**Before the Hearings Panel**

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|---|---|
| In the Matter of | the Resource Management Act 1991 |
| And | |
| In the Matter of | the Proposed Marlborough Environment Plan |
| And | |
| In the Matter of | Hearing Block 2 (Topic 6 – Indigenous Biodiversity) |

# Ecologically significant marine sites:

# New Zealand King Shag breeding areas in Marlborough's Coastal Marine Area

**Prepared at the request of the Hearings Panel by**

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## Overview

On 20 February 2018, Pere Hawes, Council's Environmental Policy Manager made the following request by email on behalf of the Hearings Panel:

**"On behalf of the Panel, I am seeking confirmation (or otherwise) that the King Shag breeding habitat is known to be restricted to sites 2.11, 2.21, 3.3 and 7.9, in the 2011 Davidson Report. At para 14 of his evidence, Mr Schuckard also refers to Rahuinui Island. Has this site been recorded as breeding habitat in any subsequent reports of the ESMS Expert Panel?"**

## Response

To address the Panel's question, the following information was examined:

1. Davidson R. J.; Duffy C.A.J.; Gaze P.; Baxter, A.; DuFresne S.; Courtney S.; Hamill P. 2011. Ecologically significant marine sites in Marlborough, New Zealand. Co-ordinated by Davidson Environmental Limited for Marlborough District Council and Department of Conservation.

   [*Council Record: 12412399: Received by Council' Environment Committee 8 September 2011*].

2. Davidson, R. J.; Baxter, A. S.; Duffy, C. A. J.; Gaze, P.; du Fresne, S.; Courtney, S.; Brosnan, B. 2015. Reassessment of selected significant marine sites (2014-2015) and evaluation of protection requirements for significant sites with benthic values. Prepared by Davidson Environmental Limited for Marlborough District Council and Department of Conservation. Survey and monitoring report no. 824.

   [*Council Record 15235989: Received by Council' Environment Committee 26 November 2015*].

3. Davidson, R. J.1; Baxter, A. S.2; Duffy, C. A. J.; Brosnan, B.5; Gaze, P.4; du Fresne, S.; Courtney, S.2 2016. Peer review of selected significant marine sites surveyed in 2015-2016. Prepared by Davidson Environmental Limited for Marlborough District Council and Department of Conservation. Survey and monitoring report no. 848.

   [*Council Record 1738084 – Received by Council's Environment Committee 16 March 2017*].

4. Davidson, R. J.1; Baxter, A. S.2; Duffy, C. A. J.2; Brosnan, B.5; Gaze, P.4; du Fresne, S.; Courtney, S.2 2016. Peer review of selected significant marine sites surveyed in 2015-2016. Prepared by Davidson Environmental Limited for Marlborough District Council and Department of Conservation. Survey and monitoring report no. 848.

   [*Council Record 17208675 – Received by Council's Environment Committee 1 February 2018*].

5. Proposed Marlborough Environment Plan 2016. Volume 4 – Maps. Ecologically Significant Marine Sites overlay dated 28/04/2016. Notified 9 June 2016

In addition, a joint expert witness caucusing report before the Environment Court in October 2017 was consulted. Council was the Respondent and appointed Dr Paul Fisher as its expert ornithologist.

6. Fisher, PR; McClellan, RK; Taylor, PR. 2017. Joint Statement of Ornithological and Marine Fish Stock Experts dated 20 October 2017. ENV-2016-CHC-40 and 41. [*Council Record: 1837962].*

## Advice

1. The 2011 Ecologically Significant Marine Sites inventory report (ref #1) stated the following in relation to king shag (Leucocarbo carunculatus) on page 26:

   **"**The king shag breed at four main sites in the outer Sounds (White Rocks, Sentinel, North Trio and Duffer's Reef). A few birds have initiated breeding on Stewart Island to the east of D'Urville and on Rahuinui south of Greville Harbour. A few pairs bred successfully on the southern tip of Blumine Island in 2000 and 2001. In 2006 and 2007, 20-30 birds also attempted to establish on the western stack of the Twins north of Cooper Point in Queen Charlotte Sound. The four main sites are exposed rocky platforms with a southern aspect.

