over the views of the wider community. However, the degree of significance could also depend on the river's uniqueness, therefore low level, white-water rivers are reasonably abundant on a national scale, whereas high quality white-water rivers are much rarer which would add weight to putting more value on the opinions of more extreme users of certain natural resources. Therefore, the rarity attribute may need to be considered more significant, because if they are damaged, there are no alternatives of this particular quality.

The benefit of the community led classification approach, are that the users of the resources get to decide on what they consider is most significant to them rather than external experts. Some disadvantages of this approach are that very similar natural features, for example a river might be rated differently by the respective river communities, there is no certainty that like will be classified as like. This is not necessarily a bad thing, however if central government wants to create a uniform replicable approach to classification of a certain feature the individual community led approaches would not provide this. Another limitation is that the organisation of the community to come up with

a criterion and judge the relative features is likely to be a much more complex and time-consuming process than the expert led approach. Also, often community led approaches tend to have participants of a certain demographic, usually those that are retired and have lots of time to participate or those with vested interests in the classification outcomes (Parker & Murray, 2012).

The implication of the community approach in relation to surfing depends on who's involved in the approach. Is it expert surfers, all surfers, surfers and other wave users such as bodyboarders or the entire community as a whole? This is a key question and will have major implications on the outcomes of the community approach. For example, if it is expert level surfers, often the most difficult and dangerous waves might be considered the best and therefore the most significant. However, if all surfers are involved, there are more novice level surfers than experts therefore the most popular breaks are likely to be the beginner breaks, and therefore they may be measured as the most significant.

### **2.1.5 Hybrid Approaches**

Hybrid approaches combine aspects of both the expert and community approaches. This can be carried out in many ways. Most approaches are not purely expert or community led, therefore hybrid approaches are reasonably common, England (2011) is a hybrid approach especially if England is considered an expert rather than a community member. However, many community members can also be considered experts, therefore it is difficult to find pure community led approaches. Another example of a hybrid approach is the Maurimeter, as although it has all the characteristics of the expert led approach, it becomes very much community determined with experts facilitating the process and using the Maurimeter as a means to illustrate the logic of the decisions begin made by the community members (Morgan, Fa'au, & Manuel, 2013).

### **2.1.6 Area vs Feature Classification**

Classification can be carried out for a feature itself or an area which incorporates the feature and its surroundings into the classification. A subject that can be classified using a feature or area approach are trees, an example of a feature approach to classifying them was carried out by Burstall (1984) over 30 years. This enabling him to produce a book on the great trees of New Zealand his selection included trees for their beauty, size, rarity and historical association and the overall selection based on the authors personal choice. The key point with this example is that his selection was solely based on the tree characteristics not the trees surroundings. Classification that focuses on the feature, is less complex as less factors need to be considered. The other approach to classification is to classify a whole area, this means that the feature is classified but also the area around the feature is incorporated into the overall classification. This approach is more complex; however, it provides a

more inclusive approach that recognises that the feature will influence and be influenced by the surrounding area as it is part of the landscape. An example of an area classification is arborists approach to assessing trees. As they assess the tree itself, but also the surrounding area to understand the influences on the tree, as well as the trees influences on the surrounding area. For example, the risk on surrounding houses if the tree was to blow over and the likelihood of that happening would be assessed by arborists.

### **2.1.7 Surf break Classification**

Classification has become important to many different subjects including surf breaks, as it is seen as a way to provide recognition and therefore protection from harmful activities. In relation to classification of surf breaks in the international context it has been reasonably limited, the main measure being used is the creation of surfing reserves. The very first example of this, was when a surfing reserve was established at Bell's Beach, Victoria, Australia in 1973 (Edwards & Stephenson, 2013). This reserve was designated by the Victorian State Government as a land-based reserve for recreation and conservation. The second surfing reserve was established in 2006 for Maroubra Beach, Sydney, Australia through the NSR movement (Edwards & Stephenson, 2013). NSR was formed in 2005 and is a voluntary organisation dedicated to the identification and nomination of surfing reserves. The NSR has created a criteria that surf breaks must meet to be considered for NSR status, this criteria includes the surf break consistently produces high-quality surfing conditions, the area is considered sacred to surfers and the surf break has a long-term history of use by the local and national surfing community (Short & Farmer, 2012). The reserve boundaries extend from the shoreline to at least 500 meters seaward and for the extent of the surf breaks along shore. These reserves are a purely symbolic acknowledgement as they have no legislative recognition, except in New South Wales. Therefore, the benefits for protection of a surf break named a NSR is purely based on the awareness it generates for the surf break's value (Short & Farmer, 2012). The NSR system has expanded to also include world surfing reserves and regional surfing reserves neither of these have any legal weight either, but the same benefits of increased awareness apply (Edwards & Stephenson, 2013). The criteria for a world surfing reserve states the surf breaks must have exceptional quality and consistency, be a place considered sacred to surfers throughout the world and have had long term usage of the beach and wave environment by the local, national and international surfing community (Short & Farmer, 2012).

## Chapter 3

### Case Law Review

The Environment Court has provided several key decisions on the definition of 'natural character' and 'landscape' and the best methods of identifying these characteristics. These decisions will help form a criterion that can be used to assess the regionally significant surf break identification methodologies. The case law will guide the criteria to ensure that it addresses the key aspects recognised by the courts as a legitimate way to assess the significance of a natural feature like a surf break.

#### 3.1 Relevant cases

The first case which attempted to provide an assessment method for landscapes was the *Pigeon Bay Aquaculture Ltd v Canterbury Regional Council* (1999), its findings are referred to as ('the Pigeon Bay Criteria'). This case defined the word 'outstanding' referred to in section 6 (b) of the RMA to mean "conspicuous, eminent, especially because of excellence" and "remarkable". A key finding was that if an outstanding landscape is assessed in relation to a district plan, it can only be done on a district-wide basis because the sum of the district's landscapes are the only immediate comparison that the district council has (Littoralis Landscape Architecture & Simon Cocker Landscape Architecture, 2014). Therefore, this logic could apply to regionally significant surf breaks, meaning they should be assessed at the regional scale and compared to the quality of the regions waves rather than nationally.

The case created a criterion to assess landscapes "naturalness" referred to under Section 6 (b), of the RMA. The Criteria includes:

- The physical landform and relief;
- The landscape being uncluttered by structures, and/or obvious human influence;
- The presence of water (lakes, rivers, sea)
- The vegetation (especially native vegetation) and other ecological patterns;
- The absence, or compromised presence, of one of these criteria does not mean that the landscape is not natural, just that it is less natural. There is a spectrum of naturalness.

