Waterways
Centre for Freshwater Management

Waitatari/Harts Creek Bird Hide
Exploring Visitor Book Data (2017-2019)

WCFM Report 2020-001

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TE WHARE WĀNAKA O AORAKI

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CHRISTCHURCH NEW ZEALAND

REPORT: WCFM Report 2020-001

TITLE: **Waitatari/Harts Creek Bird Hide: Exploring Visitor Book Data (2017-2019)**

PREPARED FOR: Te Waihora Integrated Monitoring Strategy (2016)

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Executive Summary

The sustainability of natural features often depends on how humans manage their use and this requires knowledge of where and when people most engage with a natural feature. Support for management often depends on the values attached to the feature. The number of visits to a feature, or a discrete site that is part of the feature can be indicative of the potential for the impact of visitors, the value of that feature, or as a wellbeing measure.

Te Waihora/Lake Ellesmere is a large natural feature with many uncontrolled public access points, which makes monitoring recreational use problematic. Prior research which investigated a recreation monitoring framework for Te Waihora/Lake Ellesmere identified data collected through visitor book entries in the Waitatari/Harts Creek Bird Hide is a valid way of monitoring recreational use at a key location on the lake.

The Waitatari/Harts Creek Bird hide is located on the west side of Te Waihora/Lake Ellesmere, approximately 54 km south of Christchurch in the Selwyn District. It is reached by a short walk over private land and a Wildlife Management Reserve, managed by the Department of Conservation. Between January 2017 to December 2019 a visitors book was located in this hide and visitors were invited to enter the date of their visit, where they have travelled from, and short comments about their experience.

This report analyses entries from the Waitatari/Harts Creek Bird Hide Visitor Book collected from 2017 to 2019. The data was investigated for a number of reasons. Firstly, to determine if it could be used as a reliable monitoring measure which could inform potential indicators for recreational use of the lake. Secondly the data was analysed to detect any trends in numbers of visitors by month, origin of visitors and possible themes for qualitative comments.

Field observations estimate that only a third of visitors sign the book. The reliability of the data generated by visitor entries can therefore be regarded as a general estimate only, and is not adequate as a reliable “enough” measure over a long period of time. A more accurate measurement of the number of pedestrians using the track and/or the bird hide is required to count the actual total number of visitors over time and is strongly recommended. This could be achieved by installing a standard pedestrian counter on an appropriate part of the track.

Collecting reliable information about the numbers of visitors to the hide has the potential to be used as a measure for a range of indicators which are broadly relevant to recreational monitoring. Further research is also required to determine which indicators the visitor data is most appropriate for, along with exploring the notion of the experience of well-being associated with walking the track and visiting the hide. Once confirmed, upgraded pedestrian count monitoring is relatively simple and has the potential to have high value. A pedestrian count could be used to inform indicators for a wide range of plans and strategies developed by a range of stakeholders including Rūnanga, Department of Conservation, Te Waihora Co-Governance Group, Selwyn District Council, Lincoln University and Environment Canterbury.

The Waitatari/Harts Creek visitor book recorded between 900 and 1500 visitors a year. Despite the limitations regarding reliabilty of data collected through the book, January across

all years is likely to be the busiest time of the year at the bird hide which correlates with school holidays in New Zealand and Australia, plus peak domestic and international tourism. Easter and December have higher levels of visitors, which also coincides with New Zealand school holidays.

Of the visitors who indicated where they originated from, the majority are from New Zealand/Aotearoa, with less than 10% identifying their origin as being global. Whilst tourists from the UK and Australia comprise the majority of international visitors, visitors from 24 other countries were recorded. A significant majority of visitors from New Zealand across all three years are from Canterbury and of those, most are from the Selwyn district (72% overall), or Christchurch (24%). High numbers of people from Selwyn are from communities located relatively close to the lake. The most common origin of visitors from Selwyn are Leeston at 43%, Rolleston 15%, and Southbridge 13% overall. Finally, based on a review of comments entered into the book, it is recommended that quality interpretation material which provides good information about the lake is installed in the hide.

Acknowledgements

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Te Rūnanga o NGĀI TAHU

Thanks to Associate Professor Hamish Rennie from the Department of Environment, Faculty of Environment, Society and Design, Lincoln University for reviewing this report.

Authors

Alan (Snow) Reese anticipated the value of capturing information about visitors to the bird hide and ensured that a visitor book was available in the hide. He is a local resident who also donates many volunteer hours maintaining both the hide and the track. Alan offered many insights which underpinned the development of this report, plus supplied several photos.

