

Lake Whakakī

Summary of Values

For Proposed Plan Change 7: Hawke's Bay Regional
Resource Management Plan
(Outstanding Water Bodies Plan Change)



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Lake Whakakā - Summary of Values

**For Proposed Plan Change 7: Hawke's Bay Regional Resource Management Plan
(Outstanding Water Bodies Plan Change)**

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Purpose of Report

1. This report is a compilation of information previously documented on the values associated with Lake Whakakāi during preparation of Proposed Plan Change 7 prior to its notification on 31 August 2019. It is one of a series of similar reports compiled for each of the respective proposed outstanding water bodies (OWB) identified in Plan Change 7.
2. The approach used by Hawke's Bay Regional Council to identify OWB in Hawke's Bay followed a process that began with a high level review documenting the values associated with 130 water bodies across the region. A short explanation is provided at the beginning of each section which discusses the relevant phase and whether Lake Whakakāi was considered during that part of the process.
3. Not all OWB identified in Proposed Plan Change 7 were considered during each phase of the process. For clarity, an index table (Table 1) has been included in this report which sets out the relevant phases, report names, values and page numbers for Lake Whakakāi.
4. No new research or further information was commissioned for the purposes of compiling this report.
5. For further information on the Outstanding Water Body Identification Methodology and each of these phases, see the Plan Change 7 Section 32 Evaluation Report¹.
6. **Table 1: Lake Whakakāi index**

Phase	Included (yes/no)	Report name /date	Page numbers in associated report
High Level Review (Phase 1 & Phase 2)	Yes	Summary of Cultural Values Associated with Water Bodies in Hawke's Bay (March 2018)	22
		Summary of the Recreation, Landscape and Ecology Values Associated with Water Bodies in Hawke's Bay (March 2018)	43
Secondary Assessments (Phase 3)	Yes	Secondary assessment - Lake Whakakāi.	All of report
Local Expert Panel (Phase 4)	Yes	Outstanding Water Bodies in Hawke's Bay - Report of the Expert Panel (April 2019)	58 - 60
Final Evaluation (Phase 5)	Yes	Outstanding Water Bodies Plan Change - selecting a list of outstanding water bodies in Hawke's Bay (May 2019)	19, 26, 33, 35, 40, 42, 50, 51, 59, 62, 93, 101

Plan Change 7 Overview

7. Hawke's Bay Regional Council has prepared an amendment to the Hawke's Bay Regional Resource Management Plan (RRMP) to include a list of the region's outstanding water bodies, together with a framework which prescribes a high level of protection for these water bodies in future plan making. That change to the RRMP is referred to as 'Proposed Plan Change 7' or the 'Outstanding Water Bodies Plan Change.'
8. The water bodies identified in the Outstanding Water Bodies Plan Change have been proposed as the 'best of the best' within the region, featuring an exceptional cultural, spiritual, recreation, natural character, landscape, geology, or ecology value which is remarkable in Hawke's Bay.
9. Since commencing this OWB plan change project in early 2017, a significant amount of work has been undertaken to build a clearer picture of water bodies within the region and their potential for being classed as outstanding.
10. The Outstanding Water Bodies Plan Change amends the RPS to reflect NPSFM provisions which require the protection of the significant values of outstanding water bodies. This special protection does not lessen the importance of, or value associated with other water bodies, which are managed through other parts of the Regional Resource Management Plan or Council work programme.
11. Further information about the background and purpose of proposed Plan Change 7 is online at www.hbrc.govt.nz (search #owb).

¹ <https://www.hbrc.govt.nz/assets/Document-Library/Outstanding-Water-Bodies/1.-Other-supporting-information/Section-32-Evaluation-Report.pdf>

Phase One & Phase Two: High Level Review & Summary of Values

12. In June 2017, the Council embarked on a high level review documenting the cultural, spiritual, recreation, landscape, geological, natural character and ecology values associated with 130 water bodies across the region.
13. Phase 1 involved a thorough review of over ninety documents being completed. Those documents included Deeds of Treaty Settlements, statutory acknowledgements for Treaty settlements, customary uses reports, Waitangi Tribunal reports, and other documents produced in a national and regional context between 1979 and 2018.
14. This work built a clear picture of values associated with a wide range of water bodies across the region and their potential for being classified as outstanding, prior to short listing. This work culminated in a literature review with the following two tables summarising key values associated with 130 of the region's water bodies:
 - Table C1: Cultural Values Table – Summary of Cultural Values Associated with Water Bodies in Hawke's Bay.
 - Table R2: Recreation, landscape, Ecology Values Table – Summary of the Recreation, Landscape and Ecology Values Associated with Water Bodies in Hawke's Bay
15. Table C1 included all water bodies identified by name in reviewed documents, with a high level summary of the associated 'cultural and spiritual values'. This work was sent out to all Treaty settlement entities in Hawke's Bay in December 2017 for input prior to completion.
16. Table R2 included all water bodies identified by name in reviewed documents, with a high level summary of the associated recreation, landscape, geology and ecology values, and ratings assigned in this document.
17. Appendix 1 sets out the relevant extracts from Tables C1 and R2 for Lake Whakakī.

Phase Three: Refine List & Secondary Assessments

18. In 2018, the high level review findings for 130 water bodies, and their associated values, were reported to the Council's Regional Planning Committee (RPC). The RPC selected a list of 22 candidate OWB to proceed forward a more detailed secondary assessment to see if any contained values that were clearly superior to other water bodies in Hawke's Bay.
19. Appendix 2 contains the secondary assessment for Lake Whakakī.

Phase Four: Engagement & Local Expert Panel Process

20. Phase 4 involved wider input from the public, iwi authorities, key stakeholders and territorial local authorities. Feedback from this process featured requests for an additional 20 water bodies to be identified as OWB.
21. In December 2018, Council staff contracted a local expert panel to evaluate, categorise and identify outstanding characteristics, for all value sets, from the list of 22 candidate OWB and the additional 20 water bodies put forward during engagement.
22. The local expert panel was appointed via nominations by key stakeholders, iwi authorities and city and district councils, and comprised six members² with good knowledge of the Hawke's Bay region.
23. The recommendations made by the panel were based on existing information, their local knowledge, and a set of assessment criteria they developed at their first meeting. The assessment criteria used by the panel to identify outstanding features is set out at the beginning of each subsection for each value set.
24. The expert panel found Lake Whakakī to have outstanding ecology, landscape and cultural and spiritual values. Their findings are set out in Appendix 3.

² Morry Black (Mauri Protection Agency), Matt Brady (DOC), John Cheyne (Te Taiao Environment), Andrew Curtis (Water Strategies Limited), Bernie Kelly (kayaking rep), Tom Winlove (Fish & Game Hawke's Bay)

Phase Five: Final Evaluation

25. Phase Five saw a final evaluation carried out to assist the Council's Regional Planning Committee to select a list of outstanding water bodies in Hawke's Bay, for inclusion in Proposed Plan Change 7.
26. This work summarised the key values of 42 water bodies nominated during Phases 3 and 4, and informed by
 - The secondary assessments
 - local expert panel findings
 - the values summary reports, and
 - stakeholder engagement.
27. The summary was presented by value-type, based on the work to date and in a format consistent with the direction given by Council.
28. Appendix 4 sets out the relevant extracts from the final evaluation for Lake Whakakī.

Appendix 1: Tables C1 and R2 - Lake Whakakī

Note: Appendix 1 contains extracts only - for further information please refer to the full reports.



