

**Maine Lobstermen's Association
Report to the Consortium for Wildlife Bycatch Reduction
Program Year: April 2006 through March 2007**

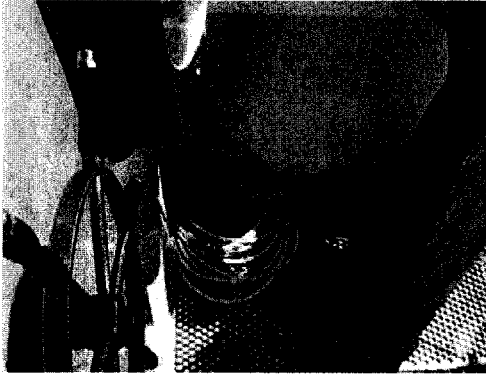
The Maine Lobstermen's Association (MLA) participated in its second year of the Consortium for Wildlife Bycatch Reduction. The MLA's role in this project is to field test experimental ropes developed by the Consortium.

In 2006-2007, the MLA tested several types of experimental groundlines and endlines. The ropes that were field tested are outlined in Table 1.

Table 1 Overview of Consortium for Wildlife Bycatch Reduction Ropes Field Tested by MLA						
Rope Type	Date produced	Amount produced	Amount distributed by MLA	Projected cost*	Rope Type	Description
Barium Sulfate Batch 1	April 2006	55 coils	51 coils	\$1.80/coil	Ground line	3/8" gray polypropylene line infused with BaSO ₄ . Batch 1 produced an inconsistent batch with some floating and some sinking and no way to distinguish between them.
Barium Sulfate Batch 2	August 2006	10 coils	10 coils	\$1.80/coil	Ground line	3/8" gray polypropylene line infused with BaSO ₄ . Second batch.
Metallocene polyethelene A	March 2006	3000 feet	3000 feet	\$4.50/coil	Ground line	3/8" green braided rope which was tightly wrapped. Inner core is a braided polyester with a braided metallocene polyethelene outer sheath.
Metallocene polyethelene B	March 2006	1000 feet	1000 feet	\$4.50/coil	Ground line	7/16" green braided rope which was not tightly wrapped. Inner core is a braided polyester with a braided metallocene polyethelene outer sheath.
Weak line	May 2006	20 coils	10 coils	\$3.00/coil	Endline	3/8" light purple polypropylene line infused with BaSO ₄ with a breaking strength of 800 pounds.
Stiff line A	March 2006	200 feet	200 feet	Unknown	Endline	3/8" outer diameter rubber sections (EPDM rubber hardness 60) clad over a 3/16" inner core of braided polyethylene with 4800 breaking strength
Stiff line B	March 2006	200 feet	200 feet	Unknown	Endline	7/16" outer diameter rubber sections (EPDM rubber hardness 60) clad over a 3/8" inner core of standard twisted polypropylene with 2300 breaking strength
Stiff line C	August 2006	120 feet	120 feet	Unknown	Endline	1/2" outer diameter rubber sections (EPDM rubber hardness 60) clad over a 5/16" inner core of braided polyethylene with 8000+ pounds breaking strength.

*1200 feet per coil

Barium Sulfate (BaSO₄) Groundlines



Barium sulfate groundlines were first produced for testing through the Consortium for Wildlife Bycatch Reduction and distributed to the industry by MLA in 2005. In 2005, four lobstermen tested these ropes in southern Maine, Casco Bay, midcoast Maine and downeast Maine. The ropes performed well in southern Maine and Casco Bay. The midcoast Maine deployment was lost and no data was received. The downeast deployment showed signs of chafing and wear after just a short few month deployment. A summary of the

2005 BaSO₄ groundline deployments are listed in Appendix A.

Due to some of the positive feedback from the 2005 trials, a larger run of rope was planned for distribution through MLA for the 2006 field season.

Barium Sulfate (BaSO₄) Groundlines (Batch 1) Regional Ventless Trap Survey

The MLA worked with Norm Holy and Carl Wilson of Maine Department of Marine Resources (DMR) to coordinate the production and delivery of 15 coils of BaSO₄ groundline for use in the DMR's Regional Ventless Trap Survey. This survey involved the deployment of 150 triples comprised of standardized lobster traps with 10 Fathom of rope in between. This randomized survey conducted across 3 statistical areas in Maine during the months of June, July and August allowed for data to be collected on the rope through a controlled standardized experiment. The BaSO₄ groundline was tested alongside other experimental low profile groundlines produced for DMR. This deployment included the use of DST mini loggers provided by the Gulf of Maine Lobster Foundation (GOMLF) which were used to measure the height of the groundline arc off the bottom.

Seaside, Inc. of Warren, Maine produced and arranged for delivery of the rope to DMR in April 2006. The BaSO₄ groundline was deployed on several sets of triples across statistical areas 510, 511 and 512 in June 2006. The BaSO₄ rope deployed as an endline was observed "floating at the surface" when the DMR traveled back to haul the ventless deployments after a few nights set.

The MLA worked with Maine DMR to determine if the Barium Sulfate (BaSO₄) groundlines were in fact sinking or floating. The DMR conducted video observations of several ropes in Boothbay Harbor in June 2006. Divers video taped the arc heights of several ropes, including the BaSO₄ groundlines, low profile lines and standard floating line. DMR whale scientist Erin Estrada reported that "the rope was floating 7-10 ft. off the bottom without weights." (email from Erin Estrada attached in Appendix B).

Based on the floating profile of this rope, the BaSO₄ groundlines were pulled from the Regional Ventless Trap Survey and were not used in the July or August deployments. The lobsterman who fished the downeast leg of the survey also expressed concern with regard to the reliability of the BaSO₄ groundline due to chafing observed on the line which he feared could cause it to part off if it were under stress.

Due to the extremely short deployment and the fact that the rope did not sink, the lobstermen who hauled the rope as part of the Regional Ventless Trap Survey were not asked to provide any evaluation of the BaSO₄ groundline from these deployments.

