Preservation and display of the skull of an entangled bottlenose dolphin (*Tursiops truncatus*)

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INTRODUCTION

On October 7th, 2011, staff from the NC Aquarium at Roanoke Island and Cape Hatteras National Seashore responded to a dead 175cm male bottlenose dolphin (*Tursiops truncatus*) on the shore of Roanoke Sound near Manteo, NC. Monofilament line from pieces of two different types of gill nets encircled the rostrum and both pectoral fins. Some of the line was imbedded in partially healed tissue, and the flukes had been cut off.

METHODS

The dolphin was necropsied at Bodie Island. Post necropsy, the head of the dolphin was transported to the NC State University Center for Marine Sciences and Technology for dissection. The skull and jaws were macerated for 6 months in water and horse feces to remove remaining soft tissue. After light scrubbing and rinsing, the bones were soaked for 3 weeks in a solution of 10% household ammonia, then dried.

RESULTS

Necropsy of the head revealed eight lesions from 3" bar monofilament gill net penetrating maxillary, premaxillary, and mandibular tissues. Remodeling of the bones indicated chronic line penetration. Several teeth were displaced by the encircling line. Several segments of line from the monofilament gill net remain imbedded in the bone tissue. The skull and jaws are now used in displays and programs to educate students, scientists, and citizens, and to promote the NC Monofilament Recovery and Recycling Program.

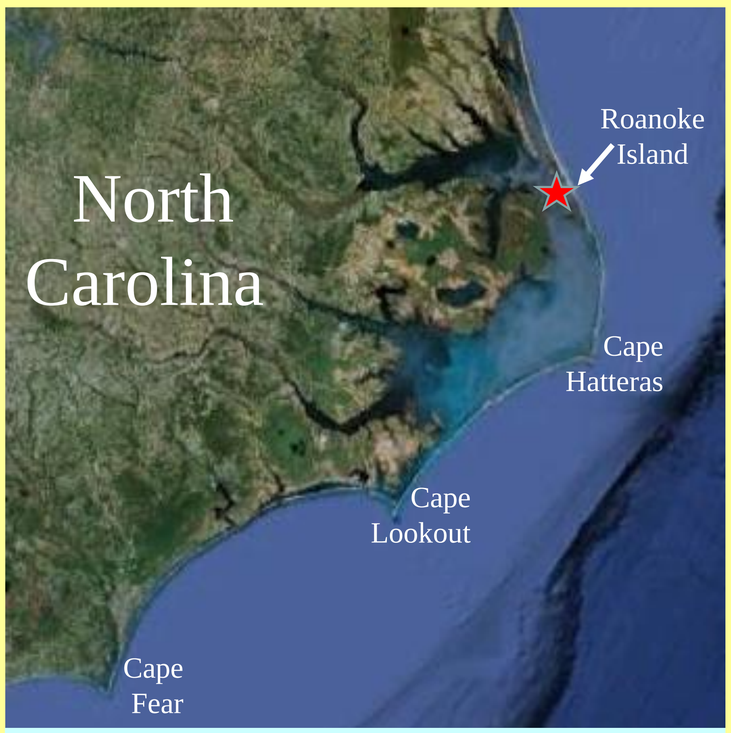

Fig. 1. Coastal North Carolina with a red star at the stranding site on Roanoke Island.

Fig. 2. The carcass of a 175cm (5.7') male bottlenose dolphin that came ashore on Roanoke Island, October 7th, 2011.