Summary of cultural values associated with water bodies in Hawke's Bay

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Summary of cultural values associated with water bodies in Hawke's Bay

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Prepared By:
Belinda Harper, Senior Planner

Referencing

When referencing in another report any of the values contained in this document, the author of that report must include the following text as a footnote to the referenced material:

"There are numerous water bodies in the Hawke's Bay region where two or more iwi groups have agreed, shared interests and/or contested overlapping claims. By referring to these values it is not intended to imply any exclusive rights over a particular water body for one or more iwi group, nor does it confirm the validity of the claims of any group(s) over that water body. This information is being referred to solely for the purpose of identifying the important cultural and spiritual values identified by iwi groups in the region".

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Waterbody / Region / Catchment	Treaty settlement entity	Commentary		Key values
		<p><u>Key</u> DOS = Deed of settlements, SA = statutory acknowledgements, TSL = Treaty settlement legislation, CUR = customary usage reports, WTR = Waitangi tribunal reports, OTHER = any other relevant documents</p> <p>No = waterbody not referred in document N/A = No such document exists.</p> <p>NOTE 1: The 'Key Values' column sets out a pool of eight key values, identified by the tāngata whenua representatives on the Council's Regional Planning Committee, which broadly reflect the most significant cultural values associated with water bodies. The relevant key values for each water body is listed in this column.</p> <p>See commentary column for further explanation about the identified key value for each waterbody.</p> <p>NOTE 2: The HBRC is aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the HBRC region. The information presented in The Table is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group over that waterbody. The information is solely for the purpose of recording important cultural</p>		<p>Note: key values as follows:</p> <p>Wāhi Tapu, Wāhi taonga Wai Tapu Acknowledged in korero tuku iho, pepeha, whakatauki, waiata Mahinga kai, Pa tuna Pa, kāinga Tauranga waka Rohe Boundary Battle site</p>
Lake Whakakī Hawke's Bay Wairoa	Te Rohe o Te Wairoa	DOS	<p>Lake Whakakī is surrounded by other smaller lakes and lagoons on the narrow coastal plain between the Wairoa and Nuhaka Rivers, This area was traditionally home to a rich variety of kai moana, including tuna and shellfish. Many birds harvested for food also made their home there. The Whakakī wetlands were an important mahinga kai for local Maori.</p> <p>Awa Wahi is the place where the Whakaki Lake was opened to delay pursuing enemies and allow the tangata whenua to escape to Moumoukai.</p>	Mahinga kai, Pa tuna
		SA	Yes – same as DOS	
		TSL	N/A	
		CUS		
		WTR		
		OTHER	<p>Summary of cultural values associated with water bodies in Hawke's Bay, Wairoa District – Whakaki Catchment (2018)</p> <p>Te Whakaki Lagoon is of spiritual and cultural significance to Ngati Kahukura, Ngati Kirituna and hapu of Te Whakaki Nui-a-Rua. The natural environmental features of Whakaki Lagoon and its surrounds are unique and are found nowhere else in the catchment.</p> <p>Whakaki Lagoon is situated between Wairoa and Nuhaka and in the past was part of an extensive coastal wetland. Until the early 1900's exit of the lagoon waters to the sea occurred only when floodwaters naturally overtopped the sandbar, or Ahikaa and tangata whenua opened the bar manually to facilitate subsidence of floodwaters</p> <p>The Whakaki Lagoon is an outstanding habitat for wetland birds, including several rare and iconic species; eels, bullies, inanga and other native fish; beds of native aquatic macrophytic plants; fringes of primarily native vegetation, including saltmarsh ribbon wood, rushes, sedges and wetland turfs. The Beach and dune system involves such species as mat daisy (Raoulia aff. hookeri) cushion fields; spinifex; native invertebrates and lizards.</p>	

Summary of recreation, landscape and ecology values associated with water bodies in Hawke's Bay

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Summary of recreation, landscape and ecology values associated with water bodies in Hawke's Bay

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Waterbody / Region / Catchment	Treaty settlement entity group(s) with linkages back to waterbody	Commentary		Key values
		<p>Key 64NZR = 64 New Zealand Rivers – A Scenic Evaluation RRS = New Zealand Recreational River Survey MAF & F = Submission on the Draft Inventory of Wild and Scenic Rivers of National Importance by MAFF W&SR = National Inventory of Wild and Scenic Rivers RiVAS = River Values Assessment System LOR & L = A List of Rivers and Lakes Deserving Inclusion in a Schedule of Protected Waters HTF = Headwater Trout Fisheries in New Zealand WONI = Potential Waterbodies of National Importance RAMSAR = Wetlands in NZ which meet the Ramsar criteria W&WH = Wildlife and Wildlife Habitat of Hawke's Bay Rivers</p>		
Lake Whakakī Hawke's Bay Wairoa	Te Rohe o Te Wairoa	64NZR	N/A	Ecology (wildlife)
		RRS	N/A	
		MAF&F	N/A	
		W&SR	N/A	
		LOR&L	Group One: its wildlife makes it an outstanding lake - An outstanding wildlife habitat with a wide variety of wading and swap birds - Duck shooting in seasons Important source of food for local Māori people.	
		HTF	No	
		WONI	No	
		RAMSAR	No	
		W&WH	N/A	
		RiVAS	N/A	
OTHER	<p>Areas of Significant Conservation Values: HB Coastal Marine Area (Draft), 2006 (areas are identified in RCEP as 'SCA')</p> <p>Lake Whakaki is an intermittently closed and open lake (ICOLL) which is a rare habitat type both in New Zealand and internationally.</p> <p>Lake Whakaki covers an area of over 600 hectares, and is the largest coastal lake of the North Island's east coast. It comprises the last major component of a wetland landscape that ran for 32 km between the Wairoa and Nuhaka river mouths.</p> <p>The Whakaki Lagoon is highly rated in the 'wetlands of ecological and representative importance', and the 'sites of special wildlife interest' databases held by the Department of Conservation. It is a large rush-sedge bordered wetland with mostly open water which supports a large population of wading and waterfowl bird, and threatened species such as the white heron, Australasian bittern and fernbird, New Zealand dabchick, and spotless crane. Migratory species include Wrybill, golden plover, eastern bar tailed godwit, and several sandpiper species.</p>			

			<p>Waterfowl include grey teal, New Zealand shoveler, and Canada geese.</p> <p>The Whakaki Beach dune plant communities were rated as priority 2 by Partridge (1992). The priority 2 classification rating was based on the relatively unmodified nature of the dune system, the absence of marram and the presence of a relatively diverse native flora. The latter includes species such as coastal scabweed, and the native sand binders spinifex, and pingao.</p> <p>This site is part of the larger the Wairoa Estuary complex which includes the Ngamotu, Whakamahi, Wairau, Ohuia, Te Para and Whakaki lagoons. Collectively these wetlands constitute the largest such system on the east coast of the North Island.</p>	
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Outstanding Water Bodies Plan Change

Candidate List of Outstanding Water Bodies in Hawke's Bay – Secondary Assessments for:

Heretaunga Aquifer, Karamu Stream, Lake Whakakī, Lake Whatumā, Lake Waikaremoana, Lake Tūtira (including Aropaoanui River + Papakiri Stream), Lake Waikareiti, Lower Ngaruroro River (below Whanawhana), Mangahauanga Stream, Makirikiri River, Porangahau River, Ruakituri River, Ruataniwha Aquifer, Taruarau River, Te Whanganui a Orotū (Ahuriri Estuary), Tukituki River, Tutaekuri River, Upper Mohaka River, Upper Ngaruroro River (above Whanawhana), Waipawa River, Waipunga River, Wairoa River.