**Barium Sulfate (BaSO₄) Groundlines (Batch 1)
Coils Distributed to Individual Lobstermen**

Seaside, Inc. produced an additional 40 coils of BaSO₄ groundline for distribution to individual lobstermen for testing. The MLA picked up the 40 coils and brought them to the May MLA Directors meeting for distribution. Lobstermen were asked to take a coil of rope and deploy it on a few sets of gear that they would normally fish throughout their season. The goal of the deployments was to get realistic at sea trials to determine the operational feasibility of this rope as a groundline in various bottom types and conditions along Maine's entire coast.

Lobstermen at the MLA Director's meeting expressed skepticism about fishing sinking groundlines in many areas of Maine's coast. There was concern that gear would get chafed or hung down and therefore could result in lost traps and tags. Lobstermen were most concerned about losing tags and asked MLA to look into getting some replacement tags if gear were lost due to experimental rope testing. Despite concerns over fishing sinking line, 23 coils of sinking rope were distributed at this meeting.

The MLA contacted Erin Burke at the Massachusetts Division of Marine Fisheries (DMF) and arranged to have an additional 13 coils tested by Massachusetts lobstermen on a variety of bottoms. Massachusetts will require all lobstermen to convert all groundlines to sinking rope by January 2007, so there is a lot of interest among Mass lobstermen to test new sinking ropes. Mass DMF agreed to use the same logsheet to evaluate the operational feasibility of the ropes.

Of the 40 coils produced by Seaside, the MLA distributed 36 coils to lobstermen throughout Maine and through Mass DMF. Table 2 contains a list of lobstermen who received this rope.

MLA followed up with Maine DMR Commissioner Lapointe and DMR Marine Patrol Colonel Joe Fessenden with regard to getting replacement tags if traps, and hence tags, are lost due to experimental rope testing. The DMR was extremely cooperative and order 500 replacement tags which were immediately made available to any lobsterman who lost trap tags due to experimental rope testing.

Table 2 2006 NEAq Sink Rope Batch 1 Distribution			
Lobsterman	Town	# coils	Distributed
Mass DMF		13	5/23/2006
Maynard Curtis	Owls Head	1	5/24/2006
Bob Baines	Spruce Head	1	5/24/2006
Pat White	York	1	5/24/2006
Elliott Thomas	Yarmouth	2	5/24/2006
Casey Morrill	So Thomaston	1	5/24/2006
Ryan Myrick	Cushing	1	5/24/2006
Mike Myrick	Cushing	1	5/24/2006
Adam Gamage	Bristol	1	5/24/2006
Arnie Gamage	Bristol	1	5/24/2006
Dwight Carver	Beals	1	5/24/2006
Dwights son in law	Beals	1	5/24/2006
Brian McLain	New Harbor	1	5/24/2006
John Stotz	New Harbor	1	5/24/2006
Bobby Ingalls	Bucks Harbor	1	5/24/2006
Charles Ingalls	Bucks Harbor	1	5/24/2006
David Cousens	Spruce Head	1	5/24/2006
Alex Cousens	Spruce Head	1	5/24/2006
Andy Cousens	Spruce Head	1	5/24/2006
Ted Bear	Harpswell	2	5/24/2006
Jonathan Bear	Harpswell	1	5/24/2006
Tad Miller	Matinicus	1	5/24/2006

In June 2006, the MLA mailed a memo and a waterproof logsheet to all Maine lobstermen who had received the BaSO₄ groundline with instructions to get the rope into the water and record some basic information about where and how the rope is deployed and how often it is hauled. A copy of the memo and logsheet are included in Appendix C.

A few weeks later in June 2006, the MLA received reports from the field, both from lobstermen testing the rope and through the Regional Ventless Trap Survey, that this rope was actually floating. As described in the previous section of this report, MLA worked with DMR to coordinate divers to take video footage of the rope to determine whether it is was truly floating. The DMR video work observed this rope floating up to 10 feet off the bottom.

The MLA also worked with Pat White, a lobsterman from York, Maine, to deploy Star Oddi pressure sensors provided by the Gulf of Maine Lobster Foundation (GOMLF) on both the 2005 BaSO₄ groundline and the 2006 BaSO₄ groundline to compare the

profiles of the rope to determine if the 2006 rope was floating. The results of this sensor work indicated that both the 2005 and 2006 BaSO₄ groundline fished by Pat White were sinking ropes. The results of this sensor work are attached in Appendix D. Elliott Thomas, who also fished both 2005 and 2006 BaSO₄ groundlines reported that he observed the 2006 rope floating.

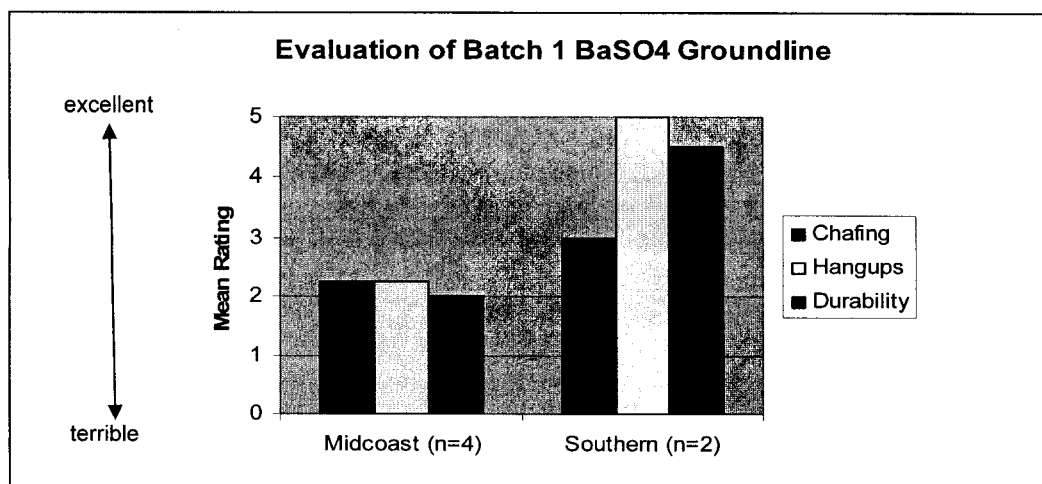
Therefore, it was determined that the 2006 BaSO₄ groundline was a mixed batch with some that floated and some that sank, and no way to distinguish which was which. This was very troubling because some of this rope was distributed in Cape Cod Bay through Mass DMF where it is illegal to fish sinking groundlines. Also, it is illegal throughout the Gulf of Maine to fish floating lines at the surface, and some lobstermen had used this BaSO₄ groundline on the top 2/3 of their buoy line.

