

# مەنە ، مەرە م

ΡΟΛΛΓ 2009Γ ἀςͻͱΓν ΥͻͱΓν ΥνγνυώνΟύσκυς αρίες ύσηνου σαρς υαιαρικάς ν>νργμακις ρίτοις το γιατικός ακαιος αριστικός αριστικός αριστικός δργγακιστικός αιστικός αροματικός αροματικός δργγακιστικός αιστικός αροματικός δργγακιστικός αιστικός δργγακιστικός δργγγακιστικός δργγακιστικός δργγακιστικός δργγακιστικός δργγακιστικός δργγακιστικός δργγγακιστικός δργγακιστικός δργγακιστικός δργγγακιστικός δργγακιστικός δργγγακιστικός δργγγακιστικός δργγακιστικός δργγγακιστικός δργγγατικός δργγγατικός δργγγατικός δργγγατικός δργγγατικός δργγγατικός δργγγατικός δργγγατικός δργγγατικός δργγγγατικός δργγγγατικός δργγγατικός δργγγατικός δργγγγατικός δργγγγο δργγγγατικός δργγγγατικός δργγγγο δργγγγιατικός δργγγο



Whale frozen in to the ice منجا∠ح⊀ه⊲۲ ⊲د⊇



*Editors:* Stephen Petersen Steve Ferguson

*Contributors:* Cory Matthews Stephen Petersen

*Photo contributors* Logan Paul Tara Bortoluzzi

Contact : oca@dfo-mpo.gc.ca

# Repulse Bay Killer Whale

In mid-October 2009 a killer whale washed up on shore near the community of Repulse Bay. Government of Nunavut Conservation Officer Logan Paul and several community members were able to locate and collect samples from the whale. The samples were then sent to Winnipeg to be archived and analysed. We would like to thank all the people involved in collecting samples for our research program.

This issue of the Aarluk News will explain what information and samples we can collect from stranded whales and present the results of our laboratory analyses of the Repulse Bay whale. If you see a dead killer whale please report it to your local HTO, fisheries or conservation officer, and to us at OCA@dfo-mpo.gc.ca.

### **Tissue Samples**

Samples of skin, blubber, muscle, and organs can tell us many things about killer whales. For example, we can learn: what it was eating; what sex it was; who it was related to;

if it was in good health; and which chemicals it may have been exposed to. Our research is still under way but from the genetics this whale was a female, and she did not have any of the diseases that are regularly tested for. Preliminary tissue analyses indicate that she likely fed more on bowhead whales than either narwhal or beluga whales.

