



Prenatal Development of the Bowhead Whale

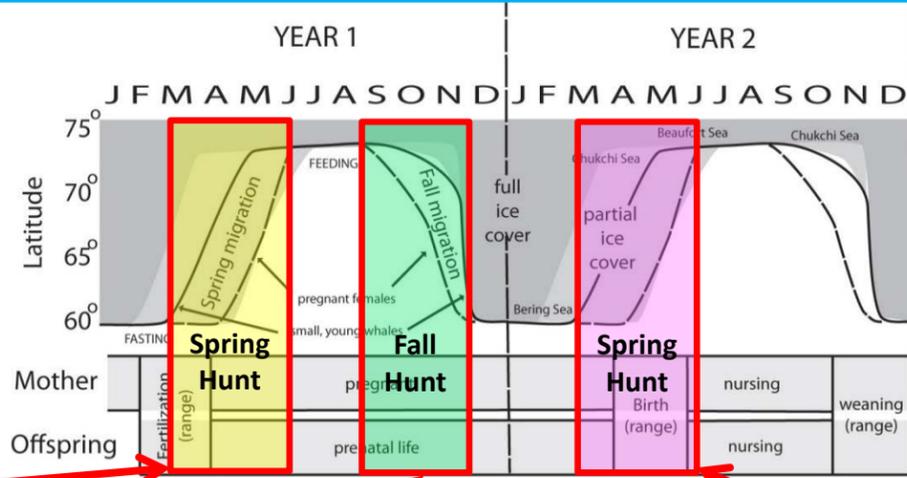


Hans Thewissen¹, Craig George², Robert Suydam², Gay Sheffield³, Raphaela Stimmelmayer²

¹Northeast Ohio Medical University, ²North Slope Borough Department of Wildlife Management, ³Marine Advisory Program, UAF Alaska Sea Grant

Bowhead whales become pregnant from March to April, sometimes during migration from the Bering to the Beaufort Sea.

The gestation period is approximately 13-14 months, with calves being born between April and June of the following year. Calves are nursed for approximately nine months. Females spend one to two years



resting before they become pregnant again.

Below are some pictures and data collected by the NSB Wildlife Management during the bowhead subsistence harvest by Alaskan Natives. **Note:** Size ranges of fetuses are from all actual measured lengths. ID number and total whale length is included on each photo.

SMALL FETUSES from SPRING HUNT: 8-61 cm

99B7F
8.9 cm
3.5"



9 weeks gestation: No eye pigmentation, eyelids fused, skin transparent, 3rd finger longest, tail round on cross-section



99B6F
16.5 cm
6.5"

11 weeks gestation: Eye pigmented, eyelids fused, skin translucent, tooth buds present, 2nd and 3rd fingers same length, diamond shaped fluke, lower lip slightly curved



00B3F
40.4 cm
15.9"

Palate with tooth buds (dark circles)

MEDIUM FETUSES from FALL HUNT : 84-322 cm

7-9 months gestation: Skin mottled gray, slight chin patch, eyelids open, no teeth, no baleen yet but baleen ridges, some subcutaneous (body) fat, triangular fluke, lower lip more curved



09KK1F
163 cm
5'4"



07B16F
160 cm
5'3"

Before baleen forms in the fetus, two smooth, white ridges form on the palate, just on the inside of where the teeth buds were located.



07B16F
160 cm
5'3"

Palate with baleen ridges, no tooth buds

FULL-TERM FETUSES from SPRING HUNT: 365-458 cm

13-14 months gestation: Skin mottled black, white chin patch, very short baleen, some subcutaneous (body) fat, triangular fluke, hairs on rostrum, chin and around blowhole, lower lip curved as in adult



89B2F
401 cm
13'2"



07B9F
440 cm
14'5"

Hairs on chin patch

Triangular fluke



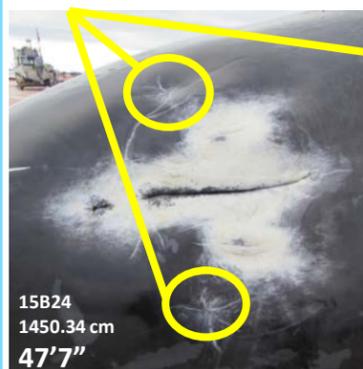
16B5F
432 cm
14'2"

Palate with baleen about 4 inches long

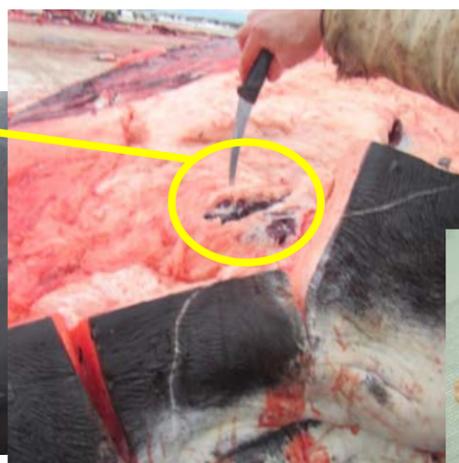
ADULT BOWHEAD

All mammals form a hind limb (rear leg) before birth. In bowhead fetuses, there are internal pieces of cartilage that are the skeleton of the hind limb. Eventually, these become bone, and are present throughout their adult life. Occasionally, you see a scar on the surface of an adult whale (such as the one on the left below) which indicates the position of the underlying hind limb.

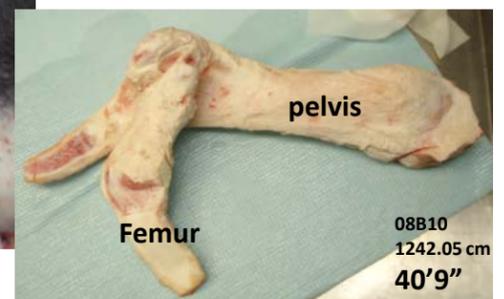
External scar



15B24
1450.34 cm
47'7"



Internally, there are usually two bones in bowhead whales, the pelvis and the femur, plus an occasional tibia.



pelvis

Femur

08B10
1242.05 cm
40'9"

14 weeks gestation: Eye pigmented, eyelids fused, skin pigmented, remnants of 40+ teeth, 2nd finger longest, triangular fluke, lower lip slightly curved



13B1F
27.4 cm
10.8"



Bone - purple
Cartilage - green

Embryonic pelvis and femur - internal only

Pelvis and femur remnant in adult female

Acknowledgements to the Alaska Eskimo Whaling Commission, Barrow Whaling Captains' Association, Gambell Whaling Captains' Association, Kaktovik Whaling Captains' Association and Savoonga Whaling Captains' Association for allowing these fetuses to be studied. We could not do this work without you!

This study is funded by qualified outer continental shelf oil and gas revenues by the Coastal Impact Assistance Program, Fish and Wildlife Service, U.S. Department of Interior, as well as the North Slope Borough.