In response to these findings, the MLA cancelled the field trial of the 2006 BaSO₄ groundline and contacted Erin Burke Mass DMF to inform her of the status of the rope. She too had received reports that the rope was floating. A copy of the notice mailed to lobstermen canceling this field trial is attached in Appendix E.

Lobstermen were asked to complete a logsheet if they had fished the rope. However, due to the fact that the rope had only been distributed for about a month, many lobstermen who took a coil of rope had not actually gotten it into the water. Six lobstermen did return logsheets with an evaluation of the rope.

The results of the 2006 BaSO₄ groundline can be looked at as a conservative evaluation, as it is impossible to know whether those rating it had a sinking or a floating version of the rope. One would assume that the floating version of the line would receive better ratings than a sinking version due to its lack of contact with the bottom. Based on interviews with those who completed logsheets, it is believed that ½ had a sinking version of the line and ½ had a floating version of the line.

Lobstermen were asked to rate the rope on a scale of 1 (terrible) to 5 (excellent) relative to an average floating that they normally fish. Lobstermen from southern Maine rated the 2006 BaSO₄ groundline (batch 1) consistently better than those in midcoast Maine. This is similar to the feedback received from the 2005 deployments.



The midcoast Maine lobstermen consistently rated this rope "below average" on the three major features of the rope: chafing, hang-ups and durability. The southern Maine lobstermen gave the rope an average rating for chafing and above average for hang-ups and durability, meaning they believe that this rope performs better than their average floating rope. Four of the six lobstermen commented on their logsheets that this rope chafes quickly on hard bottom. Table 3 provides a summary of all the ratings of all of the operational characteristics that were evaluated by these lobstermen.

Zone	Count	Fouling	Chafing	Hangups	Noise	Kinking	Durability	Handling
D	4	3	2.25	2.25	3	3	2	3
F	1	4	2		2	5	4	5
G	1	5	4	5	5	5	5	

1= terrible; 3=average; 5=excellent

Two of the Zone D lobstermen who returned a logsheet also brought the fished rope back to the MLA for strength testing. They believe that they had received a sinking version of the line. This rope was mailed to Southwest Ocean Services in Houston, Texas in March 2007.

**Barium Sulfate (BaSO₄) Groundlines (Batch 2)
Coils Distributed to Individual Lobstermen**

In August 2006, Seaside, Inc. produced an additional 10 coils of BaSO₄ groundline for distribution to individual lobstermen for testing. As previously discussed, lobstermen are skeptical about fishing sinking rope in many areas of Maine. The misfortune of handing out experimental sink line that actually floated made it even more difficult to find lobstermen who were committed to this experiment. Therefore, the MLA decided to work with a small targeted group of lobstermen for the Batch 2 BaSO₄ groundline deployment.

In September 2006, the MLA asked 10 lobstermen to fish the BaSO₄ groundline Batch 2 groundline, deployed along with the BaSO₄ weak line as an endlane (Table 4).

Lobsterman	Town	Distributed	# coils sink	# coils weak
Bob Baines	So Thomaston	8/30/2006	1	1
Pat White	York Harbor	9/6/2006	1	1
Elliott Thomas	Yarmouth	8/31/2006	1	2
Casey Morrill	So Thomaston	8/30/2006	1	1
Ryan Myrick	Cushing	8/30/2006	1	1
Mike Myrick	Cushing	8/30/2006	1	1
Kristan Porter	Cutler	8/30/2006	1	1
John Drouin	Cutler	8/30/2006	1	1
John Hansen	Tenants Harbor	10/2/2006	1	1
Andy Johnson	Harpswell	10/4/2006	1	1

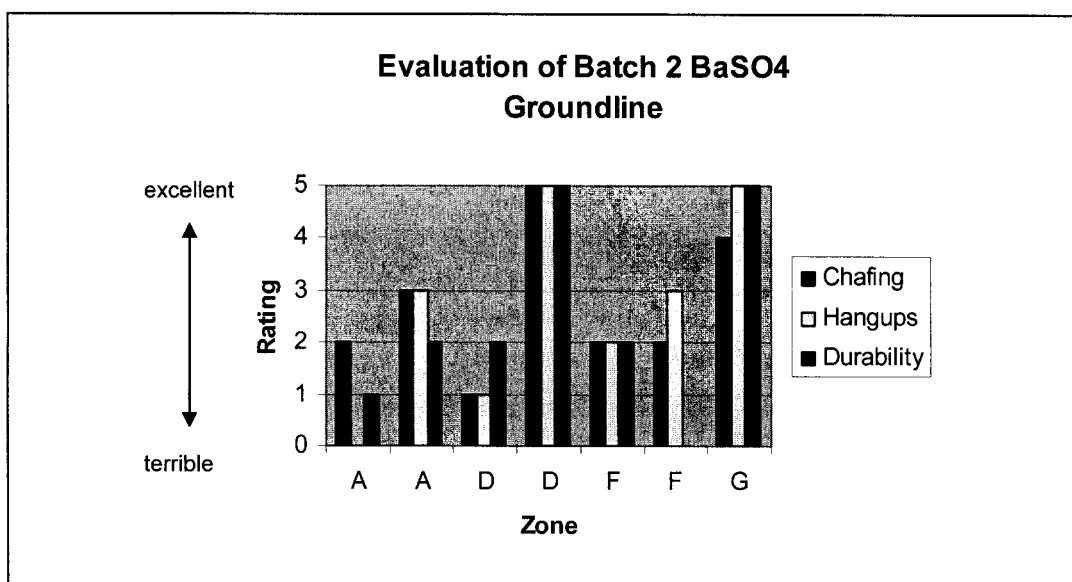
These ten lobstermen were asked to put this rope on at least one set of gear, and fish it as they would normally fish their gear until they ended their fishing for the year or the rope failed. At the end of the season, lobstermen were required to return the used ropes to MLA for strength testing. In return, the MLA committed to compensate each lobsterman \$1000 upon completion of the work. A copy of the memo outlining these terms is attached in Appendix F.