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Outstanding Water Bodies Plan Change

Candidate List of Outstanding Water Bodies in Hawke's Bay – Secondary Assessments for:

Heretaunga Aquifer, Karamu River, Lake Whakakā , Lake Whatumā, Lake Waikaremoana, Lake Tūtira (including Aropaoanui River + Papakiri Stream), Lake Waikareiti, Lower Ngaruroro River (below Whanawhana), Mangahauanga Stream, Makirikiri River, Porangahau River, Ruakituri River, Ruataniwha Aquifer, Taruarau River , Te Whanganui a Orotū (Ahuriri Estuary), Tukituki River, Tutaekuri River, Upper Mohaka River, Upper Ngaruroro River (above Whanawhana), Waipawa River, Waipunga River, Wairoa River.

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Whakakī Lake



Key Values

Cultural

Ecology (wildlife, dune vegetation)

Landscape

Table 1: List of documents reviewed

Year	Name	Author
1986	A List of Rivers and Lakes Deserving Inclusion in A Schedule of Protected Waters	Grindell & Guest
1999	Whakakī Wetland Complex – Management Requirements to Protect and Enhance 1999- 2004	Hawke’s Bay Regional Council
2001	World Wetland Day 2001: New Zealand	Ramsar.org
2002	Lake Whakakī Management Plan	Boffa Miskell for Pt. Hereheretau B2L2 Trust
2006	Areas of Significant Conservation Values: HB Coastal Marine Area (HBRC Report Number 4203 - Draft)	Hawke’s Bay Regional Council
2006	A Review and Risk Assessment of Toxic Cyanobacteria in the Hawke’s Bay	Cawthron Institute
2007	Whakakī Lagoon Ecological Monitoring	Hawke’s Bay Regional Council
2008	To Roto O Te Whakaki – Nga Matauranga me Nga Tikanga Ecosystem Research Project	Murray Palmer
2008	Wetlands ecosystems of national importance for biodiversity: criteria, methods and candidate list of nationally important wetlands.	Landcare Research
2008	Wetland Monitoring Review	Hawke’s Bay Regional Council
2011	The Whakakī Wetlands Restoration and Enhancement Project	Wairarapa Museum of Art and History
2013	Project 1116 – 2013 Trend Counts: Paradise Shelduck and Black Swan Counts for Hawke’s Bay	Fish and Game New Zealand

2014	Attributes for Intermittently Open and Closed Lakes and Lagoons (ICOLs) applicable to the National Objectives Framework for Fresh Water	Ministry for the Environment
2015	Collaborative Decision Support Framework for managing Whakakī Lake. Phase 1: Ecological Information	HBRC, Whakakī Lake Trust, DOC
2016	New Zealand Geo-preservation Inventory	Geological Society of New Zealand
2016	The IUCN Red List of Threatened Species	Global Species Programme, various scientists and partners worldwide
2016	Iwi and Hapū of Te Rohe o Te Wairoa Deed of Settlement + Documents Schedule	Iwi and Hapū of Te Rohe o Te Wairoa and the Crown
2017	Assessment of Lakes in the Hawke's Bay Region using LakeSPI	NIWA
2017	Whakakī Lake and Wairoa River	Hawke's Bay Regional Council
2017	Whakakī Lake residents invited to have a say	New Zealand Herald
2018	Summary of Cultural Values associated with Water Bodies in Hawke's Bay, Wairoa District – Whakakī Catchment (2018)	Ngāti Kirituna Hapū – Ki Whakakī Nui-a-Rua, Allen Smith, Christine Smith
2018	Government funding for Hawke's Bay forest at Whakakī Lake	New Zealand Herald
2018	Department of Conservation Website	Department of Conservation
2018	Water Quality in Whakakī Lake	Hawke's Bay Regional Council

Discussion

Purpose of report

1. The purpose of this report is to assist the RPC members to determine whether any of the values of Whakakī Lake are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).
2. This report presents the summarised findings of the values attributed to the Whakakī Lake in those documents referred to in Table 1, above.

Overview

3. Whakakī Lake is a 400 hectare coastal lake which is separated from the sea by a narrow strip of sand dunes on its southern shore. The lake has significant wildlife values and is the largest coastal lake on the North Island's east coast. The lake has an additional 200 hectares of adjacent wetland margin comprising sand dunes and swamp areas.
4. Whakakī Lake is an intermittently closed and open lake (ICOLL) which is a rare habitat type both in New Zealand and internationally. The wetland complex supports 46 species of waterbirds, including the New Zealand Dabchick, an uncommon endemic, and the globally endangered Australasian Bittern. Both shortfin and longfin eel are found in the Lake. During the months of May and June the area is highly valued for duck hunting/shooting.
5. Historically, Whakakī Lake was part of a much larger 6,000 hectare continuous wetland area that ran for 32 km between the Wairoa and Nuhaka River mouths. However, due to significant historical modifications through burning, clearance and drainage only 10% of the original wetland area remains. The remaining wetland area is in a degraded state and frequent algae blooms occur on the lakes surface.
6. Whakakī Lake is listed as a priority wetland in the Hawke's Bay Regional Resource Management Plan, and is identified as a 'significant lake' in the Wairoa District Plan. In 2001, the Environment Minister presented the Whakakī Lake Trustees with the New Zealand Wetland Award for their important contribution towards protecting and restoring our environment.
7. Whakakī Lake has been identified as one of the six environmental hotspots by Hawke's Bay Regional Council, and funding has been allocated towards improving the area. Recently the Government announced \$100,000 funding to assist with planting in the area as part of the Tuawhenua Provincial Growth Fund.

- In total, \$580,000 is planned to be invested to establish a mānuka plantation over the next five years on 80 hectares of retired land next to the Lake. The plantation will comprise 88,880 mānuka trees at Whakakī Lake to support a re-circulating wetland to filter water. This project is in its initial stages and funding is expected to be granted late 2018.

Location

- Whakakī Lake is situated in northern Hawke's Bay around 10 km Wairoa township, adjacent to State Highway 2. The lake is part of a much larger wetland complex which includes the Ngamotu lagoon, Ohuia Lagoon, Waihoratuna Lagoon, Wairau Lagoon, Te Paeroa Lagoon, Rahui Channel, and Patangata Lagoon.
- Figure 1 shows the location and extent of Whakakī Lake and the other lagoons which are part of the larger wetland complex. Ngamotu lagoon is not identified by name on the location map, but is located to the east of the Wairoa River mouth.

