

Supplementary material from:

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Supplementary Material 3.

Other adult male orca documented intentionally stranding at Punta Norte.

Case 1. B1/PNB1, “Bernardo” / “Bernd” Overview

An adult male orca, designated as B1/“Bernardo” by (López, 2000, 2021) and as PNB1/“Bernd” by Iñíguez (2001) and Iñíguez et al. (2005), is hereafter referred to here as “Bernado”. He was observed a number of times between 1975 and 1993, including intentionally stranding (Figure 3.1) and was already an adult male by this point. However early record keeping methods preclude us from making accurate assessments of the number of sightings /proof of presence. Furthermore, we have been able to source only two images which illustrate the wounds on his face (Figs 3.1-3.3 and see details below).

Bernardo was estimated to be 29 years old in 1975 (Hoelzel, 1991), making him ~40 years old in 1986 when the wounds were first observed and ~43 when first photographed with these in 1989 (Fig. 3.2).

By 1992 (i.e., when he was ~46 years old), similar wounds were documented on his right side (no photographs available). Bernardo was not observed after 1993 (Iñíguez, 2001, PNOR, unpublished data) and is now presumed dead. He was thought to be closely related to Mel (Hoelzel, 1989).

Wound Details

12 August 1986. First observation of *Open (raw)* wounds on his left maxilla and on the left mandible, anterior and slightly ventral to the eye. No photographs.

05 November 1989. First photograph of wounds. One wound on the left maxilla, two on the left mandible (Figure 3.2).

March 1992. Similar, but smaller wounds to those observed on 12 August 1989 were photographed on the right maxilla and right mandible during this period (Figs 3.3 & 3.4).

Between 1977-1982. Wounds were observed on the caudal peduncle of Bernado, but no photographs were taken (JCL, unpublished data).



Figure 3.1. The adult male Bernado (B1/PNB1) stranding at Punta Norte on 05 November 1989. He was older than Mel and presumed to be related to him, based on biochemical evidence (Hoelzel, 1989). This was the earliest photograph we could source which showed his wounds. See Fig. 3.2 for a close up. Photo: 19891105 © Juan Carlos Lopez.

In the Fig. 3.2 1989 image of Bernardo, the wounds were either *Open (raw)* or *Open (granulated)* on his left maxilla (white arrow) and possibly *Open (raw)* or *Open (granulated)* wounds on the left mandible (black arrows), along with an area of *Discoloured* epidermis (orange arrow). The hind flipper of an elephant seal pup can be seen protruding from his mouth

(yellow arrow). Photo: 19891105 © Juan Carlos Lopez.

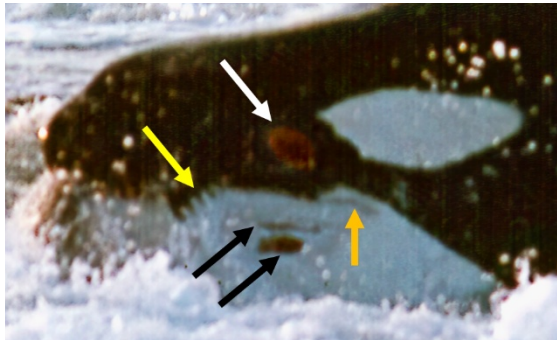


Figure 3.2. Close up of Figure 3.1, adjusted to for exposure. Although this was only a low-resolution image, the left eye patch shape confirms that it was not Mel (compare the front of the eye patch to that in Supplementary Material 2, Fig. 2.2). However, the wounds (black, white and orange arrows) were remarkably similar to those found on Mel at various times (e.g., Supplementary Material 2, Fig. 2.12a). Note the hind flipper of an elephant seal pup in his mouth (yellow arrow). Photo: 19891105 © Juan Carlos Lopez



Figure 3.3. The adult male orca Bernado intentionally stranding in 1992. The shape of his right eye patch allows confirmation that this is not Mel (see Supplementary Material 2, Fig. 2.3 for comparison). See Fig. 3.4 for a close up of this image. Photo: 1992 © Alberto Patrian.



Figure 3.4. An close up of Fig. 3.3, of Bernado) in 1992, adjusted for exposure. He had *Open (raw)* wounds on both the right maxilla and mandible. The wound size and placement are remarkably similar to those seen on Mel in 2007 (see Supplementary Material 2, Fig. 2.4b). Photo: Alberto M. Patrian.

Case 2. PTN- 006 “Pao”

Overview

A male orca, known as “Pao” (catalogue PTN-006) was born in 2005. He was first documented intentionally stranding to forage on 14 April 2014 (Table 3.1), *i.e.*, when he was nine years old. Pao has continued to intentionally strand as he has matured (e.g., see him at 11 years old when he was not yet sexually or physically mature, Fig. 3.5-3.7) and in 2026 as an adult (Fig. 3.8).

Wound Details

17 April 2016. We documented Pao with a *Discoloured* area (Figs 3.5 & 3.6) for the first time. The wound was situated in a similar position to those found on Mel (main text) and Bernardo (Figures 3.3 & 3.4). On the same day, Pao’s right side showed no wounds (Fig. 3.7).



Figure 3.5. On 17 April 2016, Pao (PTN-006) a then 11-year-old sub-adult male, was documented with a *Discoloured* area on his left mandible. See Figure 3.6 for a close up. Photo: 20160417-PTN-JMC-D1-055 © Juan M. Copello.



Figure 3.7. A close-up of Pao's right side on the same day as Fig. 3.6, showing that there was no *Discoloured* area or other wounds. This photo was taken ~30 mins prior to Fig. 3.6. Photo: 20160417-PTN-JMC-D1-008 © Juan M. Copello.



Figure 3.6. A close-up of the *Discoloured* area on the mandible of Pao. Although he has been documented every season since this photograph was taken, he has never been documented with any *Open* wounds. See Figure 3.5 for the original image. Photo: 20160417-PTN-JMC-D1-055 © Juan M. Copello.



Figure 3.8. Pao's intentionally stranding as an adult. During this attack he missed the sea lion pup (right foreground). Photo: 20260408-PTN-INV-D1-316 © Ingrid N. Visser.

Table 3.1. The two highest number of attacks by Pao, the dates (yyyymmdd format) they occurred and his age. The first day he was documented intentionally stranding was 14 April 2014.

<i>n</i> =	Date	Age (nearest year)
9	20160415	11
7	20260408	21

Case 3. PTN- 019 “Jaluel”

Overview

An adult male orca, known as “Jaluel” (catalogue PTN-019) was born circa 1998. He was first documented intentionally stranding to forage on 16 April 2012, i.e., when he was ~14 years old. He has continued to intentionally strand to forage and will also strand to ‘capture’ seaweed (e.g., see him at 26 years old, Fig. 3.8), but he is not a frequent strander (Table 3.2).

Wound Details

At no point have we documented Jaluel with any wounds, including any *Discoloured* areas.



Figure 3.8. Jaluel, intentionally stranding to ‘capture’ seaweed, in 2024 (i.e., when he was 26 years old). He has never been documented with any wounds or *Discoloured* areas. Photo: 20240407-PTN-INV-D2-995 © Ingrid N. Visser.

Table 3.2. The two highest number of attacks by Jaluel, the dates (yyyymmdd format) they occurred and his estimated age. The first day he was documented intentionally stranding was 16 April 2012.

<i>n</i> =	Date	Age (nearest year)
11	20120417	14
8	20240405	26

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