The Court had previously ruled on the word natural which they defined as "The word 'natural' is a word indicating a product of nature and can include such things as pasture, exotic tree species (pine),

wildlife...and many other things of that ilk as opposed to man- made structures, roads, machinery.” (*Harrison v Tasman District Council*, 1993). This definition was further reinforced by the *Weatherwell-Johnson v Tasman District Council* (1996) case which determined that “... the degree of naturalness goes beyond just the visual. It depends on the presence of natural elements, patterns, and processes and addresses the largely unbuilt”. It was also recognised by the Environment Court that the concept of landscape encompasses more than just its natural and visual values, it also includes cultural values (*New Zealand Marine Hatcheries (Marlborough) Ltd v Marlborough District Council*, 1997).

The *Wakatipu Environmental Society Incorporated and others v Queenstown- Lakes District Council* (1999) case is a very important one and its factors became known as the ‘amended Pigeon Bay criteria’. The court found that the definition of ‘Landscape’ includes some key elements such as

- Landscape is a subset of the environment
- Landscape involves both natural and physical resources and various factors relating to the viewers and the perception of the resources
- Landscape is a link between individual resources and the environment (as defined in the RMA). It considers a group of natural and physical resources together. It also emphasises that attitudes to those resources are affected by social, economic, aesthetic and cultural conditions.

The case also found that any criteria for assessing landscape should include consideration of the following factors:

- The natural science factors: - the geological, topographical, ecological and dynamic components of landscape
- Its aesthetic values including memorability and naturalness
- Its expressiveness (legibility) how obviously the landscape demonstrates the formative processes leading to it
- Transient values: occasional presence of wildlife, or its values at certain times of the day or of the year
- Whether values are shared or recognised
- Its value to tangata whenua and
- Its historical association



This case gained recognition, and its factors were generally accepted as best practise, therefore, leading to this decision becoming an integral part of guiding the use of criteria for landscape evaluation since 1999. Subsequently a gradual increase in the understanding of its factors as more recent cases continued to explore its terms. The Court has excepted some of these explorations but not others. More recently some consensus has been reached amongst members of the New Zealand Institute of Landscape Architects (NZILA) in the interpretation of key terms. A document called the 'Best Practise Note' document also represents a broadly accepted approach to the assessment of landscapes (Littoralis Landscape Architecture & Simon Cocker Landscape Architecture, 2014).

This has resulted in a certain level of professional consensus in how these criteria are used as a basis of any landscape assessment framework. However, it is also increasingly recognised by landscape practitioners that whilst this "criteria" is useful, they also have limitations. It is accepted by professional consensus that they are not to be treated as exhaustive criteria but rather as 'factors' to be considered according to the particular landscape situation being assessed however there may also be other key contributing factors. This was different to what the Court anticipated, as they thought the criteria would be enough to cover every type of landscape assessment.

This consideration was echoed by the Board of Inquiry (2011) into the Hauauru ma raki wind farm decision which criticised the way the 'Pigeon Bay factors' had become something of a formula for landscape assessments.

"We find these (Pigeon Bay) factors to be a mix of objective and subjective matters and not sufficiently differentiated to clearly address the effects of change on people and communities identified in Section 5 of the Act. We acknowledge that they have been used in Environment Court decisions but conclude they should not be adopted as a formulaic framework for landscape assessment" (Board of Inquiry, 2011, para. 611)

A further case involved the Court critiquing the use of a mathematical formula or mechanical approach when applying landscape evaluation factors (*Waiareka Valley Preservation Society inc, Kakanui Riverwatch Society and Holcim NZ Limited and Renaison v Waitaki District Council and Otago Regional Council*, 2008). That same adverse reaction to attempting to use quantifying formulae when assessing landscape values has been well documented internationally (Littoralis Landscape Architecture & Simon Cocker Landscape Architecture, 2014).

### **3.1.1 Current landscape architecture assessment best practise**

It has been generally accepted that preference within the landscape architecture profession is now to apply a simple three or five-point scale (low-medium-high, or low-medium low-medium-medium high-high) and the use of overall profiles or cumulative assessments (Littoralis Landscape Architecture & Simon Cocker Landscape Architecture, 2014).

The Board of Inquiry in the Parkins Bay decision provided an indication of how case law appears to be shifting toward the description of landscape under three broad categories, being the biophysical, perceptual and associative aspects (*Upper Clutha Tracks Trust v Queenstown Lakes District Council*, 2010).

### **3.1.2 Caselaw direction for landscape assessment methodologies**

Based on the caselaw and the direction it has gone throughout the relevant cases a criterion that is considered robust must include some key features. Currently the amended Pigeon Bay criteria are seen by the courts to provide a robust assessment of landscapes, therefore this must be incorporated in landscape assessment criteria for it to be considered robust. Landscape architects consider that these factors do not provide an exhaustive criterion but rather should be considered according to the particular landscape situation being assessed, however has not reflected this view entirely yet. Therefore, the features of the amended Pigeon Bay criteria must be considered and included within landscape assessment criteria for it to be considered robust. Case law has also shifted to description of landscape under three board categories which are, the biophysical, perceptual and associative aspects. The courts have criticized the use of a mathematical or mechanical approach to valuing landscapes and the use of quantifying formula when assessing landscape values. Therefore, approaches that aren't solely mathematical or mechanical are more desirable according to the courts.

Therefore, although surf breaks are considered part of the natural character rather than landscapes. This caselaw in relation to assessing landscapes in New Zealand may provide some guidance for aspects that are considered robust within the New Zealand courts. And therefore some of these points may be desirable within criteria used to assess regionally significant surf breaks.

# Chapter 4

## Methodology

### 4.1 Introduction

This dissertation aimed to investigate and understand the different methodologies used to classify regionally significant surf breaks by regional councils around New Zealand. A set of objectives was created:

1. To develop an evaluative framework to assess the various methodologies
2. To use the evaluative framework to assess the methodologies
3. To identify the stage and approach of regional councils around New Zealand
4. To assess the strengths and weaknesses of each methodology

To address these objectives, the following methods were carried out.

### 4.2 Literature Review

A review of literature in relation to classification generally was carried out, this included reviewing the two broad classification approaches which are expert led and community led. Examples of these approaches were reviewed, as well as examples of hybrid approaches which combine aspects from both the main approaches. The examples reviewed were predominantly focused on landscape classification methods, as these are the type of classification approaches used on surf breaks. The literature review explored the consequences of each approach on the subject classified, and the groups with the most influence within these approaches. The literature review provided an evaluation of the key features within each classification system and the impact of these features.