Seven of the 10 lobstermen returned logsheets evaluating the operational feasibility of the rope and six of the 10 lobstermen returned rope samples for strength testing. These rope samples were mailed to Southwest Ocean Services in Houston, Texas in March 2007 for testing. One of the ten lobstermen did not return a logsheet or rope because the ropes are still being actively fished.

Zone	Depth	Bottom Fished	# Hauls	Fouling	Chafing	Hang ups	Noise	Kinking	Durability	Handling
A	42	mud-gravel	5		2				1	
A	40-42	mud-gravel	17	2	3	3	1	2	2	2
D	12-16	hard	6	3	1	1	3	3	2	
D	20-25	soft bottom	15	5	5	5	5	5	5	5
F	40	hard	30	3	2	2	4	4	2	3
F	8-15	75% gravel/sand-25% mud	18	2	2	3	2	4		4
G	6-15	Across all bottoms	24	5	4	5	5	5	5	5

1=terrible; 3=average; 5=excellent

Lobstermen used the same logsheet rating the rope on a scale of 1 (terrible) to 5 (excellent) relative to an average floating that they normally fish. Once again, lobstermen from southern Maine (Zones F and G) rated it consistently better than those to their east in midcoast (Zone D) and downeast (Zone A) Maine (Table 5).



The ropes were generally fished over a 3 month period between September and December 2006. The BaSO₄ groundline was rated below average in downeast Maine and in midcoast Maine on hard bottom. A lobsterman from Zone D fishing the rope on soft bottom rated the rope above average. Zone F lobstermen in the Casco Bay area rated the ropes below average, and a Zone G lobsterman in western Maine rated the ropes above average. A Zone F lobsterman also deployed this rope on his bridles and fished it on hard bottom. He noticed chafing almost immediately. This is in keeping with the general east to west trend of the ropes fairing worse in the east and better in the western part of the state, but also highlight the importance of the bottom type where the rope is fished. The ropes fair well on soft and gravel bottoms, and are rated poorly on hard bottoms.

Zone D has both very hard rough bottom, where the ropes tested poorly and soft bottom where the ropes tested well. In the Zone D hard bottom, the lobsterman commented that in 5 separate deployments all were badly chafed, and 4 of the 5 deployments actually parted off. In Zone A, a lobsterman commented that the rope only lasted one month. He also noted that these experimental ropes could only be hauled under perfect circumstances and are not a plausible solution because it has to be handled so carefully to prevent it from parting.

Summary of Barium Sulfate (BaSO₄) Groundlines

In summary, the barium sulfate groundlines generally performed well in the western part of the state where the bottom tends to be mud, gravel and cobble, with some areas of hard ledge. This is not surprising since many lobstermen have already been able to fish existing commercial sinking lines in this part of Maine.

The barium sulfate groundlines generally performed poorly in midcoast and downeast Maine. These parts of the state are characterized by more harder and sharper bottom, with a lot of larger boulders and ledge. The tides and currents also run stronger as you move east along the coast of Maine causing additional strain on the lines.

Given the feasibility of fishing this rope along the western part of Maine's coast, from Casco Bay south and then into offshore waters, and the predicted price point for this rope at \$1.80/pound, the MLA believes this rope warrants additional testing on durability. Over the course of both the 2005 and 2006 field seasons, the ropes were only fished for short periods of time, averaging about 3 months each year. We recommend redeploying existing 2005 and 2006 ropes during the 2007 field season to get a better sense of the durability of the rope. We do not recommend any new production of this rope.

Sinking Groundlines: Metallocene Polyethelene Braided Rope



In March 2006, Norm Holy produced two types of strong braided sinking line. The rope is constructed with an inner core of braided polyester with an outer sheath of braided metallocene polyethelene. Two diameters of this rope were produced including a 3/8" tightly wrapped rope and a 7/16" loosely wrapped rope (Email from Norm Holy describing these ropes is included in Appendix G).

Table 6 Overview of Lobstermen Evaluation of BaSO4 Batch 1 Summer 2006

Zone	Depth	Bottom Fished	Fouling	Chafing	Hangups	Noise	Kinking	Durability	Handling
F (n=1)	5	ledge and rocky		3	2	5	2		2
G (n=1)	6-15	Across all bottoms	5	5	5	5	5	5	5

1=terrible; 3=average; 5=excellent

These two types of rope were delivered to the MLA office in April 2006, and were immediately distributed to two lobstermen from southern Maine for testing. The loosely wrapped 7/16" rope was fished in May and June off Cousins Island in Yarmouth, Maine. The deployment ended after only 2 months because the rope jammed this lobsterman's hauler and proved to be too dangerous to haul. The loose wrap of the rope allowed it to lose its shape, flattening out, and thus getting jammed in the hauler. The hauler would need to be reversed in order to remove the rope. This lobsterman also reported that the rope kinked on deck and required knots to rig it because it is braided. A sample of this rope was sent to Norm Holy in June 2006 for evaluation.

The tightly wrapped 3/8" line was fished from May to November off York, Maine. In general this lobsterman found that the rope fished very well and was extremely durable. However, he thought the rope was too thin as it jumped out of the hauler on rough days. This rope was returned to the MLA office for strength testing and was mailed to Southwest Ocean Services in Houston, Texas in March 2007.

Summary of Metallocene Polyethelene Braided Rope

In summary, the metallocene polyethelene braided rope got a mixed review. The rope appears to be very durable, but it has not yet been fished on some of the more challenging bottom and under challenging conditions in Maine.

Due to the potential extreme durability of this rope, the MLA recommends additional trials of this rope in 2007 to be conducted in midcoast and downeast Maine on rough hard bottom. The MLA recommends that the manufacturer pay particular attention to ensuring that the rope is truly a round rope, and not a flat oval rope. The wrap of the rope should be tight and the diameter should be 7/16".

With an estimated cost of \$4.50/pound, this rope would need to prove itself to be extremely durable and able to be easily fished on hard bottom under difficult conditions to justify the cost.

