

Monofilament Recovery and Recycling Program of North Carolina

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The North Carolina Maritime Museum seeks to preserve and interpret all aspects of North Carolina's rich maritime heritage through educational exhibits, programs, field trips and research. Museum staff, volunteers, colleagues, and students routinely collaborate in the east coast's longest-term continuous bottlenose dolphin photo-identification study. Staff also participate the Marine Mammal Stranding Network and the Sea Turtle Stranding and Salvage network. It is the experiences through these studies and activities that have inspired this proposal.

It is well documented that unintentional entanglement of marine wildlife (termed "bycatch") in active fishing gear is an important conservation problem in many parts of the world. Additionally, discarded fishing gear, both recreational and commercial, also poses threats to marine wildlife. Over the past several years in North Carolina we have begun to document what appears to be an increasing amount of such entanglement. Each year in NC we encounter marine mammals, sea turtles, and sea birds dead or dying due to entanglement in monofilament fishing line. Entangled animals become exhausted, lose their ability to capture prey and avoid predators, and/or develop wounds and infections from attached line.

Goals of Project:

We propose to:

- 1) Raise awareness about the negative impacts that discarded fishing line has on marine life (figs. 3-5), water quality, and human welfare (fig. 2),
- 2) Set up monofilament fishing line recovery and recycling stations (fig. 1) at fishing piers, bait and tackle shops, docks, beached, and other waterfront areas,
- 3) Educate recreational and commercial fishers about appropriate means of discarding unwanted line by informing them about the threats posed to marine wildlife,
- 4) Decrease the amount of fishing line entering and remaining the coastal waters, and
- 5) Increase the amount of fishing line being recycled.

We plan to reduce the risk of entanglement from discarded gear using the Florida Monofilament Recovery and Recycling Program (MRRP) as a model for our program in NC. Florida's MRRP website (<http://www.fishinglinerecycling.org/>) provides information about starting and running such a program. Gaining community support for this program should be straightforward because the need for it is clear, the approach is innovative, all stakeholders have something to gain and no stakeholder is alienated.

Doing the "right thing" in regards to reducing pollution has encouraged industry to adopt innovative techniques. For example, Berkley, a major monofilament manufacturer, has implemented a program to recycle monofilament line into bicycle seats, tackle boxes, spools for fishing line and other new items (<http://www.berkley-fishing.com>).

Before expanding into all 7 coastal counties we will begin in Carteret County where we plan to: (1) Set-up 30 PVC recycling stations at fishing piers, ramps, marinas, beaches, and bait/tackle shops (Fig. 1); (2) speak to local fishing groups in the area; (3) present the idea of recycling stations to organizations such as NOS/NOAA, CMAST, IMS, NC Aquaria, and the National Park Service to seek collaborators in this effort. Through these efforts, commercial

and recreational fishermen and the general public will learn about threats posed by discarded gear and learn appropriate methods of recycling monofilament line. We plan to check all stations twice each month initially, quantify the amount of line collected, and mail the line to the Berkley Company. We will summarize the effort and data for a final report available in January, 2007 and each year thereafter.

Timetable:

Months 1+2: purchase materials and order stickers/signs for bin constructions. Design and order signs, posters, and brochures. Assemble bins. Begin educational outreach, establishing regional collaborators, and establish contacts with sites for the bins.

Recruit/educate volunteers. Assemble volunteer tool kits.

Months 3+4: Distribute bins and begins seeking financial support for future years. Continue educational outreach

Months 5-12: Check bins semi-monthly. Continue and increase educational outreach and developing/maintaining volunteer network.

Item	Justification	Cost
Contract Salary (3/4 time, \$15/hr) and overhead	Educational outreach, recruiting and supervising volunteers, developing advisory committee, expressing appreciation, fundraising, building and installing PVC bins, maintaining bins, creating educational materials, program evaluation, report writing,	\$25,115
PVC, glue, bolts, and posts for bin construction	\$58 each X 100 bins	\$5,800
Stickers for bins	\$2.75 per set X 100 bins	\$275
Tool kit for volunteers	Gloves, bags, line cutters, cameras	\$300
3 digital cameras	To photo-document case histories of entanglements and locations/results of bins	\$900
Laptop computer	To enter and disseminate data, photos, and digital educational materials. For outreach slide presentations at clubs, meetings, and schools.	\$1,600
Digital projector	For outreach slide presentations at clubs, meetings, and schools	\$1,200
Educational materials	Brochures and posters	\$600
Web site design and maintenance	For the timely dissemination of photos, data, and other relevant information to supporter, collaborators, and the public.	\$700
Outdoor signs	To post above bins, \$30 x 100	\$3,000
travel	\$0.50/mile x 3,000 miles to check bins and attend conferences and meetings	\$1,500
	subtotal	\$40,990
Friends of Museum institutional overhead	8%	\$3,279
	This proposal seeks funding for the first year which will total:	\$44,269

Qualifications of each participant:

Victoria Thayer holds a Master of Environmental Science degree from Duke University (1982). She worked for NOAA/NMFS as NC Marine Mammal Stranding Area Representative from 1992-1996 and organized and coordinated a large number of stranding volunteers. She is currently a PhD Candidate at Duke University Marine Lab.

Keith Rittmaster is the Natural Science Curator for the North Carolina Maritime Museum. He holds a Master of Environmental Management degree from Duke University (1981) and has a background of marine mammal and sea turtle research and conservation. Keith currently directs a long-term (since 1985) bottlenose dolphin photo-identification study and leads public overnight field trips at the museum's field station (former USCG station) at Cape Lookout. He is also a participant in the Marine Mammal Stranding Network and the Sea Turtle Stranding and Salvage network.



Figure 1 – Example of monofilament bin
Photo from MMRP web site



Figure 2- Discarded fishing line in boat propeller.
Photo from MMRP web site.



Figure 3- Leatherback sea turtle entangled in net.
Photo Keith Rittmaster



Figure 4- Dead entangled bottlenose dolphin calf.
Photo courtesy of NOAA/NMFS Beaufort Lab.



Figure 5 - 2 pelicans (one alive and one dead) joined by discarded fishing line. Photo Keith Rittmaster