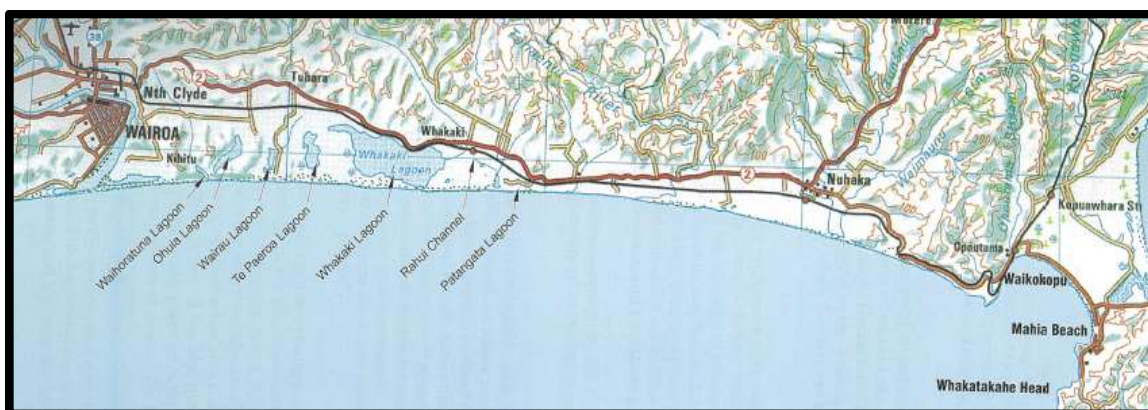


Figure 1: location of Lake Whakakī

Cultural values *

- Te Whakakī Lagoon is significant to the iwi and hapū of Te Rohe o Te Wairoa. Ngāti Kahukura, Ngāti Kirituna and hapū of Te Whakaki Nui-a-Rua have cultural associations with the lake.
- The area was important mahinga kai for local Māori and had a rich variety of food, including tuna and shellfish. Many birds harvested for food at the lake and also made their home there.
- The importance of Lake Whakakī to tāngata whenua continues today. There is a high abundance of short-finned eel, which has been linked to the customary harvesting practices of tāngata whenua.
- The Whakakī Lake Trust has a long history of being an active kaitiaki (guardian) of Whakakī Lake and its natural resources, particularly tuna. The Whakakī Lake Trust was established in 1969 to manage Whakakī Lake property on behalf of the Māori owners.
- Attachment 1 contains a more detailed explanation of the cultural values associated with Whakakī Lake.

Recreation values

- Whakakī Lake is highly valued for its gamebird hunting with no other recreational activities occurring in or around the lake area.

Gamebird hunting

- The greater Whakakī wetland complex is a renowned area for its gamebird population with swans, ducks, geese and Pukeko seasonally hunted in the wetland area. It is the most important area for waterfowl hunting in the East Coast/Hawke's Bay area with around 1,000 game birds harvested annually.
- In the 1950s, Black Swan numbers were around five to ten thousand. Currently, the population is estimated to be around seven hundred in the greater wetland complex area.

* The HBRC and authors of this report are aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this report is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that waterbody. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from existing published documents.

19. The southern peninsula between Whakakā Lake and the Pacific Ocean is administered by the Whakakā Lake Trust (The Trust) and used for duck shooting. Shooting huts are scattered along the peninsula and within the riparian habitat along the edge of the lake. Public access to the lake is limited and hunters need to get permits directly from The Trust.

Ecology values

20. Whakakā Lake is the second largest coastal lake on the North Island's east coast. It has a total wetland area of 600 hectares and was once part of a much larger 6,000 hectare continuous wetland area that ran for 32 km between the Wairoa and Nuhaka River mouths. Despite being in a severely degraded state, it supports a large population of waterbirds and represents a large proportion of the remaining wetland habitat in Hawkes Bay.
21. Whakakā Lake is an intermittently closed and open lake (ICOLL) which is a rare habitat type both in New Zealand and internationally. The Lake is bordered by rushes, sedges and sand dunes and has a distinctive ecosystem due to the large variations in water temperature and salinity. It is one of eight notable ICOLL's on the east coast of New Zealand.
22. In the 1950s, the water level of Whakakā Lake was lowered by opening an artificial outlet channel directly through the dune system into the sea. This allowed salt water to enter the lagoon, which was previously a freshwater system, killing freshwater plants and animals and creating damaging algal blooms. It also disrupted the traditional migration paths of eels and inanga. The artificial outlet channel is now permanently closed, however from time to time the lake is still artificially opened using the traditional outlet to relieve flooding.
23. Despite significant modifications, the area is highly rated in the 'wetlands of ecological and representative importance' and the 'sites of special wildlife interest' databases held by the Department of Conservation.
24. Whakakā Lake is part of a much larger wetland complex which includes the Ngamotu, Ohuia, Waihoratuna, Wairau, Te Paeroa and Patangata Lagoons. Collectively these wetlands constitute the largest such system on the east coast of the North Island.
25. In 2006, the Whakakā Lake was included on a candidate list of nationally important wetlands by Landcare Research who were undertaking work on behalf of the Department of Conservation.

Fish

26. Seven species of fish (six native) have been recorded in the lake. The most numerous species is the shortfin eel, followed by the common bully, goldfish, longfin eel, flounder, grey mullet and inanga. The lake supports a healthy population of shortfin eel.

Wildlife

27. The greater Whakakā wetland complex is recognised as an important wildlife habitat due to the presence of significant populations of threatened waterbirds and its large waterfowl population. The area is highly ranked as a Site of Special Wildlife Interest (SSWI).
28. Forty six species of waterbirds have been recorded in this area including several rare and iconic species. The lake supports a large population of native waterbirds, including the native Australasian bittern, which is globally endangered, the New Zealand dabchick (grebe), an uncommon endemic which is near threatened globally, and the endemic Wrybill.
29. Migratory species previously recorded in the area include the white heron, golden plover, eastern bar tailed godwit, and several sandpiper species. Waterfowl include grey teal ducks, shoveler ducks, Canada goose and the black swan. The wetland also supports three native wetland birds being the Spotless Crake, Fernbird and Banded Rail who are common nationally, but very rare in Hawke's Bay.
30. Black swan and paradise shelduck counts have been carried out by Fish and Game since the early 1990s. Results show that both Shelduck and Black Swan numbers have significantly reduced at Whakakā Lake in the last 20 years. In the 1990s around 2000 black swans were counted on the lake, compared with 23 black swans counted on the lake in 2012. Similarly, in 2003 over 1200 shelducks were counted on the lake compared to 71 shelducks recorded in 2012.

31. Eighteen other species of land birds have been recorded at the lagoon in the past, including the Pipit, Riroriro, Fantail and Silvereye who are common natives, whilst the remainder are common introduced species in Hawke's Bay.
32. In 1986, the Department of Conservation rated Whakakī lagoon as a nationally significant wildlife habitat in the Wetlands of Ecological and Regional Importance (WERI) database.
33. In 1986, Whakakī Lake was placed in 'Group one'¹ in the Government's list of rivers and lakes deserving protection, for its outstanding wildlife habitat and it's in season duck shooting.

Reptiles and amphibians

34. Common skinks have been seen among dune vegetation, and frogs have been previously heard, but not sighted, on the south-western shore of the lagoon. The frogs are thought to be the southern bell frog, native to Australia and reasonably widespread in New Zealand.
35. Frogs have rapidly declined recently in New Zealand through fungal disease. As such, the presence of frogs in this wetland is viewed as positive, particularly given they do not significantly impact on the natural ecology of the area.

Dune vegetation

36. The dune plant communities surrounding Whakakī Lake are regarded as regionally significant. This is based on the relatively unmodified nature of the dune system, the absence of marram and the presence of a relatively diverse native flora, including species such as coastal scabweed, and the native sand binders spinifex and pingao. To date, no rare native plants have been recorded at Whakakī Lake.
37. The colony of mat daisy (*Raoulia* aff. *hookeri*) is the most note-worthy plant species present in the dune system, forming large cushion fields between the lagoon and the sea and in the sand hollows behind the beach. The mat daisy is a large thriving population at the northern end of the geographical range of this species and is classified as nationally threatened.

Aquatic plants

38. Historically, Whakakī Lake has contained significant beds of native aquatic macrophytic plants and fringes of primarily native vegetation, including saltmarsh ribbonwood, rushes, sedges and wetland turfs. Currently there are no submerged plants.
39. The exclusion of stock from the majority of the wetland edges will allow the turf communities to re-establish and the restoration efforts through native planting and pest control will enable the wetland to be restored to a more natural state in the future.
40. In 2017, NIWA assessed the condition of eleven lakes within the Hawke's Bay Region using the LakeSPI method. The LakeSPI (Lakes Submerged Plant Indicators) is based on a principle that the ecological condition of a particular lake in New Zealand can be characterised by the composition of submerged aquatic plants in them.
41. The LakeSPI monitoring results show that Whakakī Lake is in a degraded state with no submerged plants. Historical sampling shows a decline in submerged vegetation in the lagoon over the last 24 years, with submerged vegetation halving from 88% in 1992 to 35% in 2007, with no submerged plants recorded in 2016.