### 4.3 Case Law Review

Within the caselaw section, New Zealand caselaw relevant to landscape classification and evaluation was reviewed. This enabled the key aspects considered robust by the courts to be drawn out from the relevant cases.

## **4.4 Results**

The four main approaches to classifying regionally significant surf breaks in New Zealand were identified. Once these had been identified, each approach was researched in-depth and the key features of the approaches were outlined.

The key aspects that make up classification systems, as discovered and outlined within the literature review were used to create an evaluative framework which was converted into table form. The four main approaches to classifying regionally significant surf breaks within New Zealand were then evaluated using this table. This method enabled the key aspects of each classification approach to be found and therefore the likely implications of these classification approaches based on how they are constructed. The key aspects that make a robust methodology according to the New Zealand courts identified within the case law section were also put into table form. The four main approaches to classifying regionally significant surf breaks were assessed against these criteria, to see whether they would be considered robust within the New Zealand courts.

To identify the approaches used and stage of identification of each New Zealand regional council, relevant planning documents including those in the proposed stages were reviewed. This combined with relevant literature enabled an outline of each region to be carried out, specifying their approach and the stage they were at with their approach. This information was converted into table form to enable easier comparisons of approaches and stages between the different New Zealand regions.

## **4.5 Discussion**

The discussion section involved applying the theoretical concepts outlined in the literature review to the results found. Therefore, the theoretical implications of the current approaches and the likely advantages and disadvantages of using these approaches to identify regionally significant surf breaks was outlined. Also, the theoretical implications of the approaches used by New Zealand's regions to classify their surf breaks have also been explored within this section. This section also provides some potential solutions to the issues identified.

## Chapter 5

### Results

This chapter sets out the results of this research, this includes key definitions regarding surf breaks, the importance of surf breaks and reasons why they need to be protected. It sets out the findings in terms of how surf breaks are incorporated into New Zealand's legislative context both nationally and regionally. The key findings relating to the four main approaches used to assess regionally significant surf breaks, have been incorporated into a table form, enabling comparisons to be made within the results analysis section. Also, the results of researching the regional councils approaches around New Zealand have been incorporated into table form.

#### 5.1 Surfbreak Definition

A surf break is defined in the NZCPS 2010 as "A natural feature that is comprised of swell, currents, water levels, seabed morphology, and wind. The hydrodynamic character of the ocean (swell, currents and water levels) combines with seabed morphology and winds to give rise to a 'surfable wave'. A surf break includes the 'swell corridor' through which the swell travels, and the morphology of the seabed of that wave corridor, through to the point where waves created by the swell dissipate and become non-surfable. 'Swell corridor' means the region offshore of a surf break where ocean swell travels and transforms to a 'surfable wave'. 'Surfable wave' means a wave that can be caught and ridden by a surfer. Surfable waves have a wave breaking point that peels along the unbroken wave crest so that the surfer is propelled laterally along the wave crest." (New Zealand Coastal Policy Statement, 2010). There are many different types of surf breaks which can be broadly incorporated into five main categories, headland or point breaks, beach breaks, river or estuary entrance bars, reef breaks, and ledge breaks (Scarfe, Healy, & Rennie, 2009).

#### 5.2 Social and Economic Aspects

Surfing has been considered an alternative or fringe sport for many years but does in fact have a significant economic value. In the mid-1990s the surfing industry was estimated to be worth US\$10 billion with over 10 million participants worldwide and a 12-16% growth rate per annum in surfer numbers (Scarfe et al., 2009). In a more recent estimate carried out by McGloin (2005) he calculated that the global surf industry was worth 7 billion annually (Scarfe et al., 2009). There is also believed to be 18-50 million global surfing participants which, these figures illustrates the economic importance of surf breaks as these are an essential part of the sport of surfing (Scarfe et al., 2009).

Surfing also helps to improve the health and well-being of those participating in it. This is illustrated by a study conducted on 84 young people aged from 8 to 18, all of whom faced mental health issues or social exclusion (Godfrey, Devine-Wright, & Taylor, 2015). They were involved in a 6-week intervention called the Wave Project, which involved the activity of surfing. The results showed a significant and sustained increase in wellbeing for the participants (Godfrey et al., 2015). Therefore, this shows the positive benefits surfing has on people that surf and therefore society as a whole. This illustrates another reason why surf breaks are being protected within legislation.

### **5.3 Nationally Significant Surfbreaks**

New Zealand is considered to be at the cutting edge of international attempts to protect surf breaks (Skellern, Rennie, & Davis, 2009). This is through its legislative approach to surf break protection which was first implemented through the New Zealand Coastal Policy Statement, 2010. Within the (New Zealand Coastal Policy Statement, 2010), Schedule 1 lists 17 surf breaks around New Zealand that are classified as nationally significant. Policy 16 of the NZCPS seeks to protect surf breaks of national significance by ensuring activities in and around the coastal environment do not adversely affect the surf break (New Zealand Coastal Policy Statement, 2010). Nationally significant surf breaks were included in the NZCPS 2010 because of the significant benefits to people and communities both socially and economically (Board of Inquiry, 2009). They are also a finite resource that can easily be affected by inappropriate use and development of the coastal marine area (Board of Inquiry, 2009). Because they are finite resources and naturally occurring, surf breaks help constitute the natural character of the coastal environment therefore section 6 (a) of the RMA applies. This section implies that sufficiently representative breaks in their natural context should be protected and those that are unique or rare should be given a greater level of importance than those that are common (Board of Inquiry, 2009). Also, section 6(b) of the RMA applies as natural surf breaks can be considered outstanding natural landscapes in their own right (Board of Inquiry, 2009). The methodology used to identify nationally significant surf breaks was predominantly based on the Wavetrack approach, a New Zealand surf break guide that describes 470 surf breaks in New Zealand. This guide gives each surf break a stoke rating out of 10, 16 of New Zealand's surf breaks were given a 10 out of 10 therefore these 16 are classified as being nationally significant (Board of Inquiry, 2009). The only break that was included as a nationally significant surf site that didn't have a 10 stoke rating was Papatowai (Board of Inquiry, 2009). Papatowai has a stoke rating of 8 but was included because of its growing international profile as a high performance big wave break (Peryman, 2011b).

