

Crawford, J. A., W. Neakok, J. Garlich-Miller, M. A. Nelson, and L. T. Quakenbush. 2012. Results from village-based walrus studies in Alaska, 2011. Alaska Marine Science Symposium, 16–20 January, Anchorage, AK. (Abstract and poster).

### **Results from village-based walrus studies in Alaska, 2011**

Justin A. Crawford<sup>1\*</sup>, Willard Neakok<sup>2</sup>, Mark A. Nelson<sup>1</sup>, Joel Garlich-Miller<sup>3</sup>, and Lori Quakenbush<sup>1</sup>

<sup>1</sup> Alaska Department of Fish and Game, Fairbanks, Alaska 99701;

<sup>2</sup> Eskimo Walrus Commission and resident of Point Lay, Alaska;

<sup>3</sup> U.S. Fish and Wildlife Service, Anchorage, Alaska 99503

\* Correspondence: Justin.Crawford@alaska.gov

Pacific walrus winter in the Bering Sea, but females with young summer in the Chukchi Sea resting on sea ice; most adult males remain in the Bering Sea where they rest on land. The rapid retreat of sea ice is changing summer walrus habitat in the Chukchi Sea and may be changing summer distributions and haulout behavior, requiring that walrus haul out on land instead of ice. The purpose of this project is to work with subsistence walrus hunters to conduct observations at terrestrial haulouts accessible from coastal communities, deploy satellite-linked tags to monitor movements and feeding behavior, and to document local knowledge regarding walrus land haulouts. During fall 2011, a large haulout (20–25,000 walrus) formed near the village of Point Lay where residents minimized disturbances to the haulout by directing boat traffic and other potential human disturbances. Large haulouts are susceptible to stampedes, which can cause calf mortalities. Local hunters also documented the number and condition of carcasses near the haulout and, in doing so, observed skin lesions on several dead walrus. Samples were collected from potentially infected walrus for analysis. During spring 2011, efforts to tag walrus near Wales and Point Hope were unsuccessful due to unfavorable sea ice and weather conditions. We met with elders and walrus hunters in Wainwright and Point Lay to document historical terrestrial haulouts and walrus behavior. Future plans include deploying tags with local hunters near Little Diomed and meeting with elders at Barrow and Point Hope.

Alaska Marine Science Symposium, 16–20 January 2012, Anchorage AK

# Results from village-based walrus studies in Alaska, 2011

Justin A. Crawford<sup>1</sup>, Willard Neakok<sup>2</sup>, Mark A. Nelson<sup>1</sup>, Joel Garlich-Miller<sup>3</sup>, and Lori T. Quakenbush<sup>1</sup>

<sup>1</sup>Alaska Department of Fish and Game, Fairbanks, Alaska, [Justin.Crawford@alaska.gov](mailto:Justin.Crawford@alaska.gov)

<sup>2</sup>Eskimo Walrus Commission and resident of Point Lay, Alaska

<sup>3</sup>U.S. Fish and Wildlife Service, Anchorage, Alaska

## INTRODUCTION

Pacific walrus (*Odobenus rosmarus*) winter in the Bering Sea, but females with young summer in the Chukchi Sea resting on sea ice; most adult males remain in the Bering Sea where they rest on land. Over the past decade, sea ice in the Chukchi Sea has receded north beyond the shallow continental shelf in late summer. The rapid retreat of sea ice is changing summer walrus habitat in the Chukchi Sea and may be changing summer distributions and haulout behavior, requiring walrus to haul out on land instead of ice. Large terrestrial haulouts of walrus have formed along the Arctic coast of Alaska in 4 of the past 5 years and are expected to occur more often. Terrestrial haulouts are susceptible to disturbances which can cause stampedes resulting in mortality due to trampling for young walrus. Although haulout locations are not consistently used each year, some may be accessible from coastal villages (Fig. 1A).

The purpose of this project is to work with subsistence walrus hunters to conduct observations at terrestrial haulouts accessible from coastal communities, deploy satellite-linked transmitters to monitor movements and feeding behavior, and to document local knowledge regarding walrus terrestrial haulouts. As summer sea ice has decreased in the Chukchi Sea, oil and gas activity has increased, elevating the importance of understanding walrus movements, feeding behavior, and habitat requirements.

