

Photo-identification of gray whales Sakhalin Island, Russia in 2002-04

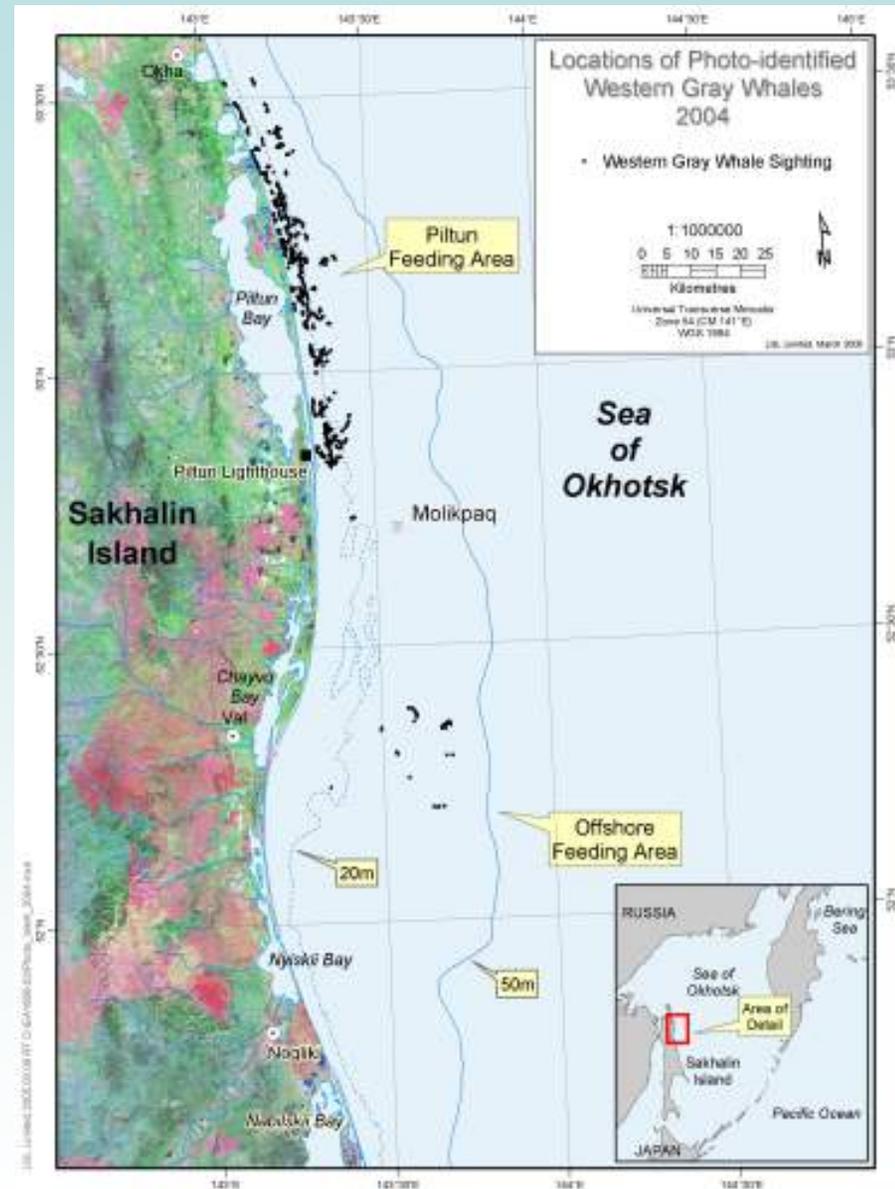
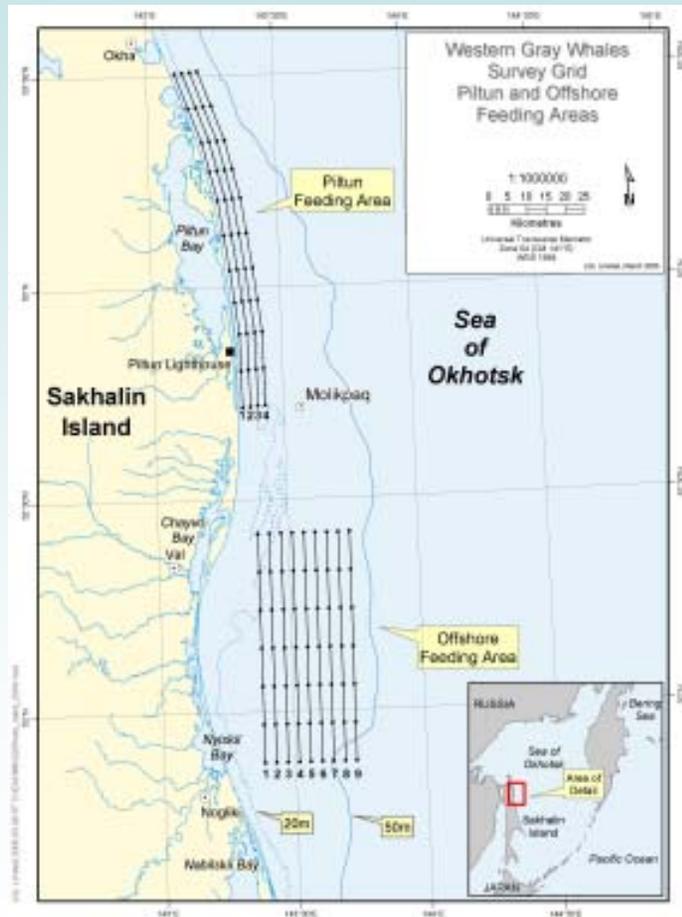
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The locality of photo-ID gray whales in the shelf of Sakhalin Island in 2004