### **5.4 Regionally Significant Surfbreaks**

Local governments around New Zealand are at various stages of identifying regionally significant surf breaks within their region. This is guided by policy 13 of the NZCPS 2010 which states that the natural

character (including surf breaks) of the coastal environment should be assessed and areas of high natural character identified. Local governments should include the provisions relating to identification and preservation of natural character in regional policy statements and plans where appropriate (New Zealand Coastal Policy Statement, 2010). Even though local governments are required to give effect to the NZCPS 2010 it is not mandatory for them to identify regionally or locally significant surf breaks. Therefore, this may lead to an uneven approach to surf break protection around New Zealand (Skellern et al., 2009). The NZCPS 2010 hasn't provided any specific guidance on how to implement surf break policy or a method to identify regionally significant surf breaks. Therefore, identifying and classifying surf breaks presents a number of challenges for local governments, as many of them lack expertise relating to surfing and surf breaks (Peryman, 2011b). With no overall standard methodology used to classify regionally significant surf breaks, local governments around New Zealand have used several different methodologies.

New Zealand local governments using different methodologies can and has led to many issues, these include confusion, questioning and arguments on methodologies used. If the methodology isn't robust the local governments can be taken to court which is an unnecessary cost of time and money. Therefore, it is important to have a methodology that effectively classifies regionally significant surf breaks that can be used by all New Zealand's local governments. Currently there are four main methodology approaches, the first is the Wavetrack approach that has been used to classify nationally significant surf breaks. The expert assessment approach utilises the expertise of local surfers and surfing experts to assess all the surf breaks in the region and decide on which ones are regionally significant (Edwards & Stephenson, 2013). The Spot X approach is similar to the Wavetrack approach as its also based on a surf guide just with different authors. And finally, the scientific approach which uses a number of different methods to assess a surf break.

## **5.5 New Zealand's Approaches to Surfbreak Classification**

### **5.5.1 Wavetrack Approach**

Wavetrack is a national surf guide that uses a 10-point stoke meter to rate surf breaks quality when a swell is running. The breaks are not weighted on their areas swell consistency. Morse and Brunskill (2004) state that this is to ensure the guide offers an accurate appraisal of each breaks potential when optimum conditions are present. However other than this statement specifying what the surf breaks are on, explanation of the particular methods used to decide the quality of each surf break in optimum conditions are not provided. The authors of Wavetrack, Morse and Brunskill (2004) acknowledge "fifty local surfers who each shared a lifetime of local knowledge to help create this book" (p.5) The guide covers surf breaks from all the regions of New Zealand however who exactly

these fifty surfers were and where they are from is not specified (Rennie, 2016a) The fact that this approach is national can led to a number of issues when used at the regional level (See Appendix A).

### **5.5.2 Spot X Approach**

The Spot X method is based on Spot X's *Surfing in New Zealand* written by Pita Ngaru. Like the Wavetrack method it is also a national surf guide that gives surf breaks a rating from 1-10, with 1 being pretty poor and 10 being "just sick" which is surfing jargon for excellent (Ngaru, 2010). This guide is based on Pita Ngaru's views although he received expert contributions from Glen Wilson, Paul Davis, and Sue Chatterton (Ngaru, 2010). This approach like Wavetrack is also lacking in details of the methods used to decide on each surf breaks rating. There are several differences and inconsistencies between this guide and the Wavetrack guide (See Appendix B).

### **5.5.3 Scientific Approach**

The scientific analysis methodology is an approach that has been developed and advanced as part of a 3-year scientific research project in New Zealand, funded by the Ministry for Business, Innovation and Employment ("Surfbreak Research," 2016). This approach involves collecting a wide range of data, including physical and social parameters, hydrographic surveys and geomorphological assessments ("Surfbreak Research," 2016). For a more in-depth explanation of the methods used to collect this information and what these assessments include (See Appendix A). This approach uses this data to carry out numerical modelling of surf breaks and the predict the effects of future changes to the surf break. Most of the data collected in this approach is measurable scientific information, however it also attempts to incorporate public and local iwi consultation (See Appendix A). According to the creators of this approach, its main purpose is to help address the little to no existing scientific knowledge of the vast majority of New Zealand's surf breaks ("Surfbreak Research," 2016). They believe this approach could generate the knowledge necessary to incorporate management guidelines into the NZCPS during the next amendment. They also believe it could be adopted by district and regional councils to support the sustainable management of coastal resources ("Surfbreak Research," 2016).

### **5.5.4 Expert Assessment Approach**

The expert assessment method can be constructed and carried out in many ways, however the essential components to this approach is that an expert or group of experts create a criterion. This reflects their views on the important aspects of surf breaks, this is followed by their assessment of the surf breaks in regard to these criteria (Northland Regional Council). Therefore, this approach can be considered a more advanced version of the Wavetrack approach. This is because the Wavetrack approach simply measures the quality of the wave in the best possible conditions, whereas the



expert assessment approach can consider other attributes like consistency and the potential for waves with qualities suitable for learners to be valued highly. This approach can also identify greater numbers of surf breaks than guides like Wavetrack and Spot X as it can be focused regionally, whereas these guides are both national. Therefore, the expert assessment approach is more likely to incorporate a greater level of detail than methods like Wavetrack (Rennie, 2016a).

## **5.6 Results and Analysis**

This section provides the key results in table form followed by analysis after each results table is presented.

**Table 1 The four main approaches to surf break protection assessed against an evaluative criterion based on the literature review.**

Approach	Approach Type	Community Participation	Feature or Area	Transparency	Regionally Specific
Wavetrack	Hybrid approach, expert assessment with some community input.	Limited to 50 local surfers sharing their local knowledge.	Feature.	This methodology lacks transparency, as there are no details on the methods used to decide on the ratings for each surf break.	No, this is a national approach.
Spot X	Expert assessment approach.	No community participation, as the method was carried out by the author with contributions from three other experts.	Feature.	This methodology lacks transparency, as there is no explanation of the methods used to decide on the rating for each surf break.	No, this is a national approach.
Scientific Approach	Expert assessment approach, incorporating community input.	Community participation is limited, as they are consulted and given the opportunity to express knowledge on the surf breaks. However, their contribution is not guaranteed to be incorporated into the approach.	Feature.	The scientific approach has a high degree of transparency as it sets out all the processes that it intends to carry out to identify regionally significant surf breaks.	No, this is also a national approach. However, it could be adjusted to focus on the regional scale.
Expert Assessment method	Expert assessment approach.	Potential for community participation, however the overall	Feature or Area.	The transparency of this approach can	Yes, although this method

		decisions will always be made by experts.		vary. It has the potential to be transparent to the point that the criteria created and used by expert/experts are outlined. Or these may not be shared in some instances making the transparency poor.	can be adjusted to focus on any scale.
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The Wavetrack and the Spot X methods lack transparency, therefore some of the table contents and results analysis is assumptions based on the information available, rather than definite conclusions.

