



K O N I N K L I J K E N E D E R L A N D S E
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Varia

St Kilda Wren

The remote St Kilda archipelago, situated 64 km west of North Uist, Outer Hebrides, and 160 km from the Scottish mainland, has been inhabited since the Bronze Age. The history of this Atlantic Ocean island group is therefore fairly well known to the general public. To birders, however, St Kilda is better known for one of the prime food sources of its former inhabitants: seabirds. With 60 290 pairs, it holds the largest Northern Gannet *Morus bassanus* colony in the world. For Leach's Storm Petrel *Oceanodroma leucorhoa* (45 000 pairs in 1999), Northern Fulmar *Fulmaris glacialis* (66 000 pairs in 1999) and Atlantic Puffin *Fratercula arctica* (135 000 pairs in 1999), the largest colonies within Europe can be found (Murray 2002, Murray et al 2014). The main island is also known for some exceptional Nearctic songbird vagrants that have been recorded, such as Hooded Warbler *Setophaga citrina*, Blackburnian Warbler *S fusca* and Evening Grosbeak *Hesperiphona vespertina* (Hudson & the Rarities Committee 2010, Haas 2012). But the archipelago has another ornithological treat, albeit a tiny one: the endemic St Kilda Wren *Troglodytes troglodytes hirtensis* (hereafter: *hirtensis*).

Geography and status of St Kilda

The isolated St Kilda archipelago forms the westernmost group of islands of the Outer Hebrides, Scotland (figure 1). The islands are owned by the National Trust of Scotland. St Kilda was designated a World Heritage Site by UNESCO in 1986 and the

Natura 2000 status protects the islands and its birds within a European context. For more information on the archaeology and (natural) history of the island, see, eg, Gannon & Geddes (2015).

The archipelago, the remnant of a long extinct volcano, consists of seven islands. They were formed in the Tertiary and mainly consist of granites and gabbro. Hirta is by far the largest island: with 670 ha it forms c 78% of the total land mass. Next in size is Soay (99 ha), followed by Boreray (86 ha). Smaller islets are Dun (that once was connected to Hirta), Stac an Armin, Stac Lee and Levenish. Since the last 36 permanent inhabitants were evacuated on 29 August 1930 because the living conditions became too harsh (cf Steel 1988), only researchers and army personnel live in the area. In early April 2016, Rachel Johnson, among those evacuated from the island in 1930, died at the age of 93; she was the last surviving former inhabitant (<http://tinyurl.com/zzndhb7>).

Access

For the authors, visiting St Kilda was literally a childhood (day) dream come true. Vincent van der Spek visited the islands on 30 May 2014 and Peter de Vries on 26 August 2014, a magical present for his 50th birthday. St Kilda may not be on your doorstep but, in the 21st century, it is not on the other side of the world either! Once you have reached the Outer Hebrides island of Harris, access is actually fairly straightforward: two tour companies run boat trips several times a week. Visitors are only allowed to land on the main is-

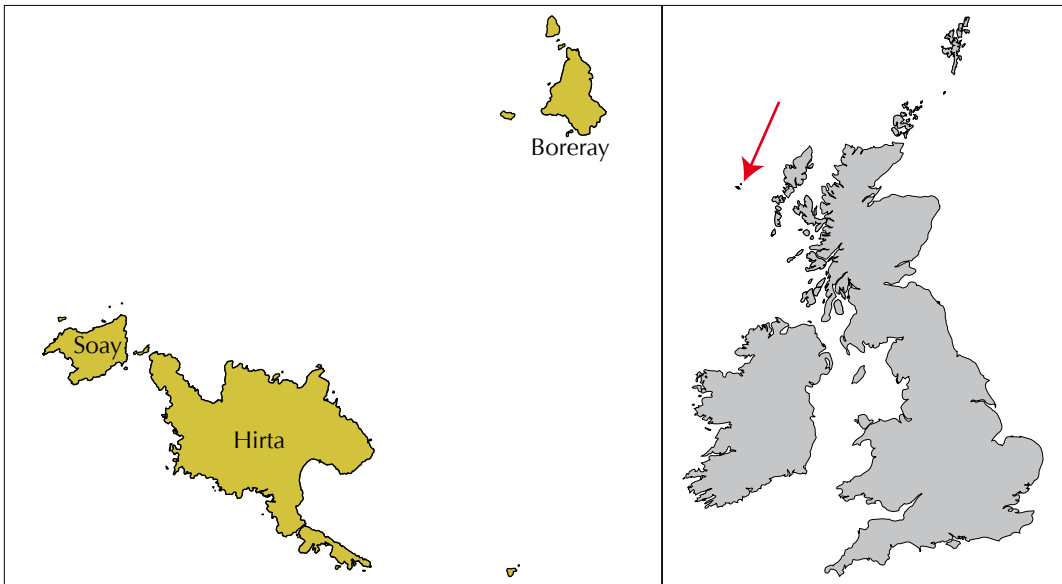


FIGURE 1 St Kilda archipelago, Outer Hebrides, Scotland

land of Hirta but the tour groups also circumnavigate the stacks with their seabird colonies by boat. Both of us were lucky to visit the island on a day without any wind – a rare phenomenon on the Atlantic Ocean!