The photo-identification work was taken to same regions, where aerial, vessel-based surveys and benthos sampling



Catalogue and database

RS



LS



DF



VF



Standard photographic matching procedures for pattern-based matching of sides and flukes were followed as described by International Whaling Commission Special Issue No. 12 (Hammond et al. 1990). This process has since been refined by others working on gray and other large whales (Weller et al. 2003, Calambokidis et al. 2002). The following aspects of the whale's body were selected to create the catalog (in order of priority): right (RS) and left (LS) sides of the body, ventral (VF), and dorsal (DF) surfaces of the fluke.

Result: Individual recognition and resighting

After expedition of 2002 has been created the catalogue where we could describe 46 whales.

In 2003 we could describe 82 whales from which 50 were new.

2004 was productive by quantity of the re-sighting and identified animals. At processing 9647 pictures it was possible to determine 96 whales. From them 38 individuals have been met in 2002, 33 whales have been described in 2003 and 25 whales are determined as new.

Table 1. Numbers of whales identified in 2002 – 2004

Year	Number of whales (total for year)	From 2002	From 2003	Number of new whales for year	Number of whales from previous years not sighted in current year	Number of whales in catalog
A	B=C+D+E	C	D	E	F	G=B+F
2002	46			46		46
2003	82	32		50	14	96
2004	96	38	33	25	25	121

The movement of grey whales within the limits of the "Piltun" and "Offshore" feeding areas, and also between these areas

Table 2. Movement of whales between feeding areas in each of three years from 2002 to 2004

Year	Number of individual whales sighted in "Piltun" area	Number of individual whales sighted in "Offshore" area	Number of individual whales sighted in 2 areas
2002	13	35	1
2003	51	34	4
2004	95	8	6



The analysis of the three seasons testifies to intraannual and interannual movement of grey whales within the limits of the "Piltun" and "Offshore" feeding areas, and also between these areas (tab. 2). The information on movement of whales is based on repeated encounters with 5 identified individuals within a season

Group size

Table 3. The Gray whale group size and encounter rates in the north-eastern shelf of Sakhalin Island (2003-2004). Numbers reflect groups of whales photographed from the Zodiak and identified in laboratory.

Number whales in group	# sightings in 2003 (120)	% encountered in 2003	# sightings in 2004 (108)	% encountered in 2004
1	58	48.33	55	50.93
2	38	31.66	28	25.93
3	18	15	14	12.96
4	4	3.33	7	6.48
5	2	1.66	1	0.93
6	0	0	1	0.93
7	0	0	1	0.93
8	0	0	1	0.93

Mother- calf pairs

Table 4. Cow-calf pairs identified between 2002 and 2004

Year	All whales identified for season	Cow-calf pair identified
2002	46	3
2003	82	9
2004	96	2

The low number pair 2004 is thought to be due to the late start (September) of the photo-ID work, when many cow-calf pairs would have separated.

The physical condition of body

A hierarchal system of categorizing the levels of emaciation of the whales was developed based upon the original methods outlined by Weller et. al (2001) from slightly thin whales of the Class 1 to Class 4. Zero Class – normal condition of body



Direction
moving



Body weight – Physical condition

Table 5. Numbers of gray whales and associated body condition (BC) classes observed in 2003 and 2004

BC classes	Number of whales in each BC class in 2003	% of whales in each BC class in 2003	Number of whales in each BC class in 2004	% of whales in each BC class in 2004
0	60	74,1	70	72,9
1	6	7,4	15	15,6
2	12	14,8	8	8,3
3	2	2,5	3	3,1
4	1	1,2	-	-

Thin whales (class II or higher) in 2003 made up 18.52%(15 from 81) of the total number of individual considered (with 9 mothers and 6 whales – class 1).