### 5.6.1 Comparison of Approaches

The Wavetrack, Spot X and Scientific method all seem to be feature focused, rather than area (Table 1). The Wavetrack and the Spot X approach give ratings to the surf break itself, rather than the landscape and surrounding area therefore it is assumed they are feature focused. The data collection methods within the scientific approach are all done in relation to gaining a scientific understanding of the surf break, therefore also predominantly feature focused (Table 1). The expert assessment method could be used to focus on either the feature or the area depending upon the criteria the experts create and use to carry out their assessment (Table 1).

All four of these approaches are predominantly expert led, although most of them have some form of community participation. Wavetrack's use of the knowledge of 50 local surfers means that surfing community knowledge has been incorporated into this approach (Table 1). However, who these surfers are and whether their views reflect the views of the community is impossible to conclude due to this approaches, lack of transparency. It is also assumed that the surfers were selected by the book authors, without any formal process of communities choosing representatives, therefore this approach to community participation is not very equitable or inclusive. The Spot X approach only incorporated the views of four people including the author therefore community participation in this approach is virtually non-existent (Table 1), even though these four-people involved may have community knowledge of some areas in New Zealand. The scientific approach does incorporate communities during the initial stages of their research (Table 1), however this can only be considered tokenism community participation at best (Stelmach, 2016). This is because the community is

engaged and gives information within the confines of the expert led approach. The expert assessment approach also can incorporate community participation to a certain extent (Table 1), however as it is an expert led approach, experts create it and make the final decisions on classification.

These approaches range from being transparent to ambiguous. As previously mentioned both the Wavetrack and the Spot X method have little to no transparency (Table 1). Therefore, it is impossible to know how they decided on the ratings for each surf break other than a general overview they provide. The scientific approach has loosely set out the methods it will use to assess surf breaks, although the details are not exact, this approach does provide a reasonably high level of transparency compared to the other approaches (Table 1). The expert assessment approach has the potential to provide a reasonably transparent approach, if the experts outline and make available their methodology (Table 1). However, this approach is based on expert opinion, therefore sometimes the outcomes will simply come down to a judgement call based on the expert’s opinion which may not be transparent.

The Wavetrack and Spot X methods are both national approaches, as they both provide a surf guide for New Zealand’s surf breaks (Table 1). Therefore, the surf break ratings provided by these guides are carried out at a nation scale enabling breaks all around New Zealand to be compared with one another. The scientific approach, is also a national approach as it is being tested at seven different surf breaks around New Zealand. However, this approach could be altered to become regionally focused. The expert led approach can be specifically designed to be used at either the regional or national scale (Table 1).

**Table 2 A comparison of surf break identification approaches taken by New Zealand’s regions**

Regions	Nationally Significant Surf breaks/groupings	Regional significant surf break identification stage	General regionally significant surf break identification methodology.
Northland	Peaks – Shipwreck Bay Peaks – Super tubes - Mukie 2 – Mukie 1	Included in Proposed Regional Plan	Wavetrack and expert panel for identification. Multi-criteria analysis applied by an expert panel.
Auckland		Included in the Auckland Unitary Plan	Wavetrack and expert identification. Expert assessment approach to assess each break against a criterion.

Waikato	Manu Bay – Raglan Whale Bay – Raglan Indicators – Raglan Whangamata Bar	Not identified.	
Bay of Plenty		Referred to in the Regional Policy Statement, Included in the Regional Coastal Plan	Starting point of surf break identification using Wavetrack, additional identification through surfing community consultation. Expert assessment approach.
Gisborne	Makorori Point – Centres Wainui – Stock Route – Pines – Whales The Island	Not identified, regional coastal policy statement under review.	
Hawke’s Bay		Not identified.	
Taranaki	Waiwhakaiho Stent Road – Backdoor Stent – Framhouse Stent	Identified in the Regional Coastal Plan. Regional Plan reviewed and first draft released in 2016.	The most recent approach to identification included consultation with local surfer and the application of a criteria by experts.
Manawatu- Wanganui		Not identified.	
Wellington	The Spit	Identified within the Proposed National Resources Plan.	Predominantly Wavetrack based approach.
Tasman		Not identified.	
Nelson		Not identified.	
Marlborough		Not identified.	
West Coast		Not identified.	
Canterbury	Mangamaunu Meatworks	Not identified. Regional Policy Statement has included a policy that commits to identification of surf breaks of the regional significance	
Otago	Karitane Whareakeake Papatowai	Not identified.	
Southland		Not identified.	

## References

(Northland Regional Council; Orchard, 2017; Peryman, 2011a; Rennie, 2016a, 2016b)

### **5.6.2 Regional Situation**

There are five regions that have identified or in the process of identifying regionally significant surf breaks within their regions, these are Northland, Auckland, Bay of Plenty, Taranaki and Wellington (Table 2). Even though other regions have some policies on surf breaks, they have not yet taken the step of identifying their regionally significant surf breaks (Table 2). Northland, Auckland and Bay of Plenty have all used an approach that involves identification of surf breaks within their regions using the Wavetrack approach (Table 2). These regions then combine it with other approaches, as both Northland and Auckland used expert knowledge to identify regional surf breaks missed by the Wavetrack approach (Table 2). Whereas the Bay of Plenty used community participation and knowledge to identify regional surf breaks missed by the Wavetrack approach (Table 2). Taranaki also used Wavetrack to identify regional surf breaks, when they first incorporated regional surf breaks into legislation (Table 2). However, in the more recent version they are using consultation with the surfing community to review the location of known surf breaks (Table 2). Wellington is the exception, as they have based their entire approach on the Wavetrack approach (Table 2).

**Table 3 A comparison of the four main approaches to surf break identification assessed against the criteria considered robust by New Zealand caselaw.**

Methodology	Criteria									
	<b>Wakatipu Environmental Society Incorporated and others v Queenstown- Lakes District Council C180/1999 (Amended Pigeon Bay Criteria)</b>						<b>Upper Clutha Tracks Trust v Queenstown Lakes District Council</b>	<b>Waiareka Valley Preservation Society inc, Kakanui Riverwatch Society and Holcim NZ Limited and Renaison v. Waitaki District Council and Otago Regional Council</b>		
	Natural Science factors.	Aesthetic values	Expressiveness	Transient Values	Shared or recognised values	Tangata Whenua	Historical association	Biophysical, perceptual and associative aspects	Mathematical or mechanical approach	
Wavetrack	✓	×	×	×	-	×	×	-	×	
Spot X	✓	×	×	×	-	×	×	-	×	
Scientific Approach	✓	×	×	×	-	✓	✓	✓	✓/×	
Expert Assessment method	✓	×/✓	×/✓	×/✓	-	×/✓	×/✓	×/✓	×/✓	

Under the NZCPS 2010 surf breaks are considered to be part of the natural character, however as the caselaw for natural character is undeveloped at this stage, this table is an assessment of these approaches against an assessment of landscapes. This could provide a similar approach to the assessment of natural character. Although for criteria like Tangata Whenua, and historical association, it could be argued has very little to do with the assessment of surf breaks. As previously outlined the lack of transparency for methodologies like Wavetrack and Spot X makes it difficult to assess how they compare with this criterion. However, if possible assumptions will be made based on available information or else the particular box has been left blank if assumptions are too difficult to make based on limited information.