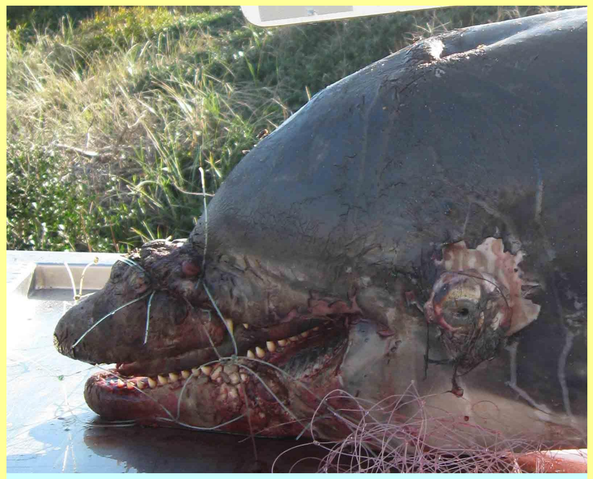

Fig. 3. Jaws entangled in 3" bar monofilament gill net.

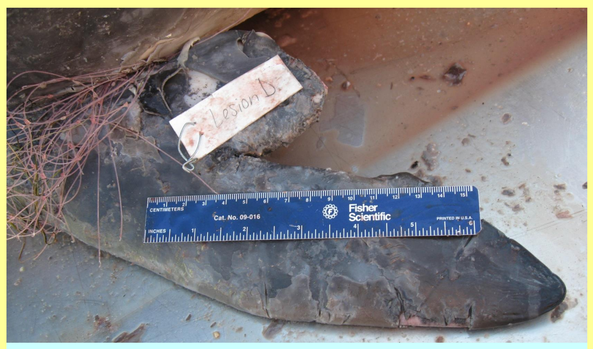

Fig. 4. A different type and color gill net entangled the left pectoral fin.

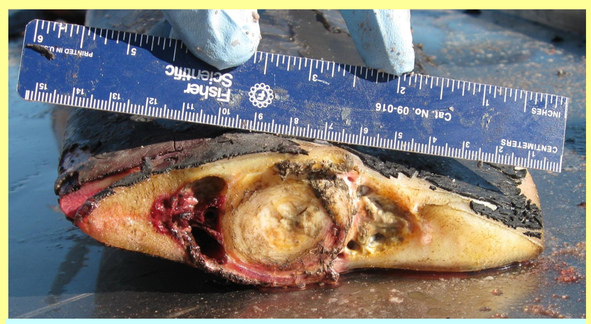

Fig. 5. The tail had been cut off before the carcass was discovered ashore.

Fig. 6. The head dissection revealed eight lesions from monofilament line over the maxilla and mandibular tissues. Displacement of teeth and bony remodeling around the line demonstrated the chronic nature of the entanglement.

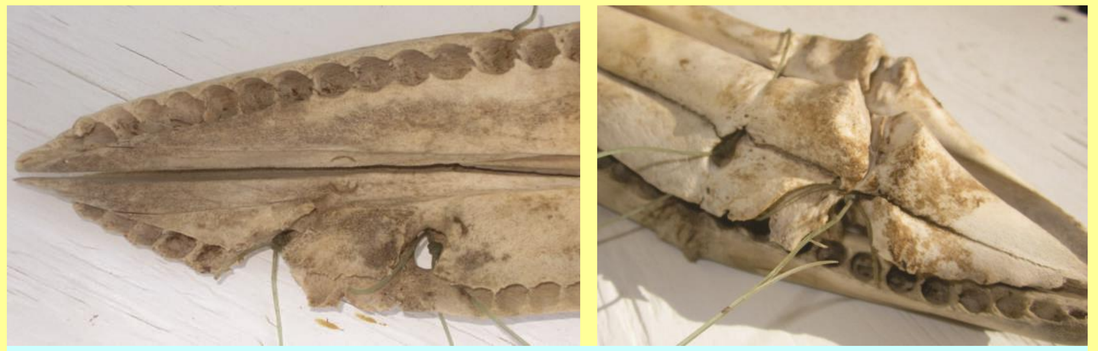

Fig. 7. Post-maceration examination of the rostral palate (left) and the maxillary, premaxillary, and mandibular bones (right) reveals the degree of bone damage and remodeling resulting from the chronic entanglement.