Invertebrates

42. Aquatic macroinvertebrates occupy a key place in aquatic ecosystem functioning and provide a useful measure of water quality and habitat condition.
43. In 2007, monitoring results indicated Whakakī Lake could support a considerable diversity of small animal life however, the water quality is compromised by the input of sediment and artificial nutrients. Sampling results show the lake sediments consist of firm sand and mud with some fibrous/woody organic matter on top near the lake margin.

¹ Group One = Excellent rivers or lakes containing an outstanding cultural, fisheries, wild flora, location, recreation, scenic, scientific, tourism, wildlife habitat, value(s). Group One contains the very best examples of these values.

44. No freshwater mussels were observed during the 2017 aquatic plant survey undertaken by NIWA at Whakakī Lake.

Dune Invertebrates

45. The small native fauna of the dune/bar system is distinctive and ecologically unique to Whakakī Lagoon. This fauna includes lizards (skinks and geckos) and invertebrates such as sand scarab, giant earwig and katipo, mostly associated with the spinifex, mat daisy and extensive strand zone of storm-tossed driftwood.

46. Sampling to date suggests that populations of these native animals are currently small and at risk.

Other Wetland areas – Ngamotu, Ohuia, Waihoratuna, Wairau, Te Paeroa, Patangata Lagoons

47. Whakakī Lake is part of a much larger wetland complex which includes the Ngamotu lagoon, Ohuia Lagoon, Waihoratuna Lagoon, Wairau Lagoon, Te Paeroa Lagoon, Rahui Channel, and Patangata Lagoon. These wetlands are briefly described in Table 2 below:

Table 2: Wetlands in the greater Whakakī wetland complex

Name	Description
Ngamotu Lagoon	The Ngamotu Lagoon is a Government Purpose Administration Reserve and gazetted Wildlife Management Reserve. It is a saline lagoon with saltmarsh communities. Waterfowl and waders are present. It has high botanical values and contains some of the few representative examples of estuarine vegetation found within the Waihua Ecological District, including populations of two species, <i>Mimulus repens</i> and <i>Spergularia media</i> , that are of botanical interest The Lagoon has a Moderate/High 'sites of special wildlife interest' rating on the DOC database.
Ohuia & Waihoratuna Lagoons	The Ohuia & Waihoratuna Lagoons share an outlet to the sea and are locally known as Ohuia Lake, or Big and Little Ohuia. The Ohuia Lagoon previously drained to the north and east into Lake Whakakī, however the water now passes through an artificial structure to the southern end of the Waihoratuna lagoon and out to sea. The purpose of Ohuia Lagoon is to store water drained from surrounding farmland under the Ohuia Drainage Scheme. The margins of the lagoon are grazed and predominantly grass. The Waihoratuna Lagoon is the western most of the two lagoons and the outlet of the Waiatai Stream. The Waiatai Stream originally flowed directly into Lake Whakakī. The margins of the lagoon have a good variety of native wetland plants. Waihoratuna Lagoon is approximately 10 ha in size, increasing up to 30 ha or more after heavy rain. The Lagoon has significant siltation due to farming upstream and erosion of the hills in Waiatai Valley.
Wairau Lagoon	The Wairau Lagoon is approximately 35 hectares in size. The Lagoon has a 'moderate' rating on the DOC database for 'sites of special wildlife interest'. The area is protected by an Open Space Covenant under the Queen Elizabeth II Trust. The lagoon is fully fenced and used by a wide variety of birds, particularly waterfowl.
Te Paeroa Lagoon (Korito)	Te Paeroa Lagoon is a shallow basin with a limited catchment area covering approximately 105 ha, including the swamp margin. The lagoon with used by a variety of water fowl species, however is of limited value for breeding due to the lack of marginal vegetation. Te Paeroa Lagoon has a Moderate/High 'sites of special wildlife interest' rating in the DOC database. In 1997/98 the swamp completely dried up depleting most of the native vegetation.
Rahui Channel	In 1997 enhancement works undertaken at Lake Whakakī included the re-opening of the Rahui Channel. The area seaward end of the Rahui Channel is a low lying swamp land and important for waterfowl and eel harvesting. The Rahui Channel is subject to regular drain clearance.
Patangata Lagoon	Patangata Lagoon is a low shallow water filled depression covering approximately 10 ha. At times of low water, the lagoon is separated from the Rahui channel at the western end. The lagoon is the remnant waterbody of the original channel carrying Lake Whakakī to its historical outlet at the Opoho Stream. The area is extremely valuable for wildlife as a loafing, feeding and breeding area. A mixture of exotic and native plant species are present and a good range of aquatic plants are found near the margins.

Landscape / scenic values

48. Lake Whakakī is a shallow wetland system with a total area of around 600 hectares of combined lake, sand dune and swamp areas. The wetland system is separated from the sea by thin sand dunes on the southern shore, with State Highway 2 and the Napier-Gisborne railway line bordering it to the north.
49. Whakakī Lake is part of a bigger wetland complex which includes the Ngamotu, Ohuia, Waihoratuna, Wairau, Te Paeroa, and Patangata lagoons. Collectively these wetlands are considered to be the best representative example of this coastal landscape type in the Hawke's Bay.
50. Photographs of Whakakī Lake are contained in Attachment 2.

Geological features

51. Whakakī Lake is a coastal lagoon which was created by the formation of a shingle bar which over time grew eastward and more impervious to water seepage, eventually cutting off the lagoon's inlet from the sea. This process, combined with its extended outlet, resulted in the Whakakī Lagoon becoming a freshwater lake with saline sea water no longer able to enter through the lagoons inlet.
52. Whakakī Lake is unique in that the natural drainage and seaward opening has been moved eastwards along the beach by longshore drift. This is different from most other coastal lagoons in New Zealand.
53. The National Geo-preservation Inventory, which identifies and ranks geological features according to their relative significance, classifies the Whakakī Lagoons as regionally significant, specifically recognising that these five well-defined coastal lagoons are the best in Hawke's Bay.

Naturalness/intactness of waterbody

54. Whakakī Lake is the last significant wetland of a much larger 6,000 hectare wetland landscape. The lake has undergone significant historical modifications through burning, clearance and drainage and only 10% of the original wetland remains.
55. During the 1950s an artificial outlet channel was installed through the dune system emptying almost the entire lake volume, transforming the lake ecology. The artificial outlet channel is no longer used.

Water Quality

56. The amount of sediment coming into Whakakī Lake after rain events can be significant. This brings unwanted nutrients and sediments into the lake impacting on its water quality.
57. In 2016, blue green algae dominated the lake, which is potentially toxic to animals and is detrimental to the lake's ecosystem. In March 2018 the abundance of cyanobacteria in the lake was 50 times higher than the limit considered safe for contact recreation.
58. Hawke's Bay Regional Council regularly carries out water sampling at three locations around Whakakī Lake. Currently, none of the sites meet the guideline values for faecal coliforms and recreational use.
59. In 2017, NIWA assessed the condition of Whakakī Lake. Sampling results showed that the water quality of Whakakī Lake has deteriorated to the point where growth of submerged plants can no longer be supported. Whakakī Lake's ecological state is among the worst of all monitored lakes in New Zealand.