### **5.6.3 Comparison of Approaches in Relation to Case Law**

Only one of the amended Pigeon Bay criteria is fulfilled by all four methodologies (Table 3). This is the natural science factors, because these approaches consider the surf break itself and the type of waves that it creates. Although within the amended Pigeon Bay criteria the natural science factors include the geological, topographical, ecological and dynamic components of landscape. Therefore, the Wavetrack and Spot X methodologies may only consider the dynamic components of the landscape which combine to create surfable waves (Table 3). The expert assessment approach can be carried out in many ways therefore it can be designed to incorporate all of these factors or none of them (Table 3), depending on the expert's views and ideas. The scientific approach fulfils the highest number of these criteria not including the expert assessment approach (Table 3). As it states it will account for many of the aspects outlined, including cultural values by consulting with Iwi which can relate to Tangata Whenua. It also incorporates public consultation which may reflect historical association of surfing within the area. The scientific approach can be however seen as a mathematical or mechanical approach in some regards, as it seeks to carry out the same method on all different types of surf breaks, although it doesn't try to put a numerical value on these breaks as is done by the Wavetrack and the Spot X method (Table 3).



## Chapter 6

### Discussion

This chapter cover the main implications of the results of this research, this includes potential solutions to some of the issues identified.

#### 6.1 The Importance of Surfbreaks and Impacts of Classifying

Within the NZCPS 2010, Surf breaks are considered to be areas of high natural character, that are important to the economic and social wellbeing of the nation and communities. As outlined in the literature review, surfing is a multi-million-dollar worldwide industry that provides economic benefits for many communities particularly those near surf breaks (Scarfe et al., 2009). Surfing also benefits communities in social ways as people can use it as a form of exercise and relaxation (Godfrey et al., 2015). Natural surf breaks are also finite resources that can be damaged and even destroyed by activities within the coastal marine area. All of these factors contributed to the classification of nationally significant surf breaks within the NZCPS 2010 and the directive for regional councils to classify surf breaks of regional importance within their regions (New Zealand Coastal Policy Statement, 2010). The intent of classifying surf breaks is to provides legislative recognition and therefore increased protection against harmful activities. However as outlined in the literature review, classification of anything may also have unintended negative consequences. Some of these consequences may related to increased tourism and popularity due to the surf breaks identification and recognition of its significance (Braverman, 2015). As surfers will want to visit and surf waves that are considered significant, because of the breaks renown as a high-quality surf location. Increased tourism can have damaging effects on the surf break and the surfing experience, also communities that use the surf break may benefit economically but local surfers will most likely be disappointed about the increased number of surfers in the water. However, these unintended negative consequences may be preferable to leaving surf breaks unclassified, which would mean they are vulnerable to activities in the coastal marine area that could damage or even destroy surf breaks.

#### 6.2 Secret Surfbreaks

An alternative approach to surf break protection used by surfers is to keep surf breaks secret. This is a concept that has cultural significant for surf-riding communities, as secret spots have been part of the surf culture for many years (Peryman, 2011a). The purpose of keeping surf breaks secret, is to preserve the existing values of a surf break, so that the use, access and enjoyment aren't detracted from (Peryman, 2011a). However, with modern technology this approach is becoming almost impossible to achieve, as surf breaks can be found using tools like google earth as well as information

about surf breaks released onto the internet. This approach can only be carried out if a surf break is isolated and only a few surfers know about its existence. However, the problem with this approach is that if an activity was to occur that would negatively impact a secret surf break it would have no legislative protection. Also see Wavetrack's approach to secret surf breaks (See Appendix B).

Therefore, classification of surf breaks that are already well known seems like the best approach, however classifying and exposing secret surf breaks is not a good approach as surfing communities will be very upset if this is carried out. Therefore, incorporating secret surf spots into legislation without revealing their location could provide a solution. A similar approach is used to protect waahi tapu sites, which are sites considered sacred by Maori because they have been subject to long-term ritual restrictions on access or use for example a burial ground, a battle site or a place where tapu objects were placed (Waikato-Tainui, 2013). The location of some of these sites are undisclosed because of cultural purposes, however they have still been mentioned and included in legislation and plans. One of the issues outlined by Waikato-Tainui's is that although they know of the secret waahi tapu and waahi tupuna sites, often destruction of these sites goes ahead because Waikato Tainui is not notified about the proposal (Waikato-Tainui, 2013). Therefore, they believe they must be more involved in resource management in order to effectively manage and protect these sites (Waikato-Tainui, 2013). Therefore, if secret surf break locations are mentioned in legislation, they either need to be known by the council but excluded from public knowledge. Or else a local/ or group of local surfers need to be notified when a coastal development is being proposed and then they can decide whether it will adversely affect a secret surf break. Limitations of supplying the council with the locations to be kept secret, is that local surfer may not trust them to keep it confidential. The other option to notify local surfers on coastal developments may be too much information for the surfers to handle. Therefore, a compromised solution is for local surfers to provide zones in which secret surf breaks could be located, without giving away the exact location. These zones would be considered confidential by the local government body, and if a coastal development was going to affect any part of the zone it would be referred to local surfers who could then decide if it would adversely impact the secret surf break.

### **6.3 Implications of Current approaches to Surfbreak Classification**

The four main approaches used to classify regionally significant surf breaks in New Zealand are all expert led, although community participation is incorporated into some of these approaches to varying degrees. The implications of this is that the surfing communities around New Zealand may not get the recognition and influence they feel they deserve within the classification process. As if the views of community users are being ignored, a vast amount of knowledge they possess is being

discounted. However, a completely community led approach to classification of surf breaks, although it might empower the community it would also face many challenges.