Sample	Analysis	Information learned
৽₽₽₽₽₽₽	᠋᠄ᡃ᠋᠔᠋ᠵ᠅᠘	᠑ᠻᢣ᠍᠍᠍᠋᠆ᢄᢣᡩᢦ᠔᠄ᢦ᠈ᢣᡏᠫᢗ
Teeth	Yearly line count	Age of whale
PJN	᠍ᢦ᠋ᡃ᠋ᡪᡩ᠋᠍ᡁᢕ᠋᠋ᡄ ᠘ᡄ᠙ᡃᡄ᠋᠊᠋᠋᠋᠊᠋ᠵᢞ᠋ᡶ	ک⊂∿ل ک'∸≤<
Teeth	Trace elements	What the whale was eating over its life
РJП	٩ <i></i> ٵ٥٠٤٩٩٩٩	᠙ᡝ᠋ᠣ᠋ᡃ᠂ᡏ᠋ᠴᢩᡃ᠂ᠳ᠋᠋᠋ᡊ᠊᠋᠋᠋ᢐᡄᢗᠣ᠋᠋ᠮ᠘᠋᠋᠋᠅᠋ᡁᢑ
Muscle and Skin	Stable Isotopes	General information about what the whale was eating weeks to months before its death
_ە₽∿U ⊲Г∿U_	ᡃ᠋ᡊᢋ᠘᠋ᢩ᠕ᢩᢝ᠋ᡗᡃ᠋᠘ᢞ᠋᠋ᡶ᠅᠋᠘᠅ ᠆ᢗ᠅ᡗ᠅᠘ᡠᢩ᠂᠊ᠣ᠅᠘	ᢗ᠘᠋᠋ᢩ᠘ᠳ᠋ᡠ᠆᠋᠋᠋᠋ᢆᡃ᠋ᡄ᠆᠘ᢣ᠋᠘᠈ᢣ᠋ᢕ᠋᠋᠋ᢣ᠋ᢣ᠋ ᡔ᠋᠋᠋᠋ᠺ᠋᠋᠋᠋᠋᠋᠋᠋᠋᠖᠖᠘ᡷ᠋ᡶ᠋᠈᠋ᡶ᠋᠋᠋᠋᠋ᡕ᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆
Blubber	Fatty acids	Specific information about what the whale was eating
₽₽₽₽	⊳₅⊳∠∆⊂	⊃٩٢⊳᠘᠈ᢣ᠘᠈ᢣᡄᡄᡄᢅᡄ᠂ᡬᠴ᠋᠉᠂᠙ᢣᠣ᠋᠉᠂ᠳᡅ᠈ᡃᠥᡄᠧᢑᡶ᠅ᡁ᠉
Skin and Muscle	Genetic sex	Was the whale a male or female
حا∿۹م ب۲∿ا	᠂ᡃᠣ᠘᠊ᠫᠣ᠋᠆᠈ᡃ	ᢀ᠋ᡶᢗ᠌᠌ᢄ᠂᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆
Skin and Muscle	Genetics	How is this whale related to other killer whales
حا∿۹م ا∿۲	ڡ٩ڞڶ٩٢٤٤ڡ	٥٤ ٩٤ ٩٤ ٩٤ ٩٤ ٩٤ ٩٤ ٩٤ ٩٤ ٩٤ ٩٤ ٩٤ ٩٤ ٩٤
Blood	Disease	What diseases and parasites did the whale have
⊲⊳∿∪	؇۫ <sup>ٟ</sup> ڡ؇ؚٮڵ؞؋	᠋᠄ᡃᠣ᠋᠋᠘ᠫ᠋ᡔ᠋ᢛ᠂᠋ᠯᢩ᠆ᠳ᠋᠋ᡏ᠖᠋ᡃᠳ᠋ᡗᢑ᠖᠋᠕᠂᠋ᡗ᠖᠋᠂ᠳ᠋
Liver, Kidney	Contaminants	what pollution was the whale exposed to
∩ എം, ⊂ം⊃ം	᠂᠘ᢣᢛ᠋᠆ᡁ	᠈ᠳ᠘᠊ᠫ᠊᠋᠋ᠴ᠖᠆ᡏᠫᢛᢕᠥ᠂᠋᠋ᠺᠫᢛᢕᠵ᠘᠋᠋᠋᠆ᡘᢑ᠖ᡷᡆ᠅ᠴ᠉
Reproductive tract	Corpora lutea counts	How many calves did a female have
᠄ᠻ᠋᠋ᠫ᠅ᢉᢂ᠋ᡔ᠙	᠄᠋᠋ᡏ᠋ᠫ᠋᠋᠋᠋᠋᠋᠋᠋᠋ᡥᢕ᠋᠌ ᡄ᠋᠋᠋᠋᠋᠋᠋᠋᠋ᡪᢛᢗ᠌᠌᠌ᡔ᠋᠋ᡨᠧ	ۥۥ،،،،،،،،،،،،،،،،،،،،،،،،،،،،،،،،،،،
Stomach	Contents	What was the whale's last meal
⊲5P< <p>25°</p>	۵ےر۳۲	᠙ᡔ᠋᠋ᡗᡅ᠂ᡬᡝ᠋ᠴᡃ᠈᠋᠙ᡃ᠋ᡁᡃᡄ᠋᠋᠋ᠮ᠆ᡦ᠇᠋ᡘ᠆ᡦ᠇ᠺᢩ᠉ᡦ᠋᠋᠋ᡘ
Lung, Heart, intestine	Parasite counts	What parasites did it carry and how many
>≪ <sup>ъ</sup> Ⴑ, ϷւLՈ <sup>ъ</sup> Ⴑ, Ճգ_⊃ <sup>֊</sup> Րՙ	ſd∧ſ₽ſĿĿĹſŀ	٬ه۵۵٬۵۰۰ ، ۱۹۷٬۶٬۹۰۵ ، ۱۹۹۵ ، ۱۹۷۵، ۱۹۵۰