Weak Endlines

Weak endlines were first produced for testing by the Consortium for Wildlife Bycatch Reduction and distributed to the industry by MLA in 2005. In 2005, four lobstermen tested these ropes in southern Maine, Casco Bay, midcoast Maine and downeast Maine (summary in Appendix A). The 2005 rope was produced as a 5/16" diameter rope with an estimated breaking strength of 600 pounds. The rope is similar to the BaSO₄ groundlines in that it is a polypropylene line infused with barium sulfate, and therefore the rope sinks. Lobstermen testing this rope will generally choose to splice a piece of floating rope on the bottom 1/3 to keep the endline from immediately getting hung up on the bottom.

Although the 2005 ropes were unpopular amongst all the lobstermen who fished it, lobstermen from southern Maine were able to successfully haul from the weak endline. The weak endline parted off during its deployment in downeast Maine.

A small run of weak endline was planned for further field testing in 2006. In June 2006, Seaside, Inc. produced 20 coils of 3/8" diameter weak line with a breaking strength of 800 pounds. This rope was not available for distribution at the time of the May 2006 MLA Directors meeting when the BaSO₄ Batch 1 rope was distributed. Delivery of the weak line was further delayed due to the manufacturing mishap with the first batch of BaSO₄ ropes, to allow MLA time to investigate and understand the problems with the BaSO₄ groundlines.

Lobstermen are extremely skeptical about the idea of fishing a weak endline, especially in midcoast and downeast Maine where the bottom is rough and tides and currents run hard. Most lobstermen are concerned that the rope will easily part off and cause them to lose gear. Many do not believe the weak endline could be hauled in bad weather or in strong tides or currents.

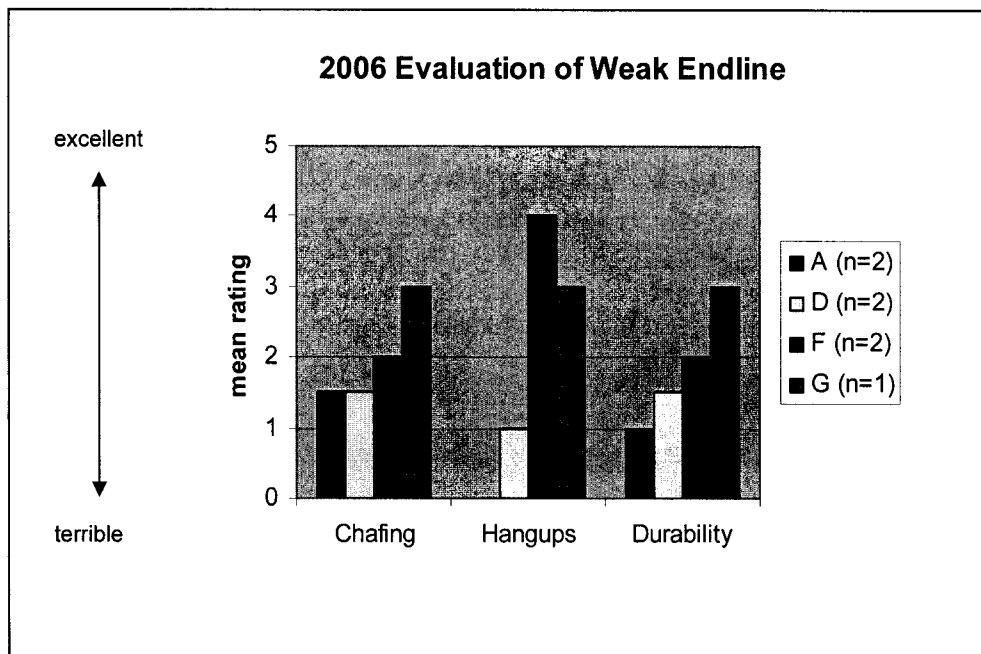
The MLA distributed the weak endline to a group of ten lobstermen, to be fished with the second batch of BaSO₄ groundlines, in August 2006. Table 4 contains the list of the lobstermen who received the weak rope.

As with the Batch 2 BaSO₄ groundlines, seven of the 10 lobstermen returned logsheets evaluating the operational feasibility of the rope and six of the 10 lobstermen returned rope samples for strength testing. One of the ten lobstermen did not return a logsheet or rope because the ropes are still being actively fished. Lobstermen used the same logsheet to evaluate the operational feasibility of the ropes on a scale of 1 (terrible) to 5 (excellent) (Table 6).

Zone	# responses	Fouling	Chafing	Hangups	Noise	Kinking	Durability	Handling
A	2	1	1.5			1	1	1
D	2	3	1.5	1	3.5	3.5	1.5	3
F	2	3	2	4	3.5	4	2	4
G	1	3	3	3	3	3	3	3

1=terrible; 3=average; 5=excellent

The weak endline was generally fished over a 2 month period from September to December 2006. This rope was rated below average on all operational aspects by Downeast lobstermen, and average by western Maine lobstermen. A Zone A lobsterman reported that the rope was deployed, and when he went back to haul it 3 days later it had already parted off. This once again reflects the more challenging fishing conditions and bottom type as you move up the coast from west to east.



Summary of Weak Endlines

There is not much support for the concept of weak endlines among Maine lobstermen. However, the weak endlines appear to have some potential in the trawl fishery in the western part of the state. Field tests from 2005 and 2006 indicate that it is possible to haul the weak endlines in this part of the state. It is hard to imagine a scenario in which

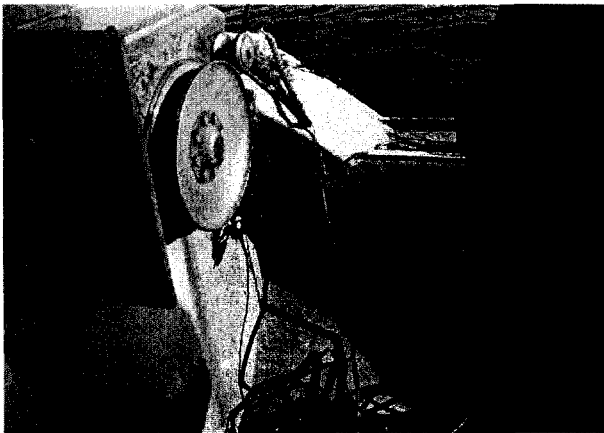
weak endlines could work in midcoast or downeast Maine due to the rough bottom and strong tides and currents. It is also difficult to imagine weak endlines working with triples or doubles because it is essential to have a reliable endline in order to retrieve those traps.