Thin animals (class II and higher) identified in 2004 made up 11,46% (11 from 96) of the total number of individuals identified (with 2 mothers and 15 whales - class 1).

Identified whales that changed their body condition (BC) classes from 2003 to 2004

Table 6. Inter-year comparison of the status of cows and calves from 2003 sighted in 2004

Mother calf	Number of whales in 2003	Number of whales in 2003 with substandard BC	Number of whales in 2004 from 2003	Changes in BC identified from 2003 as of 2004	
				BC improvement	BC deterioration
Mother in 2003	9	9	7	7	0
Calf 2003	9	0	6	0	0

Table 7. Inter-year comparison of body condition of whales sighted in 2003 and 2004.

Description of body physical condition (BC)	Whales
Poor, but condition improved	12
Normal, but condition deteriorated	7
Poor and condition did not change	1

The skin sloughing

In 2003, several whales were observed with significant skin sloughing. Observation of the same individuals in 2004 leads us to conclude that sloughing in 2003 was not an indicator of future problems for the whales. In 2004, their skin looked quite healthy and there were no noticeable patterns in physical condition



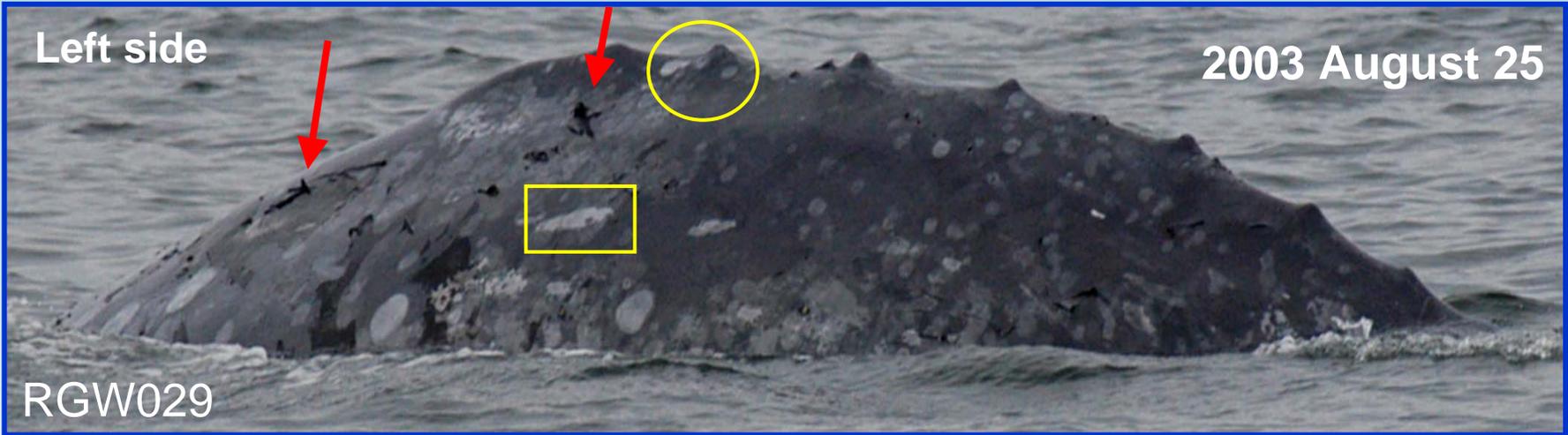
The skin sloughing

The observed sloughing pattern, that skin is quickly restored after sloughing without seen pathological consequences on their surface for some days.



The skin sloughing

Next days



Conclusion

- ◆ A total of 121 whales have been identified over 3 years (in two of the three years the survey started late in the season).
- ◆ The number of skinny whales has decreased since 2000 and includes females with calves.
- ◆ In 2004 a total of 11 skinny whales (out of 96) were identified of which 2 were mother with calves.
- ◆ Whales move between the two known feeding areas
- ◆ Mother with calves separate starting in late August & September
- ◆ A total of 2 mother/calf pairs were observed in 2004. This low number is thought to be due to the late start (September) of the photo-ID work



Thanks

Спасибо