Historical accounts and guano deposits indicate these sites have been used for many years[282, 339]."

2. The following king shag breeding sites are recorded in the report as significant:

- Site 1.6 Rahuinui Island (p59) - [Map 3 – Volume 4 ESMS Overlay]

> **1.6 RAHUINUI ISLAND (Terrestrial)**
>
> Rahuinui Island is located along the south-western end of D'Urville Island, 7.5 km up from its southern tip. The island consists of three small land masses approximately 1 km due east of the D'Urville coast.
>
> **Assessment of ecological significance**
>
> King shags roost on the northern-most island and have been breeding there since 1996. Nearby islets are occasionally used by these birds, but less frequently than Rahuinui Island. King shags breed in relatively few places in Marlborough so a catastrophe at any of the breeding sites could threaten the whole population. All roosting and breeding sites are therefore considered significant.

- Site 2.11 Trio Islands (p71) - [Map 5 – Volume 4 ESMS Overlay]

> **2.11 TRIO ISLANDS (Terrestrial)**
>
> Trio Islands are a small group of islands approximately 4.5 km north-east of Clay Point and 8 km north-west of the Chetwode Islands. There is one main island with a smaller island 800m north-east, and another 550m south-west.
>
> **Assessment of ecological significance**
>
> North Trio Island supports one of the largest breeding colonies of king shag in Marlborough. A 2006 winter survey[340] recorded an average of 205 birds present. Middle Trio has a large colony of diving petrel, fairy prion and fluttering shearwater[30]. A relatively small number of breeding sooty shearwater use the island and the occasional flesh-footed shearwater has been seen[48]. Little penguins build nests throughout the island. South Trio regularly supports a colony of red-billed gulls.

- Site 2.14 Stewart Island (pp71-72) - [Map 4 – Volume 4 ESMS Overlay]

> **2.14 STEWART ISLAND (Terrestrial)**
>
> Stewart Island (Te Kuru Kuru) is a small island in outer Admiralty Bay, approximately 1 km south of D'Urville Peninsula and 6.7 km west of Clay Point. Stewart Island has a circumference of approximately 410m and land area of 0.7 ha.
>
> **Assessment of ecological significance**
>
> This island has become a regular roost for approximately 20-30 king shags with a few nests being established each season[339,340]. This is the smallest and most vulnerable of all king shag nesting sites in Marlborough because nests are near sea level and may be damaged or destroyed during storms. King shags breed at relatively few locations in Marlborough which makes all roosting and breeding sites very important.

- Site 2.21 Sentinel Rock (p73) - [Map 5 – Volume 4 ESMS Overlay]

### 2.21 SENTINEL ISLAND (Terrestrial)

Sentinel Rock is a small stack located approximately 2.8 km east off the eastern tip of the outer Chetwode Island (Te Kakaho). The rock is 0.49 ha with a circumference of approximately 290m.

#### Assessment of ecological significance

This small rock stack is one of the four most important roosting and breeding sites for king shag in Marlborough. A study between 1992 and 2002[339] recorded an average of 51 birds over winter. Because king shag breed and roost at relatively few sites, all sites are considered very important.

- Site 3.3 Duffers Reef (p84) - [Map 5 – Volume 4 ESMS Overlay]

### 3.3 DUFFERS REEF (Terrestrial)

Duffers Reef is a chain of small islets and stacks (approximately 10 in total) located at the north-west corner of Forsyth Island. The stacks are all less than one hectare in size and together extend approximately 1.2 km. In 1951 king shags were discovered nesting on the reef[282].Presently the most western rock stack in the chain is a nesting area for king shags. Up until 1964 the birds used the 2nd and 3rd most western rocks[339].

#### Assessment of ecological significance

Of the four main king shag breeding sites in the Marlborough Sounds, Duffers Reef has been the most important. In 1992, 42% of all the nests were on Duffers Reef. Duffers Reef and the Trios contain more than 60% of all the birds[339,340]. King shags breed at few locations in the study area. All sites where they roost and breed are therefore considered important.

