

Northland Regional Landscape Assessment Worksheet

	Unit name – KAI-IWI LAKES
DESCRIPTION AND CHARACTERISATION	
Component	Comment
Land Types <small>(refer to list overleaf)</small> Lakes and water bodies.	Forming a cluster of dune lakes on the west coast, these features are located on sand country, although they have little direct association with the coast.
Geology <small>(including geopreservation sites)</small>	<p>The Kai Iwi Lakes are basin type dune lakes formed in consolidated sand of late Pleistocene geological origin. They were formed by the accumulation of rainwater in depressions of sand underlain by relatively impermeable ironstone pans.</p> <p>The features and their context are described as lakes in depressions on early Pleistocene (Awhitu Group) cemented dunesand and associated facies, ponded at landward edge of mid-late Pleistocene (Karioitahi Group) consolidated parabolic dune belt; hillslopes of (Awhitu Group) sediments bordering Lake Waikere, Lake Taharoa and Lake Kai Iwi.</p> <p>Dune lakes are one of nine major lake types found in New Zealand and are the predominant type found along the west coast of the North Island. Lake Taharoa which covers 237ha is the third largest dune lake in New Zealand. The lake is the deepest known dune lake in the country - 37 metres deep.</p> <p>The lakes are identified in the Geopreservation Inventory as B (a site of National importance) with a vulnerability rating of 3 (unlikely to be modified by humans).</p>
Soil Types	The unit is overlain entirely by Te Kopuru sand.
Ecology <small>(including protected vegetation / features, PNAP Level 1 and 2 sites)</small>	<p>The Kaipara Ecological District PNAP report lists the three lakes as O07/018 (Lake Waikere - 35 ha) O07/022 (Lake Taharoa – 197 ha), and O07/024 (Lake Kai Iwi - 35 ha), all Level 1 sites.</p> <p>Lake Waikere, is one of the two deepest dune lakes in New Zealand (Tanner et al. 1986), is dominated by native communities and was ranked Outstanding by Wells et al. (2007). Its value is enhanced by the presence of threatened plant and animal species. Pest fish (gambusia) are present.</p> <p>The dammed dune lakes at Kai Iwi (including Lake Waikere) are Nationally Important Geological Sites (Kenny & Hayward 1996).</p> <p>Lake Taharoa is the deepest and second largest (after Lake Omapere in Kaikohe ED) lake in Northland, and one of the two deepest dune lakes in New Zealand (Tanner et al. 1986). Ranked Outstanding by Wells et al. (2007) because it is the best example of its type (clearwater) and has the deepest recorded submerged vegetation in the North Island. Many threatened plant and animal species are present, as well as the pest fish gambusia and rainbow trout. The dammed dune lakes at Kai Iwi (including Lake Taharoa) are Nationally Important Geological Sites (Kenny & Hayward 1996).</p> <p>Lake Kai Iwi was ranked Outstanding by Wells et al. (2007) because</p>