The MLA does not recommend additional production of weak lines for field testing. There are still 10 coils which were produced in 2006 which could be deployed on a limited basis on trawls in the Casco Bay area to further test the operational feasibility of weak endlines in this part of this trawl fishery.

Finally, with an estimated cost of \$3.00/pound, it would be hard to imagine a lobsterman choosing to rig his gear with a non durable rope, when the average price for a durable float line is less than 1/2 this price.

Stiff Endlines

In March 2006, Norm Holy produced two versions of a stiff endline. The first version was constructed of 3/8" outer diameter rubber sections, with an EPDM rubber hardness of 60. These were cut into approximate 6" sections and strung over a 3/16" inner core of braided polyethylene with a 4800 pound breaking strength.



This rope was fished off Cousins Island in Yarmouth, Maine during May and June of 2006. This rope was problematic for a few reasons. The rubber abraided and split off. This was due to the strain on the rope caused by a trap being hung down. The hang down caused the rope to be pulled very tight and was compressed between the hauler disks. The inside rope rubbed against the rubber outer and stripped the rubber. The rope had to be cut to be removed from the hauler. A section of this damaged rope was mailed to Norm Holy

in June 2006. This rope was also very difficult to rig and had to be changed each time gear was moved to a different depth. The inner core of the rope stretched causing gaps between the rubber pieces. This rope did not coil on deck.

The second version of stiff rope was constructed of 7/16" outer diameter rubber sections, with an EPDM rubber hardness of 60. These were cut into 6" sections and strung over a 3/8" inner core of twisted polypropylene with a 2300 pound breaking strength. This rope was fished from May to November in York, Maine. The deployment was successful from an operational standpoint. The rope ran through the hauler and proved durable. However, the rope was extremely cumbersome to fish, and rope

lengths required changing each time the gear was moved. The rope also fouled up quickly and was difficult to clean, but it did survive the hot tank.

In August 2006, a third version was constructed of 1/2" outer diameter rubber sections, with an EPDM rubber hardness of 60. These were cut into 6" sections and strung over a 5/16" inner core of braided polyethylene with an 8000 pound breaking strength. This rope was once again fished from Cousins Island in Yarmouth, Maine from September to November 2006. This rope was difficult to handle. The rope fouled quickly and slipped in the hauler once fouled. The sections would jam on occasion and damage the ends of the rubber sections.

Rope	Zone	Fouling	Chafing	Hangups	Noise	Kinking	Durability	Handling
3/8"	F (N=1)			2	5	3	2	1
7/16"	G (N=1)	3	3	3	3	3	3	1
1/2"	F (N=1)	1	3		5	2	2	2

1=terrible, =average; 5=excellent

All three versions of this rope tested "terrible" in the rope handling category (Table 7). This type of rope poses serious operational feasibility issues which would need to be addressed. In the absence of proof that this concept would be whale safe, and not potentially pose more of a threat by getting caught in whale baleen, further field testing of this rope is not planned for the next phase of this project.

Summary of Stiff Rope

In summary, the stiff rope was rated poorly for handling and therefore is not operationally feasible. There have also been some serious questions raised about whether or not this rope would be whale safe, or if the rubber pieces could cause more of a risk for whale entanglement.

Based on a lack of understanding of whether this rope is whale safe, and the many operational issues associated with fishing this rope, the MLA does not recommend any additional production or field trials of this rope.

Outreach and Coordination

The MLA did quite a bit of outreach to lobstermen to inform them of the ongoing research on experimental ropes with a goal of helping to develop whale safe gear. Among the meetings that MLA attended includes:

- Introduced the 2006 rope testing project at the May 2006 MLA Directors meeting.
- The MLA attended the Consortium for Wildlife Bycatch Reduction Annual Meeting in June 2006.
- The MLA hosted Norm Holy aboard two lobster boats to observe the Consortium's ropes being field tested (a summary of this meeting and pictures is included in Appendix H).
- The MLA attended the Right Whale Consortium Meeting and Consortium for Wildlife Bycatch Reduction meeting in November 2006.
- The MLA hosted members of the Consortium Tim Werner, Scott Kraus and Norm Holy at an MLA Directors meeting in November 2006 (meeting summary attached in Appendix I).
- The MLA attended the Take Reduction Team meeting in December 2006.
- The MLA planned and hosted a seminar at the Maine Fishermen's Forum on Whale Safe Gear which highlighted the Consortium's work in March 2006 (seminar agenda and presentation attached in Appendix I)
- The MLA attended a Consortium for Wildlife Bycatch Reduction meeting in March 2007.
- The MLA held many more discussions with industry members, Maine DMR and others over the course of the year.



Maine Lobstermen's Associations Issues of Concern with Pending Whale Rules

Maine Lobstermen are Committed to Whale Conservation

- Involved with NOAA's North Atlantic Large Whale Take Reduction Team since its inception in 1997
- Maine lobstermen have been trained to participate in gear disentanglement network
- Maine lobstermen have a 98% compliance with existing whale regulations
- Maine lobstermen have pioneered and tested new gear technologies including break away links, low profile lines and vertical lines
- Maine lobstermen have supported many elements of the Proposed Rules such as rope marking programs, buoy marking programs, weak link provisions.
- Maine lobstermen will comply with sinking groundline provisions in areas where right whales and lobster gear interact, ie Jeffreys Ledge off southern Maine.
- Maine lobstermen voluntarily participating in rope buyback program

Maine Lobstermen and Right Whales Rarely Interact

Over the past 5 years, right whale sightings which have led to DAM zones off the Maine coast have occurred on average 57 miles from shore, except for Jeffrey's Ledge off the coast of southern Maine where these whale sightings have averaged 31 miles from shore.

Of the more 7,000 licensed Maine lobstermen, only four are known to fish more than 40 miles from shore and only 225 are known to fish more than twelve miles from shore.