## METHODS

Local walrus hunters examine and document walrus carcasses (e.g., record length, age, sex, blubber thickness, and take photographs; Fig. 2). They also monitor the status of haulouts, deploy satellite-linked transmitters and help document local knowledge regarding terrestrial haulouts.



Figure 2. Willard Neakok (on left) and crew examining a dead walrus calf.

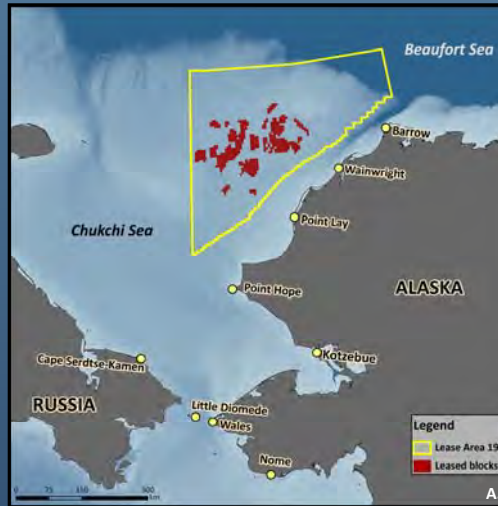


Figure 1. (A) Locations of Alaskan communities along the Chukchi Sea coast near walrus summer habitat and the Chukchi Sea Lease Sale Area and (B) the 2011 walrus haulout near Point Lay.



Figure 3. Terrestrial haulout north of Point Lay, as observed from the barrier island, facing southwest, September 2011.

## ACKNOWLEDGEMENTS:

This project is funded by the Bureau of Ocean Energy Management. We appreciate the support and assistance of the Eskimo Walrus Commission, the U.S. Geological Survey, and the U.S. Fish and Wildlife Service (USFWS). Research on walrus was conducted under permit # MA220876-0 issued to the Alaska Department of Fish and Game (ADF&G) by USFWS and under an approved ADF&G Animal Care and Use Committee Protocol #2010-13R.

## RESULTS

During September of 2011 a large haulout (20,000–25,000 walrus; Figs. 1B and 3) formed near the village of Point Lay; in response, residents minimized disturbances to the haulout by directing boat traffic and other potential human disturbances. Local hunters also documented the condition of 28 carcasses (17 female, 6 male and 5 unknown) during a 25 mile coastal survey near the haulout. Most (19/28; 68%) of the carcasses were calves or yearling animals. The bodies of six (21%) walrus were judged to be emaciated; 9 (32%) appeared to be normal or robust; while the rest of the carcasses could not be evaluated for body condition due to decomposition. Many of the carcasses showed signs of trauma (e.g. crushed bodies, bleeding from the nose and mouth, hemorrhages) consistent with trampling. Heavy surf prior to our survey effort caused the live walrus to leave the beach and removed many unexamined carcasses from the haulout site; therefore no estimate of total mortality was possible.

Crews conducting carcass surveys also observed ulcers on the skin of several dead walrus (See poster 127, Garlich-Miller et al., Mortality of walrus at a coastal haulout, Point Lay, Alaska, Autumn 2011). Samples from potentially infected walrus were collected for analysis.

During spring 2011, efforts to deploy satellite-linked transmitters on walrus near Wales and Point Hope were unsuccessful due to unfavorable sea ice and weather conditions. We met with elders and walrus hunters in Wainwright and Point Lay to document historical terrestrial haulouts and walrus behavior.



Figure 4. Sub-adult walrus with skin lesions.



Figure 5. Dead walrus calf with signs of trauma, consistent with trampling.

## FUTURE ACTIVITIES

We will continue to prepare local teams to respond to future haulouts. We will visit Barrow and Point Hope to document hunters' experiences with walrus on terrestrial haulouts and identify hunters interested in participating in Village-Based Walrus Studies. Further, we plan to assess deploying transmitters with local hunters near Little Diomedes.