Katie Nimmo is a project manager for the Waterways Centre for Freshwater Management, a joint partnership between Lincoln University and the University of Canterbury.

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1. Introduction

The sustainability of natural features often depends on how humans manage their use and this requires knowledge of where people most engage with the feature. Support for management often depends on the values attached to the feature. The number of visits to a feature, or a site that is part of the feature, is indicative of the potential for impacts and the value of that feature. However, obtaining data on visitation to a large natural feature with many uncontrolled public access points can be problematic. Aotearoa/ New Zealand's Te Waihora/Lake Ellesmere is such a feature where measuring the level of use is difficult to determine (Brennan et al., 2019).

The need for a recreation monitoring framework was identified in a broader integrated monitoring strategy that outlines a range of different data sets relevant to monitoring the state of Te Waihora/Lake Ellesmere (Hughey 2016). Data set domains for this latter monitoring strategy include water quality, vegetation, land use, wild life, fish, cultural health, recreation, governance, and economy. Brennan et al. (2019) subsequently identified data collected through visitor book entries in the Waitatari/Harts Creek Bird Hide as a valid way of indicating recreational use at a key location on the lake. Such data may be relevant for a range of other monitoring frameworks, strategies and plans.

This report analyses entries from the Waitatari/Harts Creek Bird Hide Visitor Book collected from 2017 to 2019. The data was investigated for a number of reasons. Firstly, to determine if it could be used as a reliable monitoring measure to inform different indicators for recreational use of the lake. Secondly the data was analysed to detect any trends in numbers of visitors by month and origin of visitors. Qualitative comments about the lake, hide, or walk into the hide were also considered to identify simple ways to improve visitor experience.

1.1 Location of Waitatari/Harts Creek Bird Hide

The Waitatari/Harts Creek Bird hide is located on the west side of Te Waihora/Lake Ellesmere, which is a large open, water body in mid-Canterbury. The hide is approximately 54 km south of Christchurch within the territory of the Selwyn District Council. The hide is located at the mouth of Waitatari/Harts Creek, a spring-fed stream that rises between Leeston and Southbridge and flows for about six kilometres before reaching Te Waihora/Lake Ellesmere (Environment Canterbury, n.d.).

The legal status of the land within which the hide is sited is a Wildlife Management Reserve, which is "…an area of land protected for the conservation, management and public appreciation of wildlife" (Department of Conservation, 2020).

Figure 1 Location of Harts Creek Wildlife Management Reserve on Te Waihora/Lake Ellesmere[1]

Key	Department of Conservation Wildlife Management Reserve		Department of Conservation Stewardship Areas	

[1] Source: Canterbury Maps https://canterburymaps.govt.nz/

The hide is at the distal end of a 1.46 km long track that starts at the Waitatari/Harts Creek Wildlife Management reserve carpark. The Department of Conservation rates the track as "Easiest", and estimates that it takes about 40 minutes to walk (return) (Department of Conservation, 2020). The track follows a historic river bed on hydrological parcels (and therefore Crown owned), but small areas of land on the true left are owned by others who have blocks of land bordering the true right of the creek. Activities that occur along the track or in the bird hide include picnicking, geocaching, photography, and fishing (Brennan et al, 2019).

Figure 2 Location of Waitatari/Harts Creek Track and Bird Hide in relation to the Harts Creek Wildlife Management Reserve[2]

Harts Creek Wildlife Management Reserve Area	
Track	
Location of Waitatari/Harts Creek Bird hide	
Te Waihora Harts Creek and Landing Point Conservation Area	

[2] Source: Canterbury Maps https://canterburymaps.govt.nz/

Figure 3 Picnic next to the walkway into the Waitatari/Harts Creek bird hide. Photo: Alan Reese

The track then turns into a boarded walkway which enters the Harts Creek Wildlife Management Reserve, administered by the Department of Conservation.

Figure 4 Waitatari/Harts Board Walk. Photo: Alan Reese

The bird hide is a camouflaged hut set out on the lake for easy viewing of birdlife.

Figure 5 Waitatari/Harts Creek Bird Hide. Photo: Katie Nimmo

Figure 6 Counting birds at the Waitatari/Harts Creek Bird Hide. February 2020. Photo: Frances Schmechel

Figure 7 View east from Waitatari/Harts Creek bird hide towards the Port Hills and Christchurch. August 2019 Photo: K Nimmo

1.2 History of Waitatari/Harts Creek Bird Hide

The Harts Creek Wildlife Reserve is a densely wooded swamp area consisting of freshwater wetland, raupo reed lands and exotic species (Environment Canterbury, 2020). Vegetation pre-dating fires about 500 years ago may have included kahikatea, red beech, matai and totara. These were replaced by harakeke-dominant swamp which was further altered by development in the 19th century for farming purposes (Te Runanga O Ngai Tahu., Department of Conservation, 2005). Whilst exotic species such as willow and other environmental weeds have invaded the area, it is still an important habitat for waterfowl and swamp birds including the Australasian Bittern/Matuku, which has a conservation status of Threatened-Nationally Critical (Department of Conservation, 2020).