	<p>it is dominated by native plants and remains free of aquatic weeds. Unfortunately, the acutely threatened dunelake galaxias has not been recorded from this lake for many years, and is threatened by the introduced pest fish species gambusia (B. David, pers. comm.).</p> <p>Although substantially invaded by weedy adventive trees and shrubs, much of the gumland around Lake Kai Iwi remains dominated by native species and, with weed control, is capable of restoration. The dammed dune lakes at Kai Iwi are Nationally Important Geological Sites (Kenny & Hayward 1996).</p>
<p>Archaeological sites</p>	<p>Few records are available on Maori settlement patterns around the Kai Iwi Lakes. Early maps of the area record the remains of a pa on the main ridge south of Lake Kai Iwi and former burial grounds at Promenade Point and Pine Beach.</p>
<p>Heritage Landscapes</p>	<p>During the early part of the twentieth century, lakes Kai Iwi, Taharoa and Waikere along with Shag Lake and an unnamed lake north west of Lake Waikere were known as the Rotorima lakes (five lakes).</p> <p>The lakes district was at the time a major gum digging area and five gum diggers huts were observed on the western shores of Lake Kai Iwi in the late 1870s. In 1892 there was a small gum digging camp including a general store on the eastern shores of Lake Taharoa then, in 1908 a camp was established on the eastern shores of Shag Lake. The largest gumdiggers camp (Jacksons) was established near Johnsons Swamp south of lake Kai Iwi.</p> <p>In the early 1900s an attempt was made by the Hall Brothers to drain Lake Kai Iwi for gum recovery operations. A drain was dug from the present Lake Kai Iwi outlet to Johnsons Swamp and the Lake lowered by about 2 metres. At about the same time gum was being recovered from Lake Waikere with the aid of a diving bell.</p> <p>In 1921 the Crown set aside a large area of land between Lake Taharoa and the west coast for gum recovery operations. The swamps in the area were bored with hand augers in the hope of recovering gum chips. The operations met with little success and by the late 1920s most gumdiggers had left the area.</p>
<p>Landscape characterisation (including the identification of any specific characteristics)</p> <p>The Kai Iwi Lakes are basin type dune lakes formed in consolidated sand of late Pleistocene geological origin. They were formed by the accumulation of rainwater in depressions of sand underlain by relatively impermeable ironstone pans. Dune lakes are one of nine major lake types found in New Zealand and are the predominant type found along the west coast of the North Island. Lake Taharoa which covers 237ha is the third largest dune lake in New Zealand. Lake Waikere cover 35ha and Lake Kai Iwi 33ha.</p> <p>The three lakes are contained within Council owned land, known as the Taharoa Domain. This recreation reserve covers 538 ha and together the three lakes occupy well over half the total area of the domain.</p> <p>Lake Kai Iwi and Taharoa are connected by a narrow channel and are about 70 metres above sea level. Lake Waikere is more elevated and about 79 metres above sea level. Lakes Taharoa and Waikere are the deepest known dune lakes in the country. The NZ Oceanographic Institute bathymetric chart of lakes record the maximum depth of Lake Taharoa to the 37 metres, and Lake Waikere 30 metres. Lake Kai Iwi is considerably shallower than the other two lakes and has a maximum recorded depth of 16 metres.</p>	

The Kai Iwi Lakes have no known natural inlets or outlets. Their principal source of water is likely to be rain which falls directly onto the lake surface. As a result their levels fluctuate considerably with climatic conditions.

The units are identified individually, since their setting has been markedly modified in the past by the planting of exotic species, and more recently by the harvesting of those trees. In addition, the presence of camp grounds, tracks and other infrastructure, albeit within a natural context with some areas of native vegetation, has led to a reduction in levels of naturalness.

A management plan (Taharoa Domain Management Plan) has been prepared to guide the restoration of the lakes and the Domain that encompasses them. The aim of this plan is to restore the natural values whilst providing for the recreational demands.

The reserve is a popular holiday destination, with many families staying in tents around Lake Taharoa. The lake is used for water activities, although fishing is also popular.

EVALUATION

Criteria	Rank	Comment
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Natural Science Factors

Representativeness Natural landscapes are clearly characteristic of the area, district or region. The key components of the landscape will be present in a way that defines the character of the place and distills its character and essence. Endemic associations.	4	The lakes are good examples of dune lakes. They are of significance due to their size and the number of lakes contained in the cluster.
Rarity Natural features are unique or rare in the region or nationally, and few comparable examples exist.	4	Dunes lakes are not rare, however the size of the lakes and their relatively unmodified character enhances the significance of this unit.

Aesthetic Values

Coherence The patterns of land cover and land use are largely in harmony with the underlying natural pattern of the landform of the area and there are no significant discordant elements of land cover or land use.	3	The units encompass the water bodies, immediately surround land context and adjoining areas of native vegetation. The lakes show a high level of coherence within the unit and the associated terrestrial native vegetation reflects the prevailing landscape patterns. The surrounding landuse modification that has resulted from removal of the pine trees has resulted in temporary modification of the area, but it is anticipated that, under the guidance of the management plan, the natural values of the site will be restored in time.
Diversity & Complexity The elements contributing to overall landscape character are diverse and complex (particularly in ecological terms) without creating disharmony.	2	The lakes display a simplicity with the fringing and linking vegetation providing a foil and a measure of ecological diversity. The terrestrial ecological component of the lakes is, however poor and lacking in scale.
Vividness Natural features and landscape are widely recognised across the community and beyond the local area and remain clearly in the memory; striking landscapes are symbolic of an area due to their recognisable and memorable qualities.	5	<p>The landform surrounding the unit offers limited opportunities to gain views, as such the features tend to be reasonably recessive in the landscape. But whilst subtle, the lakes 'sit' comfortably within the natural folds of the landform. Recent modifications to the landscape resulting from the removal of pine trees have influenced the landscape character, but historically there has been limited modification to the landform itself.</p> <p>Clearance of the trees has detracted from the strength of the vegetation patterns immediately surrounding the lake, and has damaged the regenerating native sub canopy. In the wider area vegetation patterns appear more natural, within a</p>