Values Summary

Overarching Value	Sub-value	Description	Outstanding Yes/no	Comments
Cultural	TBC	TBC	TBC	TBC
Recreational	TBC	TBC	TBC	TBC
Ecological	TBC	TBC	TBC	TBC
Landscape	TBC	TBC	TBC	TBC
Natural Character	TBC	TBC	TBC	TBC

Attachment 1

Whakakā Lake – Cultural Values Report



Key Cultural Values

Mahinga kai, Pā tuna

Pā, Kāinga

Table 1: List of documents reviewed

Year	Name	Author
1998	THE LAND AND THE BLACKBERRY: Aspects of the History of the Hereheretau and Kahaatureia Blocks with special reference to Hereheretau Station and the Maori Soldiers' Fund	Katherine Orr-Nimmo
2008	Te Roto o te Whakakā: Nga Matauranga me Nga Tikanga Ecosystem Research Project	The Whakakā Lake Trust and Nga Mahi te Taio Consultants
2011	Kōtuitui: New Zealand Journal of Social Sciences Online - The dynamics of hapū research relationships	Margaret Forster
2016	Iwi and hapū of Te Rohe o Te Wairoa Deed of settlement + documents schedule	Iwi and Hapū of Te Rohe o Te Wairoa and the Crown.
2017	Whakakā Info Sheet	Hawke's Bay Regional Council
2017	Press Release: Whakakā Lake opening and weir plan	Hawke's Bay Regional Council

1. Introduction *

Purpose

The purpose of this report is to assist the RPC members to determine whether any of the cultural values associated with the Whakakā Lake are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).

This report presents the summarised findings of the cultural values attributed to Whakakā Lake in those documents referred to in Table 1, above.

The report summarises the cultural values associated with Whakakā Lake into a series of categories. It is recognised that isolating the values into categories can be problematic from a Māori worldview and many of the values are part of a narrative that doesn't fit neatly into categories. However, the intention is not to take a reductionist or isolated approach to cultural values but to try and gain an appreciation of their significance and the level of detail available to progress a plan change. In preparing the reports, it became obvious that all water bodies are part of a wider cultural landscape that weaves people and the environment into a rich history of cultural and spiritual association.

Ultimately, the Regional Planning Committee will need to decide what the appropriate threshold is for outstanding cultural values. Any objectives, policies or rules that are proposed to support outstanding waterbodies will be subject to scrutiny and potential challenges by those who may be affected by a plan change.

Importance

Te Whakakā Lagoon is of spiritual and cultural significance to Ngāti Kahukura, Ngāti Kirituna and hapū of Te Whakakā Nui-a-Rua.

Successive generations were dependent on the lake and associated natural resources for survival. Over time the lake became a central feature of local hapū identity, highly valued, respected and admired. When the various blocks were before the Native Land Court, local Māori described the land in an enormous wealth of detail. They mentioned numerous features, from eel weirs to karaka trees to clearings.

Whakakā Lake Trust

The Whakakā Lake Trust has a long history of being an active kaitiaki (guardian) of Whakakā Lake and its natural resources, particularly tuna. The Whakakā Lake Trust was established in 1969 to manage Whakakā Lake property on behalf of the Māori owners.

The bed of the Whakakā Lake and some of the immediately adjacent lands are Māori owned. A substantial part of the bed, and lake property from the eastern end towards the west is part of the Hereheretau B2L2 block and managed by the Whakakā Lake Trust. Lands at the western end of the Lake, including the lake bed are managed by the Whakakā 2N Incorporation (Iwitea). The lake property is 577 hectares. Approximately 117 hectares are sand dunes and swamp areas with the remainder made up of the lake.

However, a decline in water quality for Whakakā Lake over recent decades has diminished mahinga kai and other cultural values. One of the main issues in 2016 was the dominance of blue green algae, which are potentially toxic and can taint fish and macroinvertebrates.

In 1996, the Whakakā Lake Trust began an ambitious and extensive hapū-based wetland restoration and enhancement programme that still continues today. Whakakā Lake Trustees are working to restore the lake by collecting information on water quality and providing insights into what needs to be done to maintain water quality and cultural values. They have planted some of the lake surrounds which is an ongoing process because of the harsh coastal conditions.

The management of the lake level has also caused concern for tāngata whenua. Lake Whakakā has been manually opened by regional authorities to relieve flooding on surrounding farmland for over 50 years. Up until the early 1900's, exit of the lagoon waters to the sea occurred only when floodwaters naturally overtopped the sandbar or tāngata whenua opened the bar manually to remove floodwaters. In 2017, HBRC and Whakakā Lake Trust met to discuss a permanent solution with the Regional Council committing to advance a plan for a permanent weir to manage the lake level.

2. Mahinga kai

The area was important mahinga kai for local Māori and had a rich variety of food, including tuna and shellfish. Many birds harvested for food also made their home there.

* The HBRC and authors of this report are aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this report is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that waterbody. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from existing published documents.

The importance of Lake Whakakī to tāngata whenua continues today. In a 2008 ecological report for Whakakī Lake Trust, a high abundance of short-finned eel were noted. This abundance was linked to the customary harvesting practices of tāngata whenua:

This level of abundance, and the high ratio of female to male fish present, we believe to also be a direct outcome of the traditional harvest practices of Tāngata Whenua, their management of the fishery under a Māori Customary regime, and their ongoing restoration initiatives in terms of the Lake hydrology and its margins.

3. Conflict

Awa Wahi is the place where the Whakakī Lake was opened to delay pursuing enemies and allow the tāngata whenua to escape to Moumoukai.

4. Archaeology

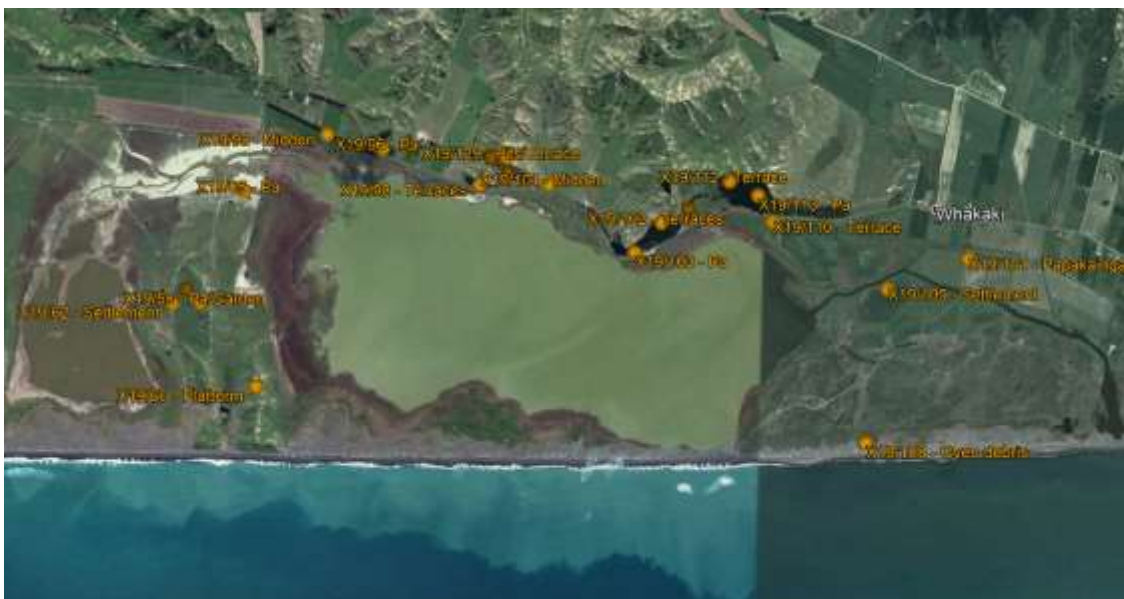


Figure 1: Archaeological Sites

5. Resource Management Plans

The following tables list any relevant resource management plans developed by iwi/hapū, the regional council or territorial authorities. The tables include any specific provisions that apply to Lake Whakakī. They do not include all of the general policies or rules that may apply. Water quality and water quantity provisions have been included as it is recognised that these aspects can significantly impact on cultural values.