### Teeth

A tooth from a killer whale can tell us about the whale's ag and also what it was eating in the past and where it may ha travelled. This is because each year a new layer is added to the whale's teeth and each layer is made up of elements fro its food, such as carbon and nitrogen.

Counting the number of layers will tell the whale's age, an studying the elements in every layer will tell us what the whale ate over its lifetime. This whale had 30 visible grow layers in her teeth indicating she was at least 30 yrs old. The elements in this whale's tooth were similar across mos growth layers, suggesting little change in her diet over her life.



σر، ٥٠٢ دار المراجعة: ٢٠ ما دار مراجعة: ٢٠ ما دار المراجعة: ٢٠ ᠊᠋᠋ᡦᠻᡃ᠋᠋ᡰ᠋ᠴᡏᡝ᠋ᡰᡄᢉ᠋᠂ᠳᠺᢍ᠋ᡰ᠕᠋᠋᠆ᡧ᠘᠆ᡱ᠈᠆ᡠᡄ᠋᠆ᠴ᠈᠆ᠴ᠈᠆ᠴ᠈᠆ᠴ᠈᠆ᠴ᠈᠆᠋ᠴ᠈᠆᠋ᠴ

http://www.umanitoba.ca/faculties/science/zoology/faculty/ferguson/OCA/OCA.htm

## ͼϷϷϞͻϽͺϲ

۵-۱۹٬۵۶ مد در ۱۹۹۵ ک۹۵۰ کا ۲۰۰ مد مانه کا ۲۰۰ کا in)、 << 2 C いしてい c P いっかい c P い c ∆°o\_D<sup>L</sup>L<sup>C</sup>.