Some of the key challenges faced by a community approach is deciding on the members of the community that have an influence over this approach. As this will have major impacts on the outcomes of the approach, for example if expert surfers are given control of the approach, the surf breaks that provide good quality, challenging and difficult waves for short board riders may be favoured. Therefore, ignoring the views of novice level shortboarders and other wave users such as body boarders, stand up paddle boarders, long boarders and body surfers. However, if all wave users are given equal influence within a community led approach, the most popular surf breaks will be considered the most significant. This discounts the significance of isolated surf breaks and their importance to the few users that use them. Therefore, a community led approach may be extremely difficult to carry out, and is highly dependent on the community itself and the stakeholders with the most influence. The expert assessment approach can provide a hybrid approach by incorporating the views of experts and communities.

As previously mentioned one of the main critiques of the RIVAS expert assessment was the use of external experts which meant they had little to no knowledge of the local conditions. However as shown in the Northland expert panel assessment approach using local experts as well as being community members means that community views can be incorporated into the expert led approach (Northland Regional Council). Therefore, representation of other wave users beside surfers into the expert panel may help to make this approach more equitable for all types of surf break users.

The four main approaches are focused on the surf break as a feature rather than an area, although the expert method can be adapted to focus on the area. The scientific method also considers the surrounding area however this is done to gain a better scientific understanding of the surf break itself. Therefore, by focusing on the feature it can result in the surrounding area being neglected in terms of its impact on the surfing experience. For example, aesthetic values of the area if altered will not impact the surf break itself, however it may negatively impact the experience of surfing in that location.

The lack of transparency of the Wavetrack approach and its use to guide the selection of nationally significant surf breaks, is not likely to be considered robust by the New Zealand courts if challenged. This is because the methodology is not detailed and the approach they have used to decide on ratings is very ambiguous. This is an issue and needs to be remedied by developing an approach to classify surf breaks that can be used to classify potentially more nationally significant surf breaks and regionally significant surf breaks that is considered robust by the New Zealand court system. Also, the lack of direction within the NZCPS 2010 on the approach regional councils should use to identify

regionally significant surf breaks makes it very difficult for councils to carry out their requirements under the NZCPS 2010, as using the Wavetrack approach could result in costly court cases if challenged.

The implications of the comparison of the four main approaches against the criteria the courts use for landscape assessment approach cannot be given a lot of weight. As surf breaks are considered part of the natural character rather than landscapes. However, it does imply that the Wavetrack and Spot X approaches do not consider as many factors as the scientific and the expert led approach has the potential to incorporate. Therefore, it may suggest these approaches if used correctly are better suited to classifying surf breaks in New Zealand particularly at the regional level.

An approach that could be used to address some of the issues associated with classifying surf breaks, is to incorporate significant surf breaks at the district level alongside the current national and regional levels. It is recognised that the district council boundaries do not extend into the coastal marine area, therefore surf breaks are not usually considered by district councils. However, many surf breaks have district importance due to the social and economic benefits they provide. This approach could be used to solve the difficulty of incorporating surf breaks that are not considered high quality from an expert surfer perspective, however are extremely important to the district by providing an inclusive wave that can be used by anyone. Therefore, this would enable nationally or regionally important waves to be considered high quality from an expert surfer level perspective, and other important waves to the district even if they are low quality from an expert level perspective to be considered as district level significant.

Approaches used by regional councils around New Zealand to identify regionally significant surf breaks are at many different stages of identification. This is an issue that needs to be addressed, as only five councils have carried out identification or are in the process of carrying out identification, the majority have not. One of the main reasons most have not begun this process is because they do not know what approach to use, or do not have the resources to create their own approach. Therefore, an approach needs to be developed that can be used by every regional council to identify regionally significant surf breaks, that is considered robust in the courts enabling the current piecemeal approach to be ended. As surf breaks themselves may be lost or damaged if a unified approach is not created and implemented.

## Chapter 7

### Conclusion

In conclusion, this dissertation has outlined surf break classification in New Zealand with particular regard to the identification of regionally significant surf breaks in New Zealand. One of the main aims was to investigate and highlight the strengths and weaknesses of the different methodologies used to classify regionally significant surf breaks by regional councils around New Zealand. The other main aim was to outline the approaches used by all New Zealand's regional councils that have carried out classification or are in the process of carrying it out.

To meet these aims these objectives were carried out.

1. To develop an evaluative framework to assess the various methodologies

The evaluative framework was created, through a review of literature relating to classification in general, and more specifically landscape type classification methods. It was found that there are two main approaches to classification, expert-led and community led. Both approaches were reviewed and the main features were identified. This enabled an evaluative criterion to be created, which incorporated the key features of classification such as approach type, area or feature classification, community participation, scale of focus and transparency. These key features were incorporated into a table form.

An evaluative framework was also developed using New Zealand's caselaw around landscape classification and assessment. This framework is not conclusive and it only provided a guide to what may be considered by the courts to be robust, as it is based on landscape assessment rather than natural character which is what surf breaks are part of.

2. To use the evaluative framework to assess the methodologies

The four main approaches to assessing regionally significant surf breaks in New Zealand were then assessed against the evaluative framework created using the literature review. This enabled comparisons to be made between the approaches, as it showed the similarities and the differences between the approaches. For example, all the approaches are expert-led although most incorporate community participation aspects therefore can also be considered hybrid approaches. It also found that the Wavetrack and Spot X approaches lack transparency, therefore local governments using these approaches to identify regionally significant surf breaks within their region are risking being challenged in court and not having much evidence to support their approach.

The evaluative framework used to assess the approaches against New Zealand caselaw showed that the scientific and expert-led approaches are most likely to be considered more robust than the other approaches as they fulfilled more of the criteria.

3. To identify the stage and approach of regional councils around New Zealand

A review of planning documents from New Zealand's regional councils enabled the stage of regionally significant surf break identification of each regional council to be found, as well as the approach being used. This showed that only 5 councils had identified or were in the process of identification, whereas the majority have not identified regionally significant surf breaks. Also, most of the approaches used by regional councils were different. Therefore, it can be concluded that the current approach to identification lacks direction and consistency therefore often resulting in identification not being carried out, which may lead to damaging consequences for surf breaks. Or in some cases approaches that are unlikely to be considered robust by the New Zealand courts are being used. Therefore, it is clear from this research that a robust approach needs to be agreed upon and specified within the NZCPS that makes it easy for regional councils to carry out. As this will enable New Zealand's regionally significant surf breaks to be identified effectively and protected from activities that may damage them.

4. To assess the strengths and weaknesses of each methodology

This objective was achieved throughout this dissertation particularly in the results, results analysis, and the discussion sections.