It is highly significant to Ngāi Tahu as a mahinga kai. The Taumutu Rūnanga is closely associated with this area and Ngāti Moki marae is located 9 kilometres away on the south west shore of the lake (Te Taumutu Rūnanga, 2020). Waitatari is the name used by tangata whenua for the water body now commonly known as Harts Creek (Te Rūnanga O Ngāi Tahu, 2020). As a tributary to Te Waihora/Lake Ellesmere, the connectivity of Waitatari/Harts Creek, and its (historic) associated wetlands to the lake is integral to the mauri, or life force, of the lake (Te Rūnanga O Ngai Tahu, Department of Conservation, 2005).

Te Waihora/Lake Ellesmere provides an internationally significant habitat for wading and shore birds. It is the most diverse site in New Zealand for birdlife, with 167 different bird species recorded, and an average of 47,000 birds having been counted on the lake (Ford. 2018). It feeds migratory birds from Russia, China, Canada and Korea. Migratory birds which can be seen each summer include Curlew Sandpiper, Sharp-tail Sandpiper, Pectoral Sandpiper, Red Necked Stint, Ruddy Turnstone, Golden Pacific Plover, Red Knot and the Bartail Godwit. This richness of species regularly attracts local, national, and international birders, some of whom report their sightings on E-Bird (https://ebird.org/home).

Constructing the walkway and bird hide was a real community effort. It was initiated primarily by Ian McCormack who proposed it to the Ellesmere Lions Club which then supplied labour to build the structures over a period of two years in the early 1990s (Personal communication, P. Chamberlain, 12 March, 2020). The walkway was built from logs donated by the Selwyn Plantation Board and the hide itself was made from a strengthened reconstructed car case (Ellesmere Echo, 1993). The walkway and hide was opened on the 18th of April 1993 and whilst it is located on private and Department of Conservation estate land, over the years it has been maintained by members of the Ellesmere Lions Club. The walkway and hide is currently maintained by Alan Reese who is supported by contributions from the estate of Colin Patterson and Hantz Honey, a local honey producer located at the entrance to the track, which assists with wasp control (Personal Communication, A. Reese, 3 February 2020).

1.3 Waitatari/Harts Creek Bird Hide Visitor Data: Collection and Methods

The visitor book was first installed into the bird hide on the 9th of January 2017 when Alan Reese, a local resident (who donates many volunteer hours maintaining the hide) anticipated the value of capturing information about visitors to the bird hide. The visitor book records self-entered information such as group size, visitor origin, day of visit and a range of activities (e.g. walking and bird watching). The first entry was on 9 January 2017, and Alan has ensured that a visitor book is permanently available on an ongoing basis.

From 9 January 2017 until the end of December 2019, the book was present in a prominent position on a shelf inside the hide with a pen attached by string to an adjacent nail. The pen was replaced when found to be missing (checks were conducted on the book and pen on a semi regular two week basis).