Regional Resource Management Plan
Known Productive Aquifer Systems immediately east of Whakakī – confined and unconfined (Schedule 4)
Catchments Sensitive to Animal Effluent Discharges (Schedule 6b)
Regional Coastal Environment Plan
Within Coastal Environment Inland Boundary
Vegetation Clearance Management Area
Lake and surrounds part of Sensitive Catchment (Schedule Q)
Known Productive Aquifer Systems immediately east of Whakakī – confined and unconfined (Schedule O)
Wairoa District Plan
Significant Lakes and Rivers (Schedule 5)

Attachment 2: Photographs - Whakakā Lake

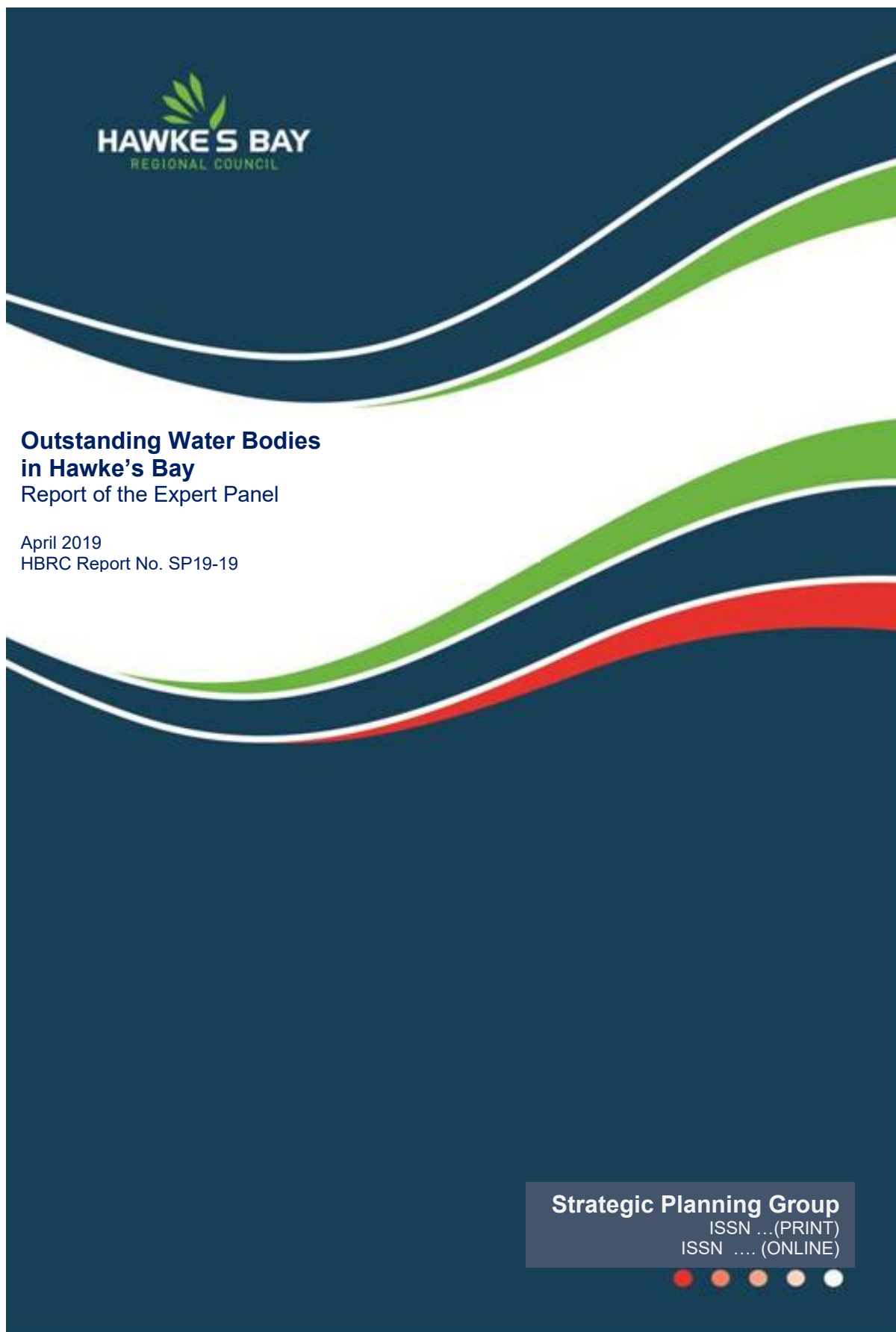




Appendix 3: Expert Panel Findings - Lake Whakakī

Note: Appendix 3 contains extracts only - for further information please refer to the full report of the expert panel.

Outstanding Water Bodies in Hawke's Bay: Report of the Expert Panel





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Outstanding Water Bodies in Hawke's Bay Report of the Expert Panel

April 2019
HBRC Report No. SP19-19



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Outcome 2: OWB Assessment Criteria

The Panel considered the criteria for what makes the selected values regionally ‘Outstanding’. The Gisborne District Council OWB criteria provided a useful framework but needed both simplification and some additional criteria.

Both quantitative and qualitative (descriptive) measures were selected and are set out below in Table 4. ‘Outstanding’ values could also be variable, for example, customary values can be dependent on the season or time of year.

TABLE 4: CRITERIA FOR ASSESSING ‘OUTSTANDING’ VALUES

‘OUTSTANDING’ VALUE	CRITERIA	INDICATOR
Ecology	Threatened Species	4 or more threatened species
	% of Population	<ul style="list-style-type: none"> • >2% of a national population of a native species • >15% of a regional population of a native species
	Ecological Distinctiveness	Presence of a unique or distinctive characteristic/ habitat or species at the regional level
	Ecological Function	Presence of a critical or outstanding: <ul style="list-style-type: none"> • Breeding site • Ecosystem component • Assemblage • Kohanga ika/ nursery • Fish passage/ fish spawning
Landscape	A water body that contains a unique hydrological, geological or culturally significant feature A water body that is widely recognised at the regional level for its scenic values	
Natural Character	A water body that is highly natural with little or no human modification, including to the flow, bed and riparian margins, water quality, flora and fauna, within a largely indigenous landscape	
Amenity/ Recreation	A recreational experience that is exceptional in or on the water An exceptional location for angling or customary food gathering A unique historical or heritage site	
Cultural & Spiritual	Preliminary and high level comments only are provided using the following framework: For understanding and assessing the outstanding values, attributes and uses of water bodies from a cultural and spiritual perspective, the following concepts have been applied:	