## **7.1 Overall Findings**

Therefore, overall this research has found that regionally significant surf break identification in New Zealand is piecemeal, as there are several different approaches that can be used and are being used. All the current approaches have strengths and weaknesses, although the lack of transparency in the Wavetrack and Spot X guides indicates that they may not be considered robust identification methods, even though Wavetrack was used to identify nationally significant surf breaks. Therefore, a unified approach needs to be found that provides a robust methodology and can be used by all New Zealand's regions.

## Appendix A

### National vs Regional Scale and Scientific Approach

#### 7.2 Wavetrack Method National vs Regional Scale

A problem with using the Wavetrack methodology to identify regionally significant surf breaks is that the Wavetrack surf guide is a national guide. Therefore, it may not be appropriate to use it to identify regionally significant surf breaks because the surf breaks are assessed based on a national criteria enabling comparison between regions (Rennie, 2016b). However, assessing regionally significant surf breaks requires comparisons between regional waves rather than national waves (Rennie, 2016b). Therefore, regions with a high number of good quality surf breaks based on the wave track method would have a high number of regionally significant surf breaks. Whereas a region with a low number of good quality surf breaks using the wave track method may only have 1 or 2 regionally significant surf breaks (Rennie, 2016b). This is a problem with the Wavetrack method as some wave-scarce regions may have surf breaks that are significant in the regional context that would not be rated high enough to be included using the Wavetrack method (Rennie, 2016b).

#### 7.3 Scientific Analysis Method

The method is currently being used to analysis seven key sites these are

- Aramoana
- Lyall Bay
- Manu Bay
- Piha (South)
- Wainui (Pines)
- Whangamata
- Whareakeake

This method is designed to be holistic, therefore it employs a wide range of techniques for data collection and uses numerical modelling ("Surfbreak Research," 2016) . Some of the key techniques involved in collecting the data includes the use of remote camera stations which are used to capture images of the surf break from an oblique angle on a daily basis. These images can be manipulated to

produce a “birds-eye” view of the surf break, allowing automated systems to process the data to extract key information about physical parameters such as wave breaking patterns and the formation of rip currents, along with social parameters like the number of surfers using the spot ("Surfbreak Research," 2016). Hydrographic survey are another data collection method, these involve recording the elevation and shape of the seabed, these surveys are repeated to monitor the changes overtime ("Surfbreak Research," 2016). A geomorphological assessment is also used to provide information on how the configuration of the shoreline, headlands, tidal channels, sand banks and other geomorphological features create surfable waves and how the shore break is maintained over time ("Surfbreak Research," 2016).

This method seeks to encourage public consultation to gain local knowledge about the surf break. Methods used in this approach include stakeholder meetings held at study sites, potentially leading to valuable information being gained and documented including local knowledge, the determination of perceived and real threats to surf breaks, water safety aspects and the social and cultural importance of the site ("Surfbreak Research," 2016). The other key part of this process will be separate consultation with local iwi in order to ensure the principles of the Treaty of Waitangi (Te Tiriti o Waitangi), and kaitiakitanga are upheld ("Surfbreak Research," 2016).

Numerical Modelling is another process that will be carried out as part of the scientific method, this involves computer wave simulation which combined with the data collected, can predict wave breaking characteristics, such as where, how often, how fast and what shape the wave is when it breaks ("Surfbreak Research," 2016). This allows a better understanding of how a particular surf break reacts to different incident wave conditions which is extremely useful for helping to determine baseline conditions against which future effects and changes to the surf break can be monitored ("Surfbreak Research," 2016).



## Appendix B

### Comparison of Spot X and Wavetrack Surf Guides

#### 7.4 Spot X and Wavetrack Surf guides

Comparing the Spot X and the Wavetrack shows that although they both seek to provide a guide to the surf breaks of New Zealand, they have many discrepancies and differences. One of these discrepancies is that although they both separate the surf breaks into different regions/areas these have different boundaries depending on the guide. For example the surf breaks just south of Whangarei such as Marsden Beach and Ruakaka Beach are considered to be part of the Auckland region in the Spot X guide however in the Wavetrack guide this is part of Northlands East Coast (Morse & Brunskill, 2004; Ngaru, 2010). This issue is easy to solve as the breaks will included into the region they are situated in for local governance purposes. Another difference is the identification of the breaks themselves, as in some cases Wavetrack identifies a break Spot X hasn't and vice versa, or else they have used different names for the same surf break. For example, what's known as Marsden Point in the Wavetrack guide includes what's known as the Ruakaka Beach in the Spot X guide. The Wavetrack guide also identifies Twilight beach as a surf spot whereas Spot X doesn't (Morse & Brunskill, 2004; Ngaru, 2010). Another difference is that of the surf breaks identified and mentioned that are the same, some of them are in slightly different places depending on the guide.

##### 7.4.1 Nationally Significant Surfbreaks/areas

These areas were given a 10 stoke rating by the Wavetrack guide apart from Papatowai.

###### Northland

- Peaks – Shipwreck Bay
- Pines – Supertubes -Mukie 2 – Mukie 1

###### Waikato

- Manu Bay – The Point
- Whale Bay
- Indicators
- Spot X Waikato region

## Taranaki

- Waiwhakaiho
- Stent Road

## Coromandel

- Whangamata Bar

## Gisborne

- Makorori Point / Centres
- Wainui – Stock Route, Pines, Whales
- The Island

## Wellington

- The Spit

## Kaikoura

- Mangamaunu
- Meatworks

## Otago

- Karitane
- Murdering Bay (*Whareakeake*)
- Papatowai (8 stoke rating).

*Reference (Morse & Brunskill, 2004)*

## **Spot X surf breaks rated a 10**

## Waikato

- Raglan indicators

## Bay of Plenty

- Cooks Cove

*Reference (Ngaru, 2010)*

This shows the significant difference in the two guides and their rating methods, as only two breaks in New Zealand are given a 10/10 by Spot X, and one of these breaks (Cooks Cove) isn't given a 10 stoke rating by the Wavetrack guide.

#### **7.4.2 Wavetrack's Approach to Secret Spots**

The Wavetrack guide has included breaks that they class as Spot X breaks which they haven't revealed the location for but they have revealed some of its information and the regions that they are in (Morse & Brunskill, 2004). One of these breaks defined as a Spot X break is in the Waikato Region and has been given a stoke rating of 10/10 (Morse & Brunskill, 2004) which under the criteria used to decide on the nationally significant surf breaks should have been included. However, as the location isn't revealed it can't be classed as a nationally significant surf break.

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