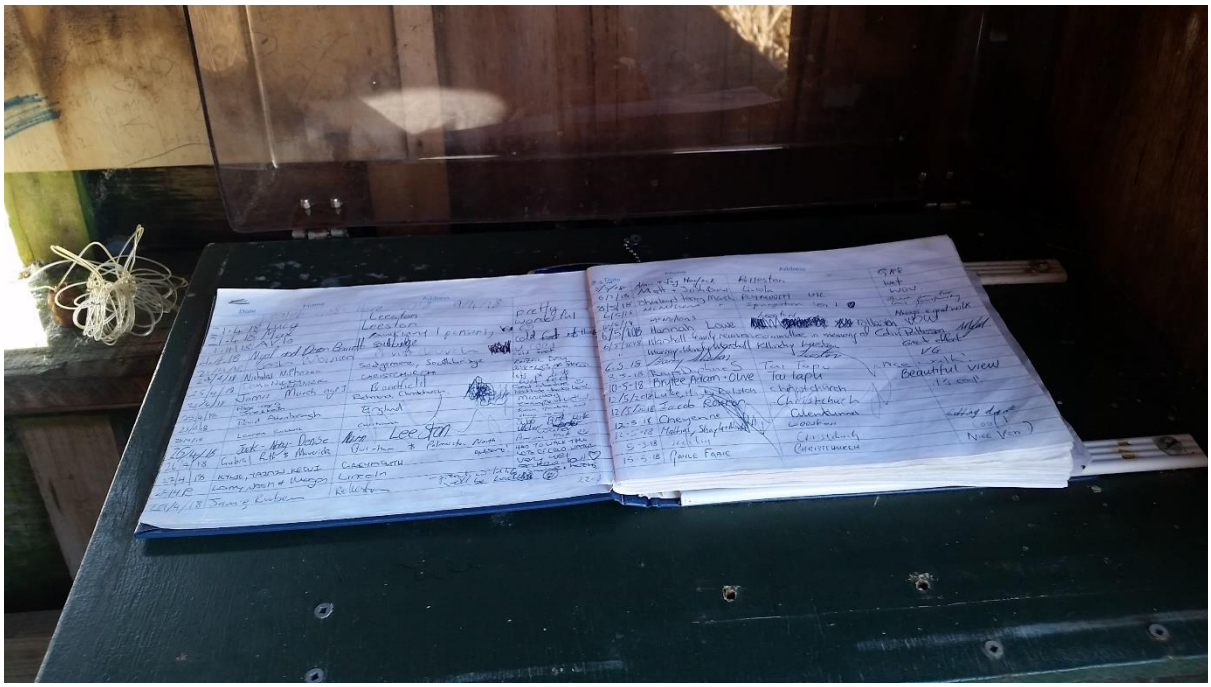

Figure 8 Visitor book in Waitatari/Harts Creek Bird Hide August 2019. Photo: Katie Nimmo

In January 2020 the visitor book was relocated from inside the hide to a location adjacent to signage at the entry to the track. To protect the book and those writing in it from the elements the book was housed inside a small shelter (Figure 9). A pen attached by a chain to the post. From 2020 onwards, the effects of this change in location on visitor recordings in the book will need to be considered in any future analyses.

Figure 9 Waitatari/Harts Creek Visitor Book 2020. Photo: Alan Reese.

Visitor entries from the 9 January 2017 until 31 December 2019 were copied into a simple Excel spreadsheet. This included the date of the visit, number of people visiting, and their place of origin. If the name of a family was mentioned but not the numbers of people in the group, it was assumed that four family members visited the hide, and so four were entered into the spreadsheet in each such entry. The data was then aggregated and calculated on a month by month basis.

For the year of 2017, qualitative comments were also entered into the Excel spreadsheet against the date of entry. Resources were not available to copy qualitative comments for the subsequent years, however a sense–check (comprising reflective reading by the authors of each entry) revealed no new themes emerged in subsequent years.[3] Future analysts may wish to explore untransferred data for nuance, frequency and temporal information (e.g. seasonality) contained in comments. Qualitative comments are graphically represented on page 19. The graphic was generated using WordCloud,[4] which counted the most commonly used adjectives or nouns in the visitor book 'comments' section. The more often a word is used, the larger the word in the infographic.

[3] The visitor book remains available for future data transfer which can be combined with the existing spreadsheet.

[4] https://www.wordclouds.com/

2 Waitatari/Harts Creek Bird Hide Visitor Data As A Measure For Recreation Indicators

Data extracted from the Waitatari/Harts Creek Bird Hide visitor's book has the following limitations;

1. Entries into the visitor's book are voluntary. From observations made by Alan Reese when working on the track and on his visits to the hide when others were using it is estimated that only a third of visitors overall sign the book . Visitor numbers are therefore under-represented and the actual numbers of vistors are not known. Only more accurate monitoring methodologies can test this assumption.

2. 36% of visitors overall did not indicate their origin in the book.

3. Data from February-mid April 2018 is missing, reducing the overall total number of visitors for that year.

Given that it is estimated that only a third of the visitors to the hide record their visit, the reliability of data collected through the Waitatari/Harts Creek Bird Hide visitor book is limited. Analysis and conclusions should be considered as a general gauge of visitor frequency and origin, rather than an accurate record. A more accurate measurement of the number of pedestrians using the track and/or the bird hide is required to count the actual total number of visitors over time. It is strongly recommended that a pedestrian counter on an appropriate part of the track is installed.[5]

2.1 Data as a measure

If measurement of the number of visitors to the Waitatari/Harts Creek Bird Hide is improved, it is worth outlining how this data can be used to inform a range of management decisions, plans and strategies. It is helpful to make a clear distinction between data as a 'measure' and data used to inform an indicator (Social Policy Evauation and Research Unit, 2017). A measure, or measurement is "…the assignment of a number to a characteristic of an object or event, which can be compared with other objects or events" (Pedhazur et al, 1991). In this case, the object being measured is a pedestrian visiting the bird hide.