	<p><i>Wairuatanga</i></p> <ul style="list-style-type: none"> Mauri Mana Tapu Taonga tuku iho <p><i>Rangatiratanga</i></p> <ul style="list-style-type: none"> Mana whenua – mana moana Kaitiakitanga Mahinga kai (as a place, action or practice) <p><i>Whakapapa</i></p> <ul style="list-style-type: none"> O te whenua O te wai O te tangata Ki uta ki tai <p><i>Matauranga Maori</i></p> <ul style="list-style-type: none"> Tikanga Maori knowledge systems Traditional uses and values Origins of cultural knowledge <p><i>Cultural Natural Character</i></p> <ul style="list-style-type: none"> Spiritual condition Mana o te wai Connectivity between ground and surface water Cleansing properties as water passes through the whenua Spring / aquifer sources – water recharge systems <p>SPECIAL NOTE:</p> <p>Tangata whenua will provide locally relevant assessments through separate input to the process (Refer to Appendix 4: Maori cultural and spiritual values, and see Diagram 1).</p>
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Lake Whakakī

Including Patangata, Te Paeroa & Wairau Lagoons



LAKE WHAKAKĪ: DESCRIPTION OF OUTSTANDING VALUES

SUMMARY

TYPE	NAME	OUTSTANDING VALUE				
		ECOLOGY	LANDSCAPE	NATURAL CHARACTER	AMENITY & RECREATION	CULTURAL & SPIRITUAL
Wetland	LAKE WHAKAKĪ					

ECOLOGY

Description	Notes	Reference
<p><i>Threatened Species:</i></p> <p>6 bird species – Grey duck, white heron, bittern, black-billed gull, banded dotterel, Caspian tern</p>		Bird list in Appendix 2
<p><i>Ecological Function:</i></p> <p>Named wetlands are strongly connected hydrologically and ecologically</p> <p>Highly rated in the ‘wetlands of ecological and representative importance’ and the ‘sites of special wildlife interest’ databases</p>		HBRC 2018

LANDSCAPE

Description	Notes	Reference
Best coastal wetland/ lagoon complex in the region (regionally important)		NZ Geopres. Inventory

CULTURAL & SPIRITUAL

Description	Notes	Reference
Significant to the iwi and hapū of Te Rohe o Te Wairoa. Ngāti Kahukura, Ngāti Kirituna and hapū of Te Whakakī have cultural associations with the lake		HBRC 2018
<p><i>Wairuatanga:</i></p> <p>Mauri, Mana, Tapu, Taonga tuku iho</p> <p><i>Rangatiratanga:</i></p>		WAI 262

Outstanding Water Bodies in Hawke's Bay: Report of the Expert Panel

<p>Mana Whenua - Mana Moana, Kaitiakitanga, <i>Mahinga kai:</i> (place/action/practice) <i>Whakapapa:</i> o te whenua, o te wai, o te tangata, ki uta ki tai</p>		
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Appendix 4: Final Evaluation - Lake Whakakī

Note: Appendix 4 contains extracts only - for further information please refer to the full report.



Outstanding Water Bodies Plan Change Selecting a list of outstanding water bodies in Hawke's Bay

HBRC Report Number: SD19-18
Publication Number: 5400

Outstanding Water Bodies Plan Change

Selecting a list of outstanding water bodies in Hawke's Bay

HBRC Report Number: SD19-18
Publication Number: 5400



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Ecology values

Wildlife

Whakakā Lake is the second largest coastal lake on the North Island's east coast, with a total wetland area of around 600 hectares. It is currently in a degraded state and suffers from frequent algae blooms which severely affect its water quality and wildlife habitats.

Whakakā Lake has historically supported a high diversity of birds, with over 46 species of waterbirds having been recorded in this area, including the endangered Australasian bittern, the New Zealand dabchick, the Wrybill, Spotless Crake, Fernbird and Banded Rail, and a number of migratory species.

In the 1950s, the lake supported a large waterfowl population including grey teal ducks, shoveler ducks, the Canadian goose and thousands of black swan. In more recent years, black swan numbers have dwindled to less than a hundred.

Recent information from DOC suggests the lake and wetland area support around 14% of the regional population of Australasian bittern.

In 1986, Whakakā Lake was identified as containing an outstanding wildlife habitat and was placed in 'Group One' of the Government's List of Rivers and Lakes Deserving Protection in New Zealand.

The local expert panel found Whakakā Lake (including Patangata, Te Paeroa and Wairau Lagoons) to have outstanding wildlife values and outstanding ecological function, specifically noting the connectivity between the wetlands, the number of threatened species present, and the high numbers of Australasian bittern. The local expert panel's report is attached in Appendix 6.

Native fish

Whakakā Lake is an intermittently closed and open lake (ICOLL) which is a rare habitat type both in New Zealand and internationally. It is currently in a degraded state and suffers from frequent algae blooms during the summer months.

Information in the secondary assessments indicates Whakakā Lake supports six native species of fish. The most numerous species is the shortfin eel, followed by the common bully, longfin eel, flounder, grey mullet and īnanga.

The local expert panel did not discuss the native fish values associated with Whakakā Lake. Appendix 6 sets out the full findings of the local expert panel.

Native plants

Historically, Whakakā Lake contained significant beds of native aquatic macrophytic plants and fringes of primarily native vegetation, including saltmarsh ribbonwood, rushes, sedges and wetland turfs.

In 2017, NIWA found Lake Whakakā to be in a degraded state with no submerged plants.

The local expert panel's report does not discuss the native plant values associated with Whakakā Lake. Appendix 6 sets out the full findings of the local expert panel.

Natural character

Whakakā Lake is the last significant wetland of a much larger 6,000 hectare wetland landscape. The lake has undergone significant historical modifications through burning, clearance and drainage and only 10% of the original wetland remains.

During the 1950s an artificial outlet channel was installed through the dune system, emptying almost the entire lake volume, transforming the lake ecology.

The local expert panel's report does not discuss the natural character of the Whakakā Lake. Appendix 6 sets out the full findings of the local expert panel.

Landscape / geological features

Lake Whakakāi is a coastal lagoon with a total area of around 600 hectares of combined lake, sand dune and swamp areas.

Whakakāi Lake is part of a bigger wetland complex which includes the Ngamotu, Ohuia, Waihoratuna, Wairau, Te Paeroa, and Patangata lagoons. Collectively these wetlands are considered to be the best representative example of this coastal landscape type in the Hawke's Bay.

This group of wetlands are identified on the Geopreservation Inventory as being Class C (regionally important), along with 89 other features in Hawke's Bay. The Inventory cites these wetlands as being the best coastal lagoons in Hawke's Bay.

The local expert panel found Lake Whakakāi to have outstanding landscape values, specifically noting that the area contains the best coastal wetland/lagoon complex in the region. Appendix 6 sets out the full findings of the local expert panel.

Cultural and Spiritual values

Te Whakakāi Lagoon is of spiritual and cultural significance to Ngato Kahukura, Ngati Kirituna and the hapū of Te Whakakāi Nui-a Rua. It includes Te Paeroa and Waiarau Lagoons, which form part of the interconnected wetland complex.

Situated between Wairoa and Nuhaka, the lagoon is part of an extensive and unique coastal wetland. It provides habitat for several rare and iconic species, including eels, inanga and native aquatic macrophytic plants.

Its name is based on a word meaning 'to fill', referring to the lagoon. Until the early 1900s, lagoon waters only exited to the sea when floodwaters naturally overtopped the sandbar, or Ahikaa and tangata whenua opened the bar manually to facilitate subsidence of floodwaters.

Information reviewed indicates the water body contains the following key values:

- Mahinga kai, Pa tuna.

The local expert panel found that Lake Whakakāi contained known outstanding cultural and spiritual values, specifically noting wairuatanga, rangitiratanga and mahinga kai.

Iwi authorities at the Wairoa sub-regional hui recommended that all waterbodies, including lakes and wetlands, in the Nuhaka catchment have outstanding cultural and spiritual values. The lake and surrounding lagoons are particularly important for mahinga kai, kāinga pā and there are many important historical sites around the area.