Photo-Identification Catalogue 2010

Killer whales of the Crozet Islands

Paul Tixier, Nicolas Gasco, Cécile Roche, Christophe Guinet

Centre d'Etudes Biologiques de Chizé - CNRS
Villiers en Bois
79360 Beauvoir sur Niort
© CEBC-CNRS 2010
Killer whales of the Crozet Islands
Austral and Antarctic French Territories

Photo-Identification Catalogue 2010

Paul Tixier, Nicolas Gasco, Cécile Roche, Christophe Guinet

Centre d’Etudes Biologiques de Chizé - CNRS
Villiers en Bois
79360 Beauvoir sur Niort
© CEBC-CNRS 2010
Preface

This catalogue presents all the killer whales that were photo-identified around the Crozet islands since 2003. It has been updated with the data collected in 2010. Pictures were taken and analyzed according to the photo-identification protocol developed in the NE Pacific by Bigg (1982). Priority was on left sides of the dorsal fin and saddle patch but for some individuals there were good pictures of the right side only. The edition of this catalogue was greatly based on catalogues produced by Bigg and colleagues (Bigg et al., 1987; Ford and Ellis, 1999; Ford et al., 2000) over the past 30 years.

Pictures were taken from two distinct platforms: the Possession Island coastline, by the people working at the base Alfred Faure, and the seven Patagonian toothfish longliners allowed to operate within the Crozet EEZ, by the fishery observers.

Two socially and morphologically distinct types of killer whales are observed in the Crozet waters: regular killer whales for which we have most of the data and the so called “Type-D” killer whales (Pitman et al., 2010) that have been sighted on few occasions only. The catalogue is then divided into two parts treating the two types of whales separately.

Temporal social analyses (Whitehead, 2008) run on the regularly encountered killer whales revealed a social structure based on permanent social units (mean size 3.5 ± 1.14 individuals (n=24) and casual acquaintances. In this catalogue, individuals are organized according to the social unit they belong to and social units are organized in pods when they share association indexes higher than 0.5 (Bigg et al, 1990).

This catalogue intends to assist in identification the different people encountering these whales.
Study Area

- Ile de la Possession
- Ile de l'Est
- Ile aux cochons
- Ilot des apôtres
- Ile des pingouins

**CROZET ISLANDS**

- Sightings from longliners
- Sightings from Possession Island
Part I: regularly encountered killer whales
### Key

<table>
<thead>
<tr>
<th>Code</th>
<th>Alpha-numeric individual code</th>
<th>Gender (when known)</th>
<th>Years of first and last observations</th>
<th>Social Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>C035</td>
<td>♂</td>
<td>1968-2009</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C037</td>
<td>♀</td>
<td>1977-2008</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C038</td>
<td>♀</td>
<td>1971-2009</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C116</td>
<td>♀</td>
<td>2003-2009</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Year of first observation = year of birth

### Possession

- C038 is missing since April 2009
- C037 is missing since November 2008

(see p. 7)

---

**Social Relationship**

- **Association Index** > 0.5
- 0.3 < Association Index < 0.5

* Association Index = proportion of sightings in which 2 individuals are associated out of the total number of their respective sightings.
C128 has a little notch on the lower part of the backside of dorsal fin.
None of the individuals of this unit has been observed since 2005
C011 was recently sighted from longliners both in the Crozet and Kerguelen offshore waters.
Possession Longliners
Possession Longliners

Crozet killer whales
C009 is a sprouter, his fin is growing since 2008.
Possession Longliners

C016 is missing since November 2009
The C015 and C016 units belong to the same pod. Together, they interacted with more than 47% of all longlines hauled out in presence of killer whales.
C025, C119, C127 and C012 have been sighted off Marion Is. (Reisinger et al., 2009)

C188 was a few weeks old on its first sighting in April 2009

C131, C132, C137, C012 and C133 were sighted in the Kerguelen EEZ in 2006 and were then re-sighted in the Crozet EEZ in 2007.
C132 is missing since November 2009. In February 2010, C131 was sighted alone on few occasions and then being associated with the C015 and C027 units. In March, it was closely associated with the female C018.

C187 is born between February 16th and 17th 2009.
C087’s fin has changed tremendously over the past 3 years with multiple notches appearing on the back side of its dorsal fin.