2.2 Indicators

An indicator is "..(a) quantitative or qualitative factor or variable that provides a simple and reliable means to measure achievement, to reflect the changes connected to an intervention, or to help assess the performance of a development actor." (OECD, n.d). At times a measure is the only data that informs an indicator, and in such instances the terms 'measure' and 'indicator' are often used interchangeably (Social Policy Evaluation and Research Unit, 2017).

A measure can inform multiple indicators. In the case of the numbers of visitors to Waitatari/Harts Creek bird hide, this data as a measure has the potential to inform different indicators that are broadly relevant to management of, or monitoring, recreational use of the lake. A literature review commissioned by Environment Canterbury in 2018 investigated how

[5] Not all people walking the track will reach the hide. A location which enables a counter to record the number of people visiting the actual structure is preferable.

to define freshwater recreation and amenity values in Canterbury.[6] Recreation values are "… the recreational experience outcomes generated at different freshwater sites/settings by the presence of various key contributing features." (Cessford & Jones, 2018 Pp. 5). The authors identify a suite of four types of values, which includes User-Based attributes, Experiential-Based attributes, Resource-based attributes, and Managerial-based attributes. This framework could be looked at more closely to see how Waitatari/Hart's Creek Bird-hide visitor data could be applied to such a framework. The advantages of using such a framework (if adopted by the Canterbury Water Management Strategy) is that the Waitatari/Harts Creek bird hide visitor data is then comparable to other water-based recreation sites in Canterbury.

More specifically, the Waitatari/Harts Creek bird hide data could also be considered for the following indicators which are likely to fit into the above framework;

1. The impact of visitors on the site (Cessford & Muhar, 2003). The Department of Conservation is responsible for managing the Waitatari/Harts Creek track and the bird hide because these structures are located within a Wildlife Management Reserve or on hydrological parcels (owned by the Crown).[7] Data about the historical utilisation of a Department of Conservation site influences both maintenance plans and capital investment into that site by the Department.[8] [9]

2. The economic value of visitors based on opportunity cost (Blayac, Hamade & Salles, 2016) or derived willingness to pay (Platania & Rizzo 2018). Additional research which tracks and calibrates the proportion of visitors from Canterbury, the rest of New Zealand and international visitors would help to obtain a better understanding of this value.

3. The experiential nature of the walk and the bird hide as a well-being indicator (Blaschke, P. 2013; Roberts et al., 2015; Wheaton, 2020).

2.3 Plans, Strategies and Decision making

If resources are found to monitor visitors to the bird hide accurately, further research could be conducted to determine which indicators the measure could be used for. Upgrading pedestrian count monitoring is relatively simple and has the potential to have high value, as a single count could be used to inform indicators for a wide range of plans and strategies including;

a) Cultural health assessments, if considered appropriate by rūnanga and/or Te Rūnanga O Ngāi Tahu (Ministry for the Environment, 2020, Living Water, 2020)

b) Te Waihora/Lake Ellesmere Joint Management Plan (2005)

[6] Whilst some recreation sites around Te Waihora/Lake Ellesmere are recorded as 'priority' recreation sites in the aforementioned literature review, Waitatari/Harts Creek bird hide is not mentioned specifically. This may be due to being located on Department of Conservation land.
[7] Personal Communication, Craig Alexander, Department of Conservation 16 March 2020
[8] Personal Communication, Dr. Jeff Dalley, Department of Conservation, 21 December 2019
[9] The walkway and bird hide is noted in the 2005 Te Waihora Joint Management Plan (2005), but no comment is made about which agency is responsible for the maintenance of either.

c) Te Waihora/Lake Ellesmere Recreation Monitoring Framework (Brennan, K. et al. 2019).

d) Te Waihora/Lake Ellesmere Integrated Monitoring strategy (Hughey, 2016).

e) Selwyn District Council Open Spaces Strategy (2015). Te Waihora/Lake Ellesmere in general is noted in the Selwyn District Council's (2015) 'Open Spaces Strategy' as a significant contributor of open space in the district. The strategy identifies that on-going population growth within the Selwyn District is significantly affecting open space resources across council territory, with a corresponding need for increased wilderness experiences.

f) Canterbury Water Management Strategy (2019). Recreation is a key target in the Canterbury Water Management Strategy, which describes the overall approach and delivery models for the sustainable development of Canterbury's Water Resources. Recreation targets are numerous. One such recreation target for 2025 is "…a continuing and measurable positive trend, against baseline information, in the diversity, availability, and quality of recreational opportunities in each zone. (Canterbury Mayoral Forum 2019, Annex M, Pp. 169).

g) A next-generation monitoring framework currently being developed by the Te Waihora/Lake Ellesmere Co-Governors

h) Department of Conservation asset management planning generally.

