



## Annual census of wetland birds on Te Waihora / Lake Ellesmere

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### 1. BACKGROUND

Te Waihora / Lake Ellesmere is large shallow coastal lake situated at the bottom of the Selwyn Catchment in Canterbury. The lake is separated from the sea by Kaitorete Spit which is periodically mechanically opened for fish migration and managing land inundation. Even though the lake and environs are highly modified there is a diverse range of wetland bird species present including those with conservation concerns such as the banded dotterel and Australasian bittern. In 1990 a National Water Conservation Order was gazetted for the lake to recognize its outstanding wildlife values. In 2011 the order was updated to include indigenous wetland vegetation and fish; and as being of significance in accordance with tikanga Maori in respect of Ngai Tahu history, mahinga kai and customary fisheries. However, the health of the lake and the tributaries that feed into it have declined over the decades, mainly through land use change.

Since 2013, the Waihora Ellesmere Trust, a community group established in 2003 to advocate for improved management of the lake, has been co-ordinating an annual count of wetland birds around the lake. The bird count is in partnership with the Department of Conservation, Birds NZ, Christchurch City Council Rangers and volunteers. The survey operates in accordance with an agreed monitoring protocol (see Hughey 2012).

### 2. CENSUS

The one-day count is done in February each year for several reasons; mainly to be consistent with previous surveys including those done in the early to mid-1980s. The lake

shore is divided up into 17 sectors established by O'Donnell (1985). The boundaries of these sectors are based on access points, natural boundaries and natural limits of habitat types. Teams of observers each cover one or more of these sectors. Observers gather at 8am for a briefing before heading out to the lake by around 8:30am. Mid-morning to mid-afternoon is the time of day when wetland birds are easiest to observe. Each team is made up of 3-5 people with at least one experienced birder. The Christchurch City Council Ranger teams survey the seven sectors on the southern and south-eastern side of the lake (including Kaitorete Spit). These sectors lie within the Christchurch City Council boundaries. The other teams survey the 10 remaining sectors which lie in the Selwyn District. Each observer carries a pair of binoculars and each team has at least one spotting scope. Members of the teams walk parallel to the shore in a line, distances between team members are determined by bird density, team size and the experience.

All wetland birds representing shags, herons, waterfowl, NZ Waders, Arctic waders, gulls and terns are counted. Numbers of pukeko, Australasian harrier and New Zealand kingfisher are also recorded. Weather, lake level and status (open or closed) is recorded.

Bird numbers showed an overall decline from 2013 to 2017 (56,755 to 42,852); however, 2018 saw numbers improve (51,807). Recent counts are higher than those done in 2006, 2007 and 2008; these three years had an average count of 39,272 birds (Crossland et al. 2015).

Waterfowl are the most numerous group of birds making up 77% of birds counted in the six years of this survey. Grey teal was the most

abundant bird counted in 2018 (17,773) followed by black swan (9,531). Black swan numbers have been declining over the survey period, but 2018 saw numbers close to 2006 levels. However, numbers are well down from peak populations of 80,000 recorded in the 1950s. The second most numerous group (12.7%) is the waders; pied stilt, banded dotterel and wrybill being the key New Zealand species. Key arctic waders counted on the lake are bar-tailed godwit, red-necked stint and red knot. A bird whose numbers have increased greatly since a sharp drop in 2014 is the New Zealand scaup, a small dabbling duck. The 2018 survey counted 367 birds whereas only 12 were counted in 2014.

Te Waihora / Lake Ellesmere is of international significance as a habitat for wetland / coastal birds. An average census of 49,000 birds has been recorded over the six years from 2013 to 2018. It is habitat for at least 14 species of birds that are either nationally vulnerable, nationally critical or

nationally endangered, including the Australasian bittern, black-billed gull, banded dotterel and wrybill.

### 3. REFERENCES

- Crossland, A.C., Crutchley, P., Alexander, B., Harrison, K., Petch, S., & Walker, J. (2015). A three year census of wetland birds on Lake Ellesmere/Te Waihora, Canterbury during the post breeding period. *Nortornis*, 62(3), 121-129.
- Hughey, K.F.D. (2012). A monitoring protocol for the birds of Te Waihora/Lake Ellesmere. Waihora Ellesmere Trust and Lincoln University.
- O'Donnell, C.F.J. (1985). Lake Ellesmere: A wildlife habitat of International Importance. *Fauna Survey Unit Report No. 40*, Christchurch: NZ Wildlife Service, Department of Internal Affairs.