Huge Economic Costs for Questionable Conservation Benefit

- \$10,000 to \$15,000 to convert gear from floating to sinking line (Table 1)
- Average annual rope replacement costs expected to increase 10 to 20 fold (Table 2)
- Increased time and labor costs to convert, replace and maintain gear
- Increased time and labor costs associated with fishing sinking gear that is hung down, chaffing, especially in poor weather
- Increased costs to replace lost lobster traps and rope due to part offs
- Loss of income due to inability to fish lobster lost lobster traps due to issues replacing trap tags
- Safety concerns due to gear hangdowns, rope snapping off, boat stability
- Costs of non-compliance with program

The Government Accountability Office's July 2007 report on the pending whale rules found that "...uncertainties remain regarding how many fewer serious injuries and mortalities will occur as a result of this requirement." The report also states "... It (NMFS) lacked key data on fishermen's ability to absorb these costs without going out of business, NMFS could not fully assess the impacts that the cost of gear modifications would have on fishing communities."

2006 Overview of the Maine Lobster Industry

Maine's lobster industry landed over 72 million pounds valued at nearly \$300 million
The industry is comprised of 7,032 owner operator businesses

- 5,764 commercial license holders, 860 students license holders, 408 apprentice license holders
- <1,400 hold federal permits (cannot fish outside the state waters 3 mile line)

What Needs to Be Done to Implement Practical Whale Rules

- Analysis on conservation benefit to whales
 - Whale foraging studies, whale tagging studies, whale/gear probability studies
- Analysis on economic costs to Maine's lobster industry

July 2007

Economic Impacts of Changing from Floating to Sinking Lines
 (Figures provided by the Gulf of Maine Lobster Foundation)

Table 1 Average Cost of Float Rope compared to Sink Ropes						
	price/lb	lbs/coil	cost/coil	% increase cost	Cost / FT lobsterman*	Avg 54 coils groundline / full time lobsterman
poly rope	\$1.40	38	\$53.20		\$2,873	
3/8" sink rope	\$2.10	48	\$100.80	89%	\$5,443	
7/16" sink rope	\$2.15	60	\$129.00	142%	\$6,966	
1/2" sink rope	\$2.25	75	\$168.75	217%	\$9,113	

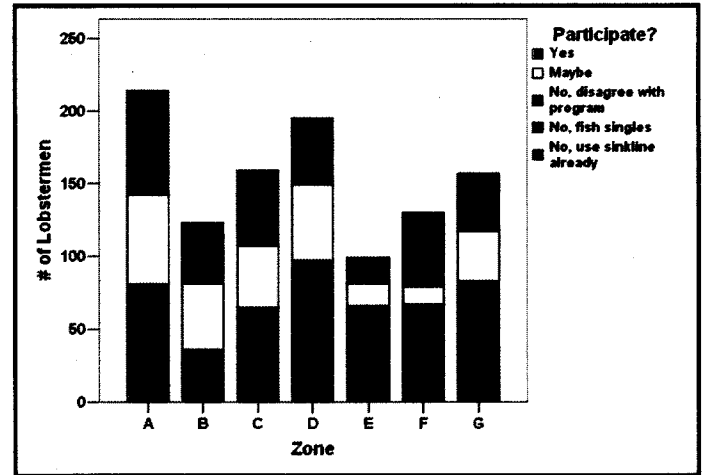
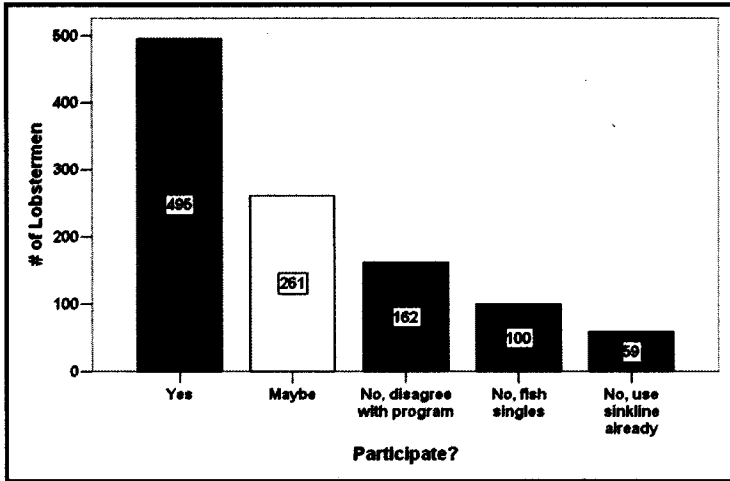
These figures must be doubled for many full-time lobstermen who maintain two "gangs" of gear: pairs or triples in the summer inshore fishery and trawls in the winter offshore fishery.

Table 2 Annual Replacement Cost of Poly compared to Sink Ropes					
	Rope type	# years fished	Cost to replace	Annual Replacement Cost	% Increased Annual Cost
Least durable scenario	Float rope	5	\$2,873	575	
	3/8" sink rope	1	\$27,215 (over 5 yrs)	5,443	847%
	7/16" sink rope	1	\$34,830 (over 5 yrs)	\$6,966	1,111%
	1/2" sink rope	1	\$45,565 (over 5 yrs)	\$9,113	1,485%
Most durable scenario	Float rope	10	\$2,873	287	
	3/8" sink rope	3	\$18,143 (over 10 yrs)	1,814	532%
	7/16" sink rope	3	\$23,220 (over 10 yrs)	2,322	709%
	1/2" sink rope	3	\$30,377 (over 10 yrs)	3,038	959%