3 Analysis of Waitatari/Harts Creek Bird Hide Visitor Data

This section describes findings from analysis of the bird hide data, including total number of visitors, origin of visitors (local, regional, national and international), plus a review of the comments recorded in the book.

3.1 Total Numbers of Visitors to the Waitatari/Harts Creek Bird Hide

The Waitatari/Harts Creek visitor book has recorded between 900 and 1500 visitors a year (Table 1). The data missing from mid-February to mid-April in 2018 includes the Easter period. Consequently the total for that year is likely to be underestimated. January across all years is consistently the busiest time of the year at the bird hide which correlates with school holidays in New Zealand and Australia plus peak domestic and international tourism. The data suggests that Easter and December have higher levels of visitors, which also coincides with New Zealand school holidays.

Table 1 Numbers of visitors recorded in Waitatari/Harts Creek Bird Hide Visitor Book 2017-2019

Month	2017	2018	2019	TOTAL
January	156	185	224	**565**
February	136	110	98	**344**
March	81	*	103	**184**
April	225	41	111	**377**
May	88	98	95	**281**
June	58	48	104	**210**
July	61	54	59	**174**
August	71	41	44	**156**
September	108	124	26	**258**
October	192	69	133	**394**
November	138	51	94	**283**
December	107	114	111	**332**
	1421	**935**	**1202**	**3558**

*data missing from mid-February to mid-April 2018

3.2 Origin of visitors

3.2.1 Numbers of Domestic and International Visitors

Data for the three years suggests that the majority of visitors are from New Zealand (Table 2). A high number of visitors did not indicate their origin, but 2019 indicates a higher proportion of domestic visitors. Based on the data where origin is clearly specified, it is likely that most 'not specified' visitors are from New Zealand.

Table 2 Numbers of Domestic and International Visitors 2017-2019

Country of Origin	2017		2018		2019		*Total*	
	N	%	N	%	N	%	N	**%**
New Zealand	555	39.1	530	56.7	908	75.54	1993	**56.01**
Not specified	758	53.3	332	35.5	182	15.14	1272	**35.75**
International	108	7.6	73	7.8	112	9.32	293	**8.23**
Total	**1421**	**100.0**	**935**	**100.0**	**1202**	**100.00**	**3558**	**100.00**

Manuhiri[10] from beyond Aotearoa/New Zealand do not appear to be a significant cohort of visitors to the bird hide, with less than 10% identifying their origin as being outside of Aotearoa/New Zealand. It is possible that some international visitors visiting the lake with the express intention to look for specific bird species may not visit the hide, instead choosing to go to less-frequented areas that are known to and valued by the birdwatching community. Visits by intentional bird watchers could also be influenced by the weather conditions on the day and the season when sought-after migratory species are on the lake.

Whist tourists from the UK and Australia comprise the majority of international visitors to the bird hide (a fifth each roughly), manuhiri from 24 other countries were recorded in the visitors book (Table 3). "Other" includes visitors from the following countries at very low numbers (less than 10 visitors from each country); Czech Republic, Netherlands, Switzerland, Italy, South Africa, Austria, China, Philippines, Pakistan, Taiwan, India, Chile, Spain, Russia, Slovakia, Estonia, Denmark, Fiji, and Mexico.

Table 3 Origin of International Visitors 2017-2019

Country of Origin	N	%
United Kingdom	67	22.87
Australia	60	20.48
France	22	7.51
Germany	22	7.51
Singapore	19	6.48
Canada	17	5.80
United States	15	5.12
Other*	71	24.23
Total	**293**	**100.00**

[10] Guests, or visitors

Comments from the visitor book suggest that some international visitors are hosted by locals from Christchurch or Selwyn District who already know about the hide and bring their guests for a day trip. Other international visitors may have heard about the hide from residents at the local freedom camp ground at Lakeside Domain.

3.2.2 Regional Origin of Visitors from New Zealand

Once visitors who did not specify their origin are excluded from the data, a significant majority of visitors from New Zealand (over 90%) across all three years are from Canterbury. The numbers of people from regions outside Canterbury visiting the hide has stayed at a relatively steady state, between 8-10%. Judging by comments in the visitor's book, some visitors from other regions appear to be hosted by locals from Christchurch or Selwyn District who already know about the hide and bring their guests for a day trip.