The striking historical village remains on Hirta, of which some houses are still in good shape, are not only a stunning landscape feature but are also a good place to find the wren: they often breed in crevices and ruins (Miles 2011, Kroodsmá et al 2013). On 30 May 2014, singing wrens were already heard from the zodiac while the tour group was trying to land. In all, seven birds were found at the former village and its surroundings. Several showed very well and VvdS managed to photograph three individuals, all on the archaeological remains of the stone walls and black houses. PdV also found several singing birds in the village, as well as two birds in the Northern Fulmar colony behind the village, where the birds were foraging on insects between the nests.

Atlantic island wrens

The first to mention the presence of wrens on the island were the explorer Martin(us) Martin in 1697 (Martin 1703) and the reverend Kenneth Macaulay in 1758 (Macaulay 1764). In 1884, Seebohm first described *hirtensis*.

Winter Wren *T. hiemalis*, Eurasian Wren and Pacific Wren *T. pacificus* are part of a large Northern Hemisphere wren complex; they were formerly

considered a single Holarctic species with c 45 subspecies, stretching from North America (*hiemalis* sensu lato) to Europe, North Africa, the Middle East and large parts of Asia (*trogloodytes* sensu lato). Based on genetics, Drovetski et al (2004) found six clades within this group: in the western Nearctic, the eastern Nearctic, eastern Asia, Nepal, Caucasus and Europe. They connected their proliferation with Early and Middle Pleistocene glaciations. Western Nearctic wrens diverged from their Holarctic ancestor 1.6 million years ago. Eastern Nearctic and Palearctic wrens diverged 1 million years ago, Eastern and Western Palearctic birds 0.83, and Nepalese and East Asian birds 0.67 million years ago. Caucasian birds diverged from European wrens 0.54 million years ago (Drovetski et al 2004). This possibly indicates cryptic speciation. Vocal differences are known to exist within birds in the Nearctic, and both differ from Old World birds, suggesting that at least three species may be involved (Kroodsmá et al 2013).

Six Atlantic island subspecies other than *hirtensis* are recognised: *indigenus* (Ireland, Inner Hebrides, Orkney, Scotland and England), *fridariensis* (Fair Isle, Scotland), *hebridensis* (Outer Hebrides), *zetlandicus* (Shetland, Scotland), *borealis* (Faeroes) and *islandicus* (Iceland) (Kroodsmá et al 2013). All are part of the European clade. In general, the island taxa have shorter and simpler songs than nominate *trogloodytes* (Cramp et al 1988). Shannon et al (2014) found that the Euro-



670-671 Hirta, St Kilda, Scotland, 26 August 2014 (*Peter de Vries*). St Kilda Wren *Troglodytes troglodytes hirtensis* breeds between the remains of the former village.





672-673 St Kilda Wren / St-Kildawinterkoning *Troglodytes troglodytes hirtensis*, Hirta, St Kilda, Scotland, 30 May 2014 (Vincent van der Spek)



pean haplotype was present in individuals from Shetland, Fair Isle and Faeroes, indicating that there is a continued gene flow from dispersing (northern) European birds. In birds from Iceland, Hebrides and St Kilda, islands that are all outside the migration routes, Kroodsmas et al (2014) found unique haplotypes. Since St Kilda is so close to the Outer Hebrides, the genetic differences (six base differences in the haplotypes) between *hirtensis* and *hebridensis* are striking (Shannon et al 2014). The birds on St Kilda are most closely related to the Icelandic subspecies *islandicus*. *Hirtensis* differs from the other wrens in the North East Atlantic by the heavy barring, the strong and long bill and obvious paler and greyer undersides (Seebohm 1884, McGowan et al 2003). The degree of colour saturation seems to correlate with the prevailing humidity (McGowan et al 2003).

Population of St Kilda Wren

The *hirtensis* population is considered more or less stable. Miles (2011) gave a complete list of all known surveys. The estimation of 230 breeding pairs in 1957 was probably still valid in 2002 (Murray 2002). Forrester et al (2007) gave a population estimate of 230-250 pairs. Kroodsmas et al (2013) estimated 200-300 pairs. In 1993, 113-117 singing birds were counted on Hirta alone (Vaughan & Love 1994). Musgrove et al (2013) gave a population of 140 pairs, noting that this was an known underestimation because Dun and Stac an Armin were not counted. An increase was noted within the former village on Hirta, from seven nests in 1984 to 25-27 singing males in 1992, but the increase was not noted elsewhere on the island. 10-25 pairs are estimated to reside on Dun. Maximum daytime counts of singing males on Boreray were 13 in 1999 and 13 on Soay in 1993. In 1957, three to four pairs were present on Stac an Armin but there are no recent records. No records are known from Stac Lee and Levenish. Only in 1931 and 1957, surveys have been done in one year on all four islands where *hirtensis* breeds (Miles 2011).

Endemic mammals

The wren is not the only endemic subspecies of the archipelago. St Kilda Field Mouse *Apodemus sylvaticus hirtensis* is, in spite of its vernacular name, a subspecies of Wood Mouse of which the ancestors are believed to have arrived with Norse settlers over 1000 years ago. The St Kilda House

Mouse *Mus musculus muralis* probably arrived with the Norsemen in the same period. As it was closely associated with humans, it became extinct soon after the last permanent inhabitants left the island. Although of domestic origin, the primitive and endemic Soay sheep are self-supplying and still roam around on both Hirta and Soay in good numbers (c 2000 were counted in 2010; <http://tinyurl.com/jfbm3s5>).

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