C174 is known to be a female since pictures of her breaching were taken in 2007.
Longliners

C082 is missing since 2007

C081  ♀  1997-2010
C083  2003-2010
C154  2007-2010
C082  1997-2007

Crozet killer whales
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C124</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C151</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C129</td>
<td>♂</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

C129 is missing since 2007
Longliners

Crozet killer whales

(See p. 25)
These whales have not been sighted since 2003. C101 was associated to them in 2003 and is the only whale re-sighted since then. It was in 2008, she was travelling with a juvenile (C162) and a calf (C163).
C193 ♀

2010-2010

C193 appears to have a deformity on his spinal column.
This unit was sighted on two occasions only in 2009.
C134 has been sighted off Marion Island (Reisinger et al., 2009)
Longliners

C189 ♀ 2009-2010

C190 2009-2010

C191 2009-2010

C192 2009-2010

Crozet killer whales
These whales were photographed only once in the Crozet waters, they interacted with longlines and were associated to the C015 pod. We are waiting for additional sightings before we name them.
Longliners

Crozet killer whales
Part II: « Type D » killer whales
Type D killer whales were sighted for the first time in the Crozet waters in 2003. Since then they were encountered and photographed on 16 occasions around the islands (last sighting was on June 3rd 2010). They do interact with longlines as well but are usually observed in very open waters and were never sighted in inshore waters. They never associated with the regularly encountered killer whales and have distinct morphological features such reduced eye patches and bulbous head.
<table>
<thead>
<tr>
<th>C105</th>
<th>C178</th>
<th>C117</th>
<th>C175</th>
<th>C097</th>
<th>C179</th>
</tr>
</thead>
<tbody>
<tr>
<td>♂</td>
<td></td>
<td></td>
<td>♀</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2003-2009

Longliners

♂

♀

Crozet killer whales
Crozet killer whales

Longliners

C182  2009-2009  

C183  2009-2009
References


We wish to thank all photographers involved in this study, whether they are fishery observers on longliners or field workers on the Possession Is.

We are grateful to all the people that have inspired this work especially the following: Mike Bigg, Graeme Ellis, John Ford, Kenneth Balcomb, Craig Matkin, Eva Saulitis, Lance Barrett Lennard, Paul Spong and Helena Symonds.

We are also thankful to the following partners and organizations that have contributed to the study of the Crozet killer whale population for many years

Centre National de la Recherche scientifique

Centre d’Etudes Biologiques de Chizé

Muséum National d'Histoire Naturelle de Paris

Terres Australes et Antarctiques Françaises

Institut Paul Emile Victor

Armements de pêche de la Réunion
Photographers

AUBERT Jean Luc; BARRETT-LENNARD Lance; BEILLOEIL; BELBEYC'H Bruno; BERTHET Philippe; BERTRAND Geoffrey; BLANCHARD Pierrick; BOITEAU Christophe; BONNET Joël; BOST Charles-André; BURLE Marie-Hélène; CARCAILLET Christopher; CARDOT Gilles; CHEVRIER Claude; DE STEPHANIS Renaud; DERVAUX Antoine; DESMARET Rolland; DESPIN Bernard; DONDELINGER Caroline; DOREMUS Ghislain; DUFRENE Rémy; FERNANDEZ Eric; FOURNIER Jean-Charles; GASCO Nicolas; GAUTHIER-CLERC Michel; GOUEDARD Yvon; GUINET Christophe; HANDRICH Yves; HANUISE Nicolas; HOARAU Eric; LANGUENOU Roger; LE CORRE Yann; LEGRAND Jérôme; LEMARCHAN Christian; LEQUETTE Benoît; LERIDON Jean; LEROUX Eric; LESCAROUX Jean-Michel; MAISON Jérôme; MANGIN Stéphane; MANILEVE Patrick; MARECHAL Pierre; MELLEE Jean-Luc; MOURIES Jacques; NOORKHAN Alain; NOYAN Patrick; PAULIN Rémy; PAWLOWSKI Frédéric; PERROT Yohann; PETER Jean; PRUDOR Aurélien; RIDOUX Vincent; RINGOT Frédéric; SCHWEBEL Luc; SORIN Dominique; STENBERGER Ludovic; TIXIER Paul; VERLAND Henri; VERMANDE Hugues; VILLEMIN Catherine; WEIMERSKIRCH Henri