Table 4 Regional Origin of Visitors from New Zealand 2017-2019

Region of origin	2017		2018		2019		TOTAL	
	N	*%*	N	%	N	%	N	**%**
Canterbury	511	92.1	480	90.6	838*	92.7	1829	***92.0***
Otago	8	*1.4*	1	*0.2*	19	*2.1*	28	***1.4***
Not specified	3	*0.5*	14	*2.6*	9	*1.0*	26	***1.3***
Auckland	5	*0.9*	6	*1.1*	6	*0.7*	17	***0.9***
Westland	0	*0.0*	7	*1.3*	10	*1.1*	17	***0.9***
Wellington	0	*0.0*	10	*1.9*	6	*0.7*	16	***0.8***
Nelson	3	*0.5*	6	*1.1*	4	*0.4*	13	***0.7***
Waikato	7	*1.3*	2	*0.4*	3	*0.3*	12	***0.6***
Southland	6	*1.1*	0	*0*	4	*0.4*	10	***0.5***
Hawke's Bay	7	*1.3*	0	*0*	2	*0.2*	9	***0.5***
Marlborough	1	*0.2*	3	*0.6*	1	*0.1*	5	***0.3***
Manawatu	2	*0.4*	1	*0.2*	0	*0.0*	3	***0.2***
Bay of Plenty	2	*0.4*	0	*0.0*	0	*0.0*	2	***0.1***
Northland	0	*0.0*	0	*0.0*	2	*0.2*	2	***0.1***
Total outside Canterbury	44	*7.9*	50	*9.4*	66	*100.0*	160	***8.0***
Total	**555**	***100***	**530**	***100***	**904**	***100.0***	**1989**	***100***

*this increase reflects a higher number of people stating their origin, rather than an increase in the actual numbers of visitors to the hide

3.2.3 Origin of Visitors from Canterbury

The majority of visitors who originate from Canterbury are consistently from the Selwyn district (72% overall) (Table 5). High numbers of people from Selwyn are from communities located relatively close to the lake. The most common origin of visitors from Selwyn are Leeston at 43%, Rolleston 15%, and Southbridge 13% overall.

Whist Christchurch city is 45 kilometres away from Waitatari/Harts Creek, it supplied nearly 24% of visitors.

Table 5 Origin of Visitors Within Canterbury 2017-2019

Origin *	2017		2018		2019		TOTAL	
	N	%	N	%	N	%	N	%
Selwyn	385	75.3	314	65.4	616	73.8	1315	**72.0**
Christchurch	92	18.0	156	32.5	189	22.6	437	**23.9**
Waimakariri	18	3.5	5	1	4	0.5	27	**1.5**
Ashburton	15	2.9	0	0	20	2.4	35	**1.9**
Timaru	1	0.2	5	1	4	0.5	10	**0.5**
Total	**511**	**100.0**	**480**	**100**	**835**	**100.0**	**1826**	**100.0**

*excludes visitors who stipulated they were from Canterbury, but did not state the territorial authority or district they were living in.

Te Waihora/Lake Ellesmere in general is noted in the Selwyn District Council's (2015) 'Open Spaces Strategy' as a significant contributor of open space in the district. The strategy identifies that on-going population growth within the Selwyn District is significantly affecting open space resources across council territory, with a corresponding need for increased wilderness experiences. Improvements to the quality of open space therefore requires cross-agency synergies and cooperation. Given that the significant majority of visitors to the Harts Creek Track and bird hide are from the Selwyn District, data resulting from any improvements in monitoring the use of the track should be shared with relevant staff and decision makers in the Selwyn District council.

3.3 Qualitative comments by visitors

Adjectives used to describe the experience of walking the track and visiting the hide were recorded for the year 2017 only. A sense-check of comments using reflective reading for subsequent years revealed no new themes, and it was determined that there was no value in recording or analysing comments from 2018 and 2019. Fig. 10 on pg. 19 is a Word Cloud graphic generated from the most commonly used adjectives in the visitor book 'comments' section. The more often a word is used, the larger the word in the infographic.

Whilst some visitors recorded lists of birds observed on the walk and at the hide, these were the exception to the rule suggesting that this is not a dominant motivation for visiting the hide. Instead, the walk appears to be valued as an enjoyable form of moderate exercise and the bird hide enables visitors to experience nature (vegetation, wildlife, and a large waterbody) in a quiet, secluded place. Comments on the high suitability of the walk for children and families were common. The low profile destination was a pleasant surprise for some, who offered the following observations;

"Hidden gem"

"A surprisingly lovely place"

The adjectives in the Word Cloud infographic along with comments like those above suggest a strong experiential well-being element for most visitors. It is recommended that further qualitative research is conducted to explore the experiential nature of the walk and the bird hide. This would in turn help to confirm the relevance of visitor count data as a potential measure for well-being.