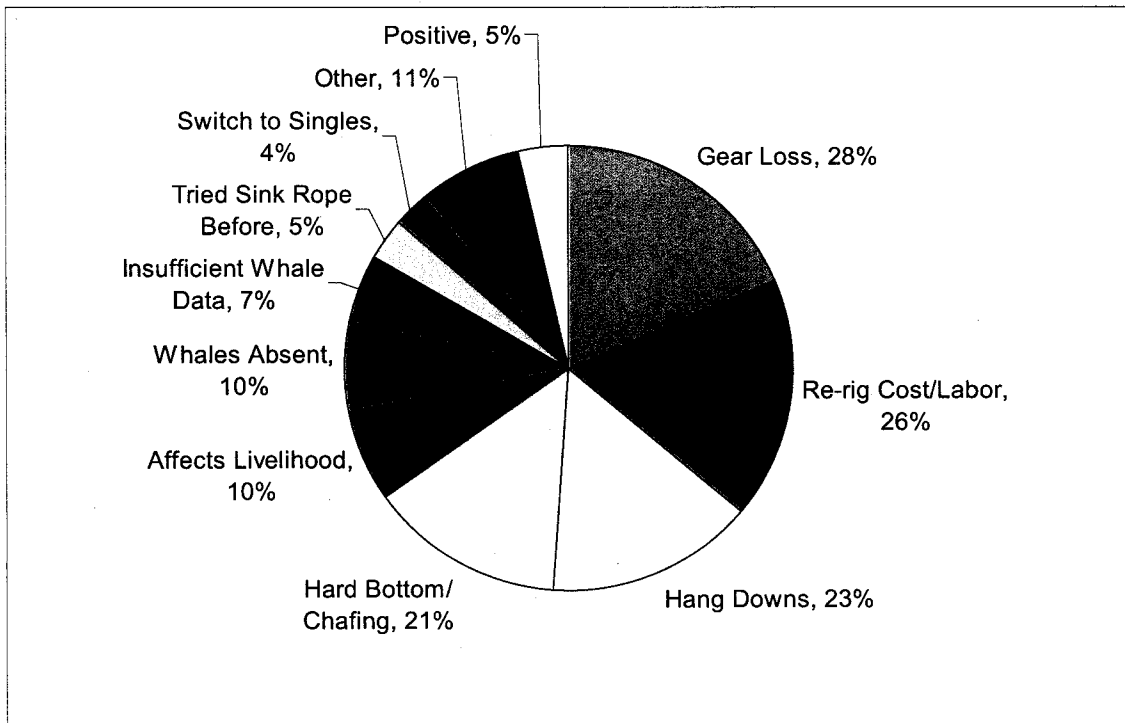
Response to Voluntary Float Rope Buyback Program

(Figures provided by the Gulf of Maine Lobster Foundation)

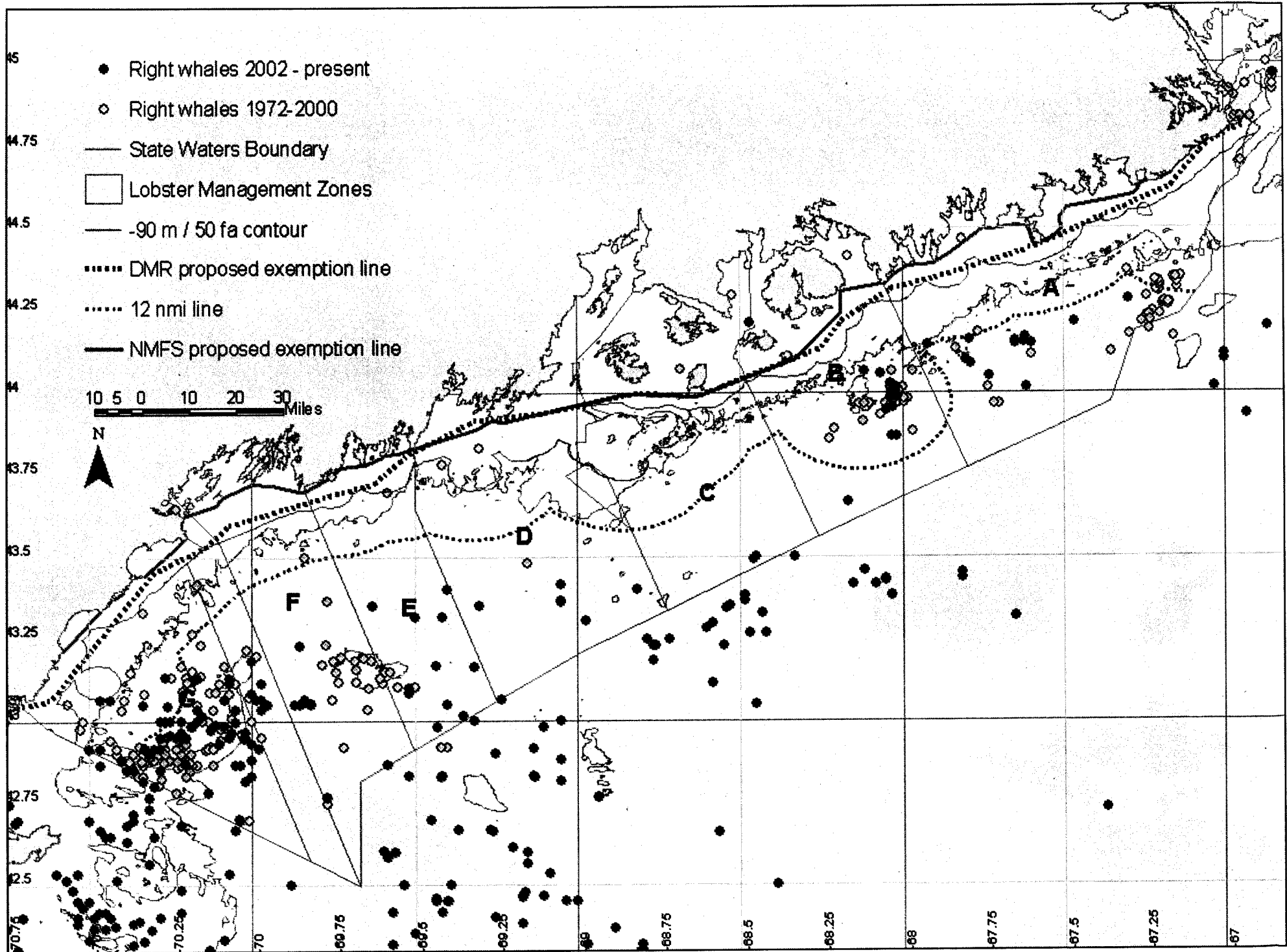
The following graphs and chart show lobstermen responses to Gulf of Maine Lobster Foundation's survey gauging interest in participating in a voluntary floating rope buyback program. The Survey was mailed to 7,000 license holders with 1,080 returns.



These graphs show a strong interest in the program, particularly in the western most areas of the state where the bottom tends to be less rocky.



This graph identifies lobstermen's concerns with regard to fishing sinking groundlines.



Sydney Anwar 2002

C. Rubicam, 8/9/02, DMR Maine Whale Plan