የሀበኈቦና			
ge,	᠙᠋᠕᠃ᢣ᠂ᢅ᠖ᡔᢣᢆᡟᠺ᠒ᢞᡆ᠋ᡄᠺᡄᠺ᠋		
ave	᠔᠋᠋ᠻᢂ᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆		
)	⊲ <sup>ر</sup> لے مـا <sup>مر</sup> ل⊳۲L°ح۲L∿ڶ٩. ⊳م		
om	$\wedge$ ' $\prec$ $\cap$ 'J $\triangleleft$ 'ĠJCL $\triangleleft$ ', PJ $\cap$ UC		
	ᢠᡃ᠋ᡥᡄ᠘᠆ᡎᢓ᠆ᡆ᠙᠘᠆᠘᠘᠆᠘᠘᠘᠘᠘᠘᠘᠘᠘᠘᠘᠘᠘᠘᠘᠘᠘᠘᠘᠘᠘᠘᠘᠘᠘᠘᠘᠘᠘᠘᠘		
d	᠋᠋᠋᠋ᡃᢐᡄ᠋ᡄ᠊᠆᠋᠆᠆᠂᠆᠂᠆᠃᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆᠆		
u	دئ <sup>ن</sup> ے Ld⊲ <⊳ طuu کے کے Ld⊲ دی		
rth			
	᠌ᢩᡄ᠋ᢣ᠋᠋᠋᠋᠋᠅ᢗ᠋ᢩᢄ᠄᠋ᡃ᠘ᡄ᠋ᡅᢩ᠆ᡆ᠋᠋᠋᠃᠆᠃᠖᠘᠆᠆᠃		
st	ᠫᡄᠴᢩ᠆ᢄ᠙᠐ᠰ᠖᠆ᢘ᠆ᢐᢑ᠕ᡶ᠘ᠴ᠂᠋ᢐᢄᡔᢋ᠖᠘ᢕ		
	ۥ؈ڗٮٛ؈؞ڔ؞ڡڮٵٵٵڔ؋؇ڝ؞		
	﴿ عَنْ عَاهُ حَمَدُ لَهُ وَحَوْدَكُ لَهُ لَهُ لَحَصَّلُهُ وَاللَّهُ فَاللَّهُ اللَّهُ وَاللَّهُ وَاللَّهُ وَال		
	30ᠳ ᢗᡆᡃ᠋ᢣ᠋᠋ᡔ᠋ᡃ᠕᠋᠋᠋ᠵ᠋ᡃ᠆᠆ᡘ᠋᠋ᡝ᠆᠆᠋ᡗ		
	ᢗ᠔᠋ᡅᢣᢣ᠋ᡃᢛ ᠙᠋᠕ᡣ᠋ᡥᡊ᠊᠋ᠴ ᢗᢆ᠋ᡫᠳ ᢃ᠐ᠳᡃ		
	᠔᠋᠋᠋᠋₽₽᠖ᡃᢧ᠘ᢟ᠋᠕᠖ᡔᢄᡄᢛ᠄᠕᠄ᠵ᠋		
	᠋᠋ᡏ᠈ᢣ᠘ᢩᡄ᠘᠆᠘ᢣᡑ᠋᠃᠋ᡗ᠂ᠺᡔᡪ᠆᠆᠆᠆᠆		
	ለペ՟ϲላረLσኈዮና, የረላው Δᡄኈዮ゚ው		
	᠕᠋ᡃᡬ᠍᠋᠋᠆᠆ᡧ᠈᠆ᡥᢄ᠋ᡃᢑ᠘ᡃ᠘᠘᠆᠘᠉᠆ᡧ		
	᠆᠋᠄᠙ᢉ᠋᠋᠋᠋᠋᠋᠋ᠳᡄ᠖᠘ᢣᢣ᠋ᢄ᠋ᠴ᠘ᡄ᠉ᢕᡄ		

ᡣᡠᡃ ᢗᠲ᠋᠋ᠴ᠋᠄᠘ᢣ᠋ᡏᢂᢗᡄ᠋ᡅᢣᡃᢨᠣ)᠕ᡃ᠋᠋᠋᠘᠆᠘᠆ᡣ᠖᠘ᡪᡄᢧ᠕᠋᠄ᡗ

We can learn a lot about the age and health of a whale from body measurements. For example, a big whale with a tall dorsal fin indicates that the animal is a mature male. This whale was 5.7 m (18 ft 9 in) long, its dorsal fin was 69 cm (27 in) tall, and its front fins were 113 cm (3 ft 8 in) long this was an adult.

#### (http://www.umanitoba.ca/faculties/science/zoology/faculty/ferguson/OCA/OCA.htm)





Digging the whale out of the ice ۲۰۵۰ کن<sup>۲</sup>۵۰ ک<sup>۲</sup>۵۰ ک

We can learn many things about killer whales and about the Arctic by taking advantage of opportunities such as when a whale dies and washes on shore. However, we need your help. If you see a dead whale please take photographs and record the date and location. If it is safe to do so, collect some tissue which can be kept frozen. Contact your local HTO, GN conservation officer, DFO officer, or us so we can try to organize people to help sample the whale.

We would also like to thank all the people who reported killer whales in 2010. All sightings we received can now be seen on our website.

(http://www.umanitoba.ca/faculties/science/zoology/faculty/ferguson/OCA/OCA.htm)