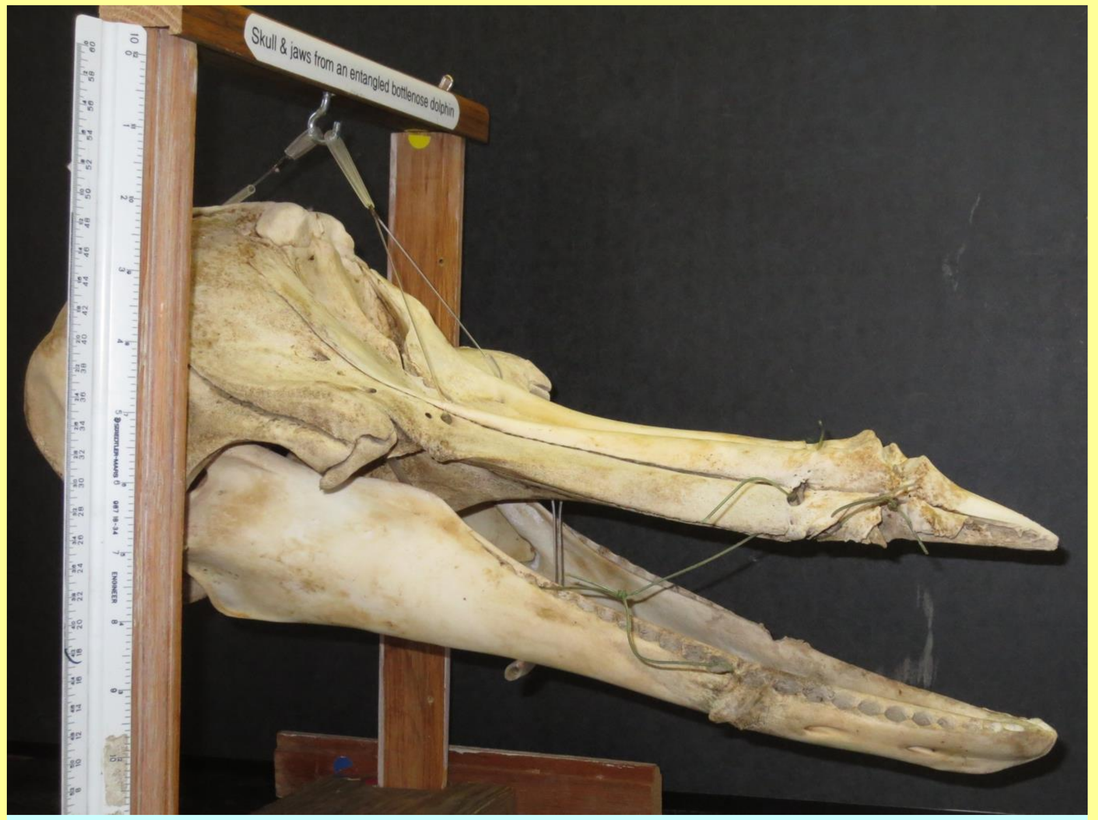

Fig. 8. Alumilite casting resin mixed with bone dust facilitated bone-strengthening and repairs. Steel pins hold the anterior rostral mandibular processes together. Monofilament fishing line supports the skull and jaws in the wooden display rack.

Acknowledgments

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Related Readings

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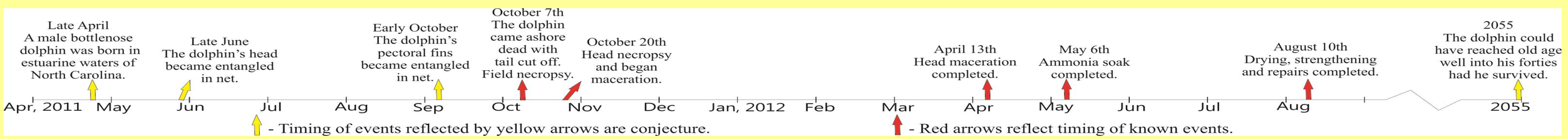

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