Several visitors requested more information be installed into the hide about birds and the lake itself. Other comments indicated a real appreciation of the service provided by the Ellesmere Lions Club for building the walkway and the hide, and some noted how well the structures were maintained. Return visitors (some returned on a regular or yearly basis) commented on the changes in vegetation and bird life over a period of time. Finally, along with the expected bird species, those with more vivid imaginations reported seeing hippopottomus, wolves, crocodiles, and alligators!

Figure 10 Word Cloud based on qualitative comments in the Waitatari/Harts Creek Bird Hide Visitor book for the year 2017

4 Conclusion

This report analyses entries from the Waitatari/Harts Creek Bird Hide Visitor Book collected from 2017 to 2019. The data was investigated for a number of reasons. Firstly, to determine if it could be used as a reliable monitoring measure which could inform potential indicators for recreational use of the lake. Secondly the data was analysed to detect any trends in numbers of visitors by month and origin of visitors. Qualitative comments about the lake, hide, or walk into the hide was also considered to identify ways to improve visitor experience.

Entries into the Waitatari/Harts Creek Bird Hide visitor's book are voluntary and visitor numbers are highly likely to be under-represented. Data based on visitor book entries cannot currently be considered to be a 'good enough' reliable measure of recreational use of the hide. Improved monitoring of pedestrians on the track is required to reliably inform indicators of recreational use of Te Waihora/Lake Ellesmere.

Between 2017 to 2019, about 900 to 1500 people who visited the Waitatari/Harts Creek bird hide per year signed the book. The hide is a popular spot with local residents who originate primarily from the Selwyn District and Christchurch. International visitors and visitors from other parts of New Zealand are a relatively small cohort overall (less than 10%).

Whilst some visitors recorded a list of birds observed on the walk and at the hide, these were the exception to the rule suggesting that this is not a dominant motivation for visiting the hide. Instead, the walk appears to be valued by families as an enjoyable form of moderate exercise and as a place which enables visitors to experience nature (vegetation, wildlife, and a large waterbody) in a quiet, secluded place. Visitor comments also included a desire for more information about the lake, birdlife, and vegetation.

4.1 Recommendations

1. Accurate measurement of the number of pedestrians along the track is required and could be achieved by installing a standard counter on an appropriate part of the track.

2. Investigate and confirm the potential of improved data as a measure for the following suggested indicators;

    a. A value-attributes framework proposed for the Canterbury Water Management Strategy Recreation Targets. These include user-based attributes, experiential-based attributes, resource-based attributes, and managerial-based attributes.

    Examples of indicators that could fit into the above framework include;

    b. potential impact of visitors on the site.

    c. economic value (based on opportunity cost or derived willingness to pay) of domestic and international visitors.

    d. well-being.

3. Conduct further research on the following topics;

    a. explore the experiential nature of the walk and the bird hide through qualitative research.

    b. investigate further the frequency and origin of local, regional, national and international visitors. This could be done by surveying visitors at the entrance of the walk at peak tourist season in New Zealand. If the number of international tourists increase, or are higher than the visitor book data (2017-2019) indicates, quantifying the value of the daily spend of international tourists visiting the lake may be warranted.

4. Install quality interpretation material which provides good information about the lake from a tangata whenua perspective and wildlife typically seen from the bird hide. Any information should include the name “Waitatari” along with the name of Harts Creek.

5. Upgrading pedestrian count monitoring is relatively simple and has the potential to have high value, as a single count could be used to inform indicators for a wide range of plans and strategies including;

    a. Cultural health assessments, if considered appropriate by rūnanga and/or Te Rūnanga O Ngāi Tahu (Ministry for the Environment, 2020, Living Water, 2020).

    b. The Te Waihora/Lake Ellesmere Joint Management Plan (2005).

    c. The Te Waihora/Lake Ellesmere Recreation Monitoring Framework (Brennan, K et. al. 2019).

    d. The Te Waihora/Lake Ellesmere Integrated Monitoring strategy (Hughey, 2016).

    e. The Selwyn District Council Open Spaces Strategy (2015).

    f. A next-generation monitoring framework being developed by the Te Waihora/Lake Ellesmere Co-Governors.

    g. Freshwater Recreation and Amenity Value targets in the Canterbury Water Management Strategy (2019).

    h. Department of Conservation asset management planning.

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