

NATIONAL MARINE MAMMAL TISSUE BANK



BACKGROUND In 1989, the National Marine Fisheries Service, Office of Protected Resources (NMFS/OPR), in collaboration with the National Institute of Standards and Technology (NIST) began the National Marine Mammal Tissue Bank (NMMTB) for long-term cryogenic archival of selected marine mammal tissues. In 1992, the NMMTB was formally established by the Marine Mammal Health and Stranding Response Act (Public Law 102-587). The NMMTB, which is an important component of NMFS's Marine Mammal Health and Stranding Response Program, is maintained by NIST as part of the Marine Environmental Specimen Bank (Marine ESB). Specimens from Alaska are provided to the bank through the Alaska Marine Mammal Tissue Archival Project (AMMTAP). The USGS Biological Resources Division is the lead agency for this project. The cryogenic banking facilities for the NMMTB are operated by the NIST Chemical Science and Technology Laboratory in Gaithersburg, Maryland, and Charleston, South Carolina. The Charleston facility is located in the newly-constructed Hollings Marine Laboratory at the South Carolina Marine Resources Center.

PURPOSE The NMMTB provides a resource of samples that have been collected in a systematic and well-documented manner for comparing results over time to identify whether environmental trends exist, provides for future retrospective analyses for new analytes of interest, and allows for future analyses of samples collected today using improved analytical techniques of tomorrow.

DESCRIPTION **Protocols** developed by NIST for collecting and archiving tissues are designed to: (1) provide sufficient material for multiple analyses, (2) minimize the possibility of sample change and/or loss during storage, (3) minimize inadvertent contamination during sample handling and ensure sample integrity, (4) provide for long-term sample stability through cryogenic techniques, and (5) track and maintain a record of sample history.

Sources of tissues include freshly-dead stranded animals, incidental takes in fishing activities, and animals taken by Native Americans for subsistence.

Indicator species include: harbor seal (*Phoca vitulina*), California sea lion (*Zalophus californianus*), northern fur seal (*Callorhinus ursinus*), ringed seal (*P. hispida*), pilot whale (*Globicephala melas*), harbor porpoise (*Phocoena phocoena*), Atlantic white-sided dolphin (*Lagenorhynchus acutus*), pygmy sperm whale (*Kogia breviceps*), bottlenose dolphin (*Tursiops truncatus*), rough-toothed dolphin (*Steno bredanensis*), common dolphin (*Delphinus delphis*), beluga whale (*Delphinapterus leucas*), bowhead whale (*Balaena mysticetus*), and polar bear (*Ursus maritimus*). The NMMTB also has samples from other species.

Current partners for collections include: New England Aquarium, UNC-Wilmington, NOAA/NOS Charleston, The Marine Mammal Center, Mote Marine Laboratory, Hubbs-SeaWorld Research Institute, Cape Cod Stranding Network, Alaska Biological Science Center (USGS and USFWS), Kawerak, Inc., Kotzebue IRA, North Slope Borough Department of Wildlife Management, Nanuuq Commission, Alaska Eskimo Whaling Commission, Alaska Beluga Whale Committee, Eskimo Walrus Commission, University of Alaska-Fairbanks, and Alaska Sea Life Center.

For current inventory of banked specimens, go to www.XXXXXXXX

For Tissue Access Policy, go to www.XXXXXXXX

CONTACTS **Rebecca S. Pugh**, NIST, HML, Charleston, SC; *tel:* 843-762-8952; *email:* rebecca.pugh@nist.gov
Michael B. Ellisor, NIST, HML, Charleston, SC; *tel:* 843-762-8951; *email:* michael.ellisor@nist.gov
Paul R. Becker, NIST, HML, Charleston, SC; *tel:* 843-762-8861; *email:* paul.becker@nist.gov

COLLABORATORS **Teresa K. Rowles**, NOAA, NMFS, Silver Spring, MD; *tel:* 301-713-3020; *email:* teri.rowles@noaa.gov
Geoff W. York, USGS/BRD, Anchorage, AK; *tel:* 907-786-3928; *email:* geoff_york@usgs.gov