- Site 4.26 Blumine Island (p100) - [Map 10 – Volume 4 ESMS Overlay]

### 4.26 BLUMINE ISLAND (Terrestrial)

Blumine Island is a large scenic reserve in the main Queen Charlotte Sound. It is approximately 12.5 km in circumference, covers 400 ha, and is 22 km by sea from Picton. King shags roost on the southern tip of the island (B.Cash, DOC, pers.comm.).

#### Assessment of ecological significance

Prior to 2006, this site was infrequently used by king shags. Presently approximately 18-20 king shags regularly roost at this site with up to 28 birds being recorded. All roosting sites for this rare species may eventually be used for breeding.

- Site 7.9 White Rocks (p117) - [Map 11 – Volume 4 ESMS Overlay]

> **7.9 WHITE ROCKS (Terrestrial)**
>
> White Rocks are located at the entrance of Queen Charlotte Sound 2 km north-west of Cape Koamaru. White Rocks are a series of very small, sparsely vegetated islands and rock stacks, extremely exposed to weather and sea.
>
> **Assessment of ecological significance**
>
> This is one of the largest and most important breeding colonies for king shag in Marlborough. During winter surveys in 1992-2002, there were between 120 and 160 birds present[339]. King shags breed at relatively few locations in Marlborough which makes all roosting and breeding sites very important.

3. The Expert Panel confirmed in 2015 (ref #2) the 2014-2015 monitoring results which identified an additional site in Port Gore was a king shag site, and confirmed it was ecologically significant. An aerial census survey had identified 53 birds. This information was picked up in the notified MEP and has been given the identifier Site 2.35 [Overlay Map 10 of Volume 4.]

> **4.2.1 Recommended new sites**
>
> **Hunia king shag site, Port Gore (new site)**
>
> The Hunia coast stretches around a promontory located Port Gore (Figure 1). The Hunia king shag colony is on the eastern side of the promontory north of Hunia (Plate 2). It is used by approximately 30 king shags, however, no breeding has yet been reported. A previous site in Port Gore (Taratara) was also utilised by approximately 28 birds (Bell 2010). This latter site appears to have been abandoned in favour of the Hunia site. Limited breeding was recorded at Taratara in 2006 (Bell 2006). It is recommended that the Hunia site be recognised as a king shag colony, however, it is noted that birds may abandon this site in the future.

4. There were no new king shag sites identified in the 2015-16 monitoring results so the Expert Panel report did not have to consider this (ref #3). The Hunia king shag site was revisited four times during 2016 as recorded in the 2015-2016 monitoring report, and occasional nests were observed on several occasions. The Expert Panel accepted this new data in its report, and agreed no change to the status of the site as ecologically significant needed to be made. The expert joint statement for ENV-2016-CHC-40 & 41 also agrees breeding occurs at this site.

5. The Expert Panel report that considered the 2016-17 monitoring results (ref #4) accepted a new king shag breeding colony in Tawhitinui Reach. This was confirmed as a breeding colony (page 19, ref #4). The site has been given the identifier 3.22. The Expert Panel report was received by Council's Environment Committee on 1 February 2018. The Environment Committee recommendations to full Council are due to be considered on 5 March 2018. Therefore, the site has not yet been incorporated into the MEP.

6. In summary, the ESMs overlay in Volume 4 MEP depict **eight (8)** ecologically significant marine sites in which king shag roost and **breed** [*emphasis added*]. Evidence for this has been set out above, taken from the site descriptions in Davidson et al. 2011 (ref #1).

7. These eight breeding sites range from western D'Urville Island/Rangitoto ki te Tonga, on islands off eastern D'Urville Island, Outer Pelorus/Te Hoiere, Port Gore/Te Anamahanga, and outer and inner Queen Charlotte Sound/Tōtaranui. The ninth site at Tawhitinui Reach, which is not currently in the MEP, is located in mid-Pelorus Sound.