		<p>modified agricultural context.</p> <p>Despite this, the colour and clarity of the water, and the colour and texture of the surrounding riparian vegetation is such that they retain a beauty and vividness particularly on bright and sunny days.</p>
<p>Naturalness</p> <p>How affected by human activity is the landscape? Does human activity intrude on the landscape? Eg.</p> <ul style="list-style-type: none"> • Presence of buildings and associated built development. • Presence of infrastructure services. • Extent of indigenous forest cover. • Homogeneity of exotic vegetation. • Presence / extent of modified agricultural land use. • Strength of natural processes / ecological patterns. • Unmodified and legible physical relief and landform. • Presence of water. 	3	<p>Permanent buildings, structures accessways and tracks tend to be limited to those associated with campground. The temporary presence of vehicles and tents lends the area a greater appearance of activity and 'built' development over holiday periods.</p> <p>Kai Iwi Lakes Road runs along the south western side of the lakes with scattered built development along this road, including the Wai Hou Mao Lodge.</p> <p>Removal of exotic vegetation has temporarily detracted from landscape values although progressive regeneration with strengthen landscape patterns and thus landscape values. There is potential for regeneration to be adversely affected by weed growth.</p>
<p>Intactness</p> <p>Natural systems are intact and aesthetically coherent and do not display significant visual signs of human modification, intervention or manipulation, visually intact and highly aesthetic natural landscapes.</p>	3	<p>The lakes and margins displays a high level of intactness, but the modified setting detracts from this.</p>
<p>Experiential Values</p>		
<p>Expressiveness</p> <p>The 'legibility' of the landscape. Natural features clearly demonstrate the natural processes that formed them.</p>	3	<p>The formative origins of the dune lakes is clear and reflected in the presence of exposed relic sand dune formations.</p>
<p>Sensory qualities</p> <p>(These are landscape phenomena as directly perceived and experienced by humans, such as the view of a scenic landscape, or the distinctive smell and sound of the foreshore).</p>	4	<p>The sensory experience gained from the unit is highly dependent on weather conditions. When sunny, the lakes are a vivid blue, and the surrounding sand brilliantly white.</p> <p>Recent vegetation clearance in the surrounding area within the Domain has tended to detract from these qualities, but the unit still ranks highly despite this.</p>
<p>Transient Values</p> <p>The consistent and repeated occurrence of transient features that contributes to the character, qualities and values of the landscape; landscapes are widely recognised for their transient features and the contribution that these make to the landscape.</p>	4	<p>Transient values are primarily associated with seasonal and meteorological cycles and variations.</p>
<p>Remoteness / Wildness</p> <p>Does the landscape display a wilderness character, remote from and untouched by human presence? Eg.</p> <ul style="list-style-type: none"> • Sense of remoteness • Accessibility • Distance from built development 	3	<p>Variable with weather and time of year. Very popular for visitors and this limits the 'remote' character of the features during busy periods.</p> <p>Easily accessible by vehicle to the unit and by foot / boat around the unit.</p>
<p>Shared and recognised values</p> <p>Natural features and landscape are widely known</p>	4	<p>The Domain is a popular holiday and tourist destination. The recreational values are therefore considered to be high with the unit valued highly by the community.</p>

and valued by the immediate and wider community for their contribution to a sense of place leading to a strong community association with, or high public esteem for the place.		
<p>Spiritual, cultural and historical associations</p> <p>Natural features and landscapes can be clearly and widely known and influenced by their connection to the spiritual, cultural and historical valued in the place and includes associative meanings and associative activities valued by the community. These can include both activities and meanings associative meanings are spiritual, cultural or social associations with particular landscape elements, features, or areas, whilst associative activities are patterns of social activity that occur in particular parts of a landscape, for example, popular walking routes or fishing spots.</p>	5	<p>Consultation was initiated during the mapping process, but has not led to any feedback within the required period.</p> <p>The recreational values, and popularity of the unit indicates engenders a high level of social association.</p>

Rank scale between 1 (low) and 5 (high)

Land Types
Coastal cliffs / escarpment
Low escarpment
Bays and headlands
Beach
Dune complex
Reefs and islands
Estuarine / inlet
Open harbour
Coastal plain
Rolling hills
Steep hills; moderate to high relief
Ranges; high relief
Strongly rolling land
Low rolling land
Valley floors and flats
Plains
Volcanic cones
River mouth
Wetland
Watercourses
Lakes and water bodies

Photographs of unit



Kai Iwi Lakes from the north west



Kai Iwi Lakes from the south