

Long Island Sound Derelict Lobster Gear Assessment, Removal and Prevention

Final Report

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Performance Narrative

In 2012, Cornell University Cooperative Extension (CCE) received a NOAA Marine Debris grant to assess, remove and prevent derelict lobster gear in the Long Island Sound (LIS). Fieldwork was carried out successfully from August 2012 – December 2013 in the LIS. Sixty-two research trips were conducted on commercial lobster vessels removing 4,635 derelict lobster traps from the LIS. As a result of this project, 19,840 total acres of bottom area were restored and 105.1 metric tons of derelict lobster traps were recycled and converted into renewable energy.

The goals of this project were to; (1) Sustain a multi-community based partnership to systematically address the LIS derelict lobster gear problem; (2) Formulate an accurate evaluation of the quantity of derelict lobster gear currently impacting the study area; (3) Determine the biological impacts of derelict lobster gear on the living resources within the study area; (4) Complete a controlled and precise removal program with a strict protocol so as to not disrupt ongoing legal harvest and insure that retrieved derelict lobster gear is managed in a manner consistent with New York State Department of Environmental Conservation (NYSDEC) regulations; (5) Reclaim 31 square miles of fishing ground; (6) Effectively reduce the impact of “ghost fishing” lobster traps and their impact on the Southern New England (SNE) lobster stock within the LIS; and (7) Effectively reduce the impacts of “ghost fishing” lobster traps and their impacts on NOAA Trust Resources and “Species of Greatest Conservation Need” (SGCN) such as American lobster, blue crab, horseshoe crab, tautog, oyster toadfish, and cunner.

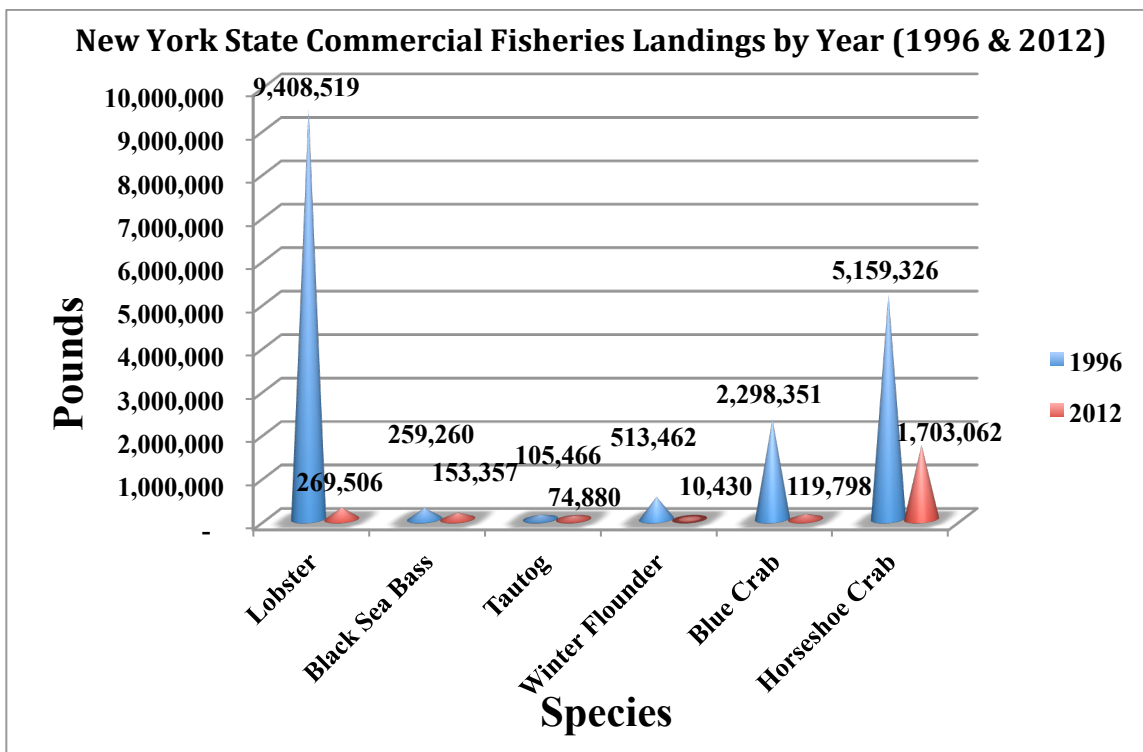
This project encompassed a comprehensive program that addressed the threats of derelict lobster traps “ghost fishing” effecting the marine environment in the New York waters of the LIS. Derelict fishing gear is defined as any intact gear without a valid trap tag or not properly marked (buoyed) or any trap part, warp or buoy. Adding to the ongoing derelict trap problem is the normal gear loss associated with current active fishing activities, which is a continuing and compounding occurrence. Ghost fishing, as defined by Smolowitz (1978), is “the ability of fishing gear to continue fishing after control of that gear is lost by the fishermen.” Removal of derelict lobster traps eliminated the threat of “ghost fishing” to marine species in the LIS. The precise extent of the problem from derelict lobster gear “ghost fishing” within the New York LIS is unknown at this time. Only an estimate of the quantity of derelict gear that is “ghost fishing” can be offered. A ten percent loss from active fishing is the estimate used by the Atlantic States Marine Fisheries Commission (ASMFC) in their Lobster Trap Program (ASMFC, 2009). Using this rate results in a conservative estimate of 132,000 lost traps alone that may have accumulated in New York’s LIS based on the annual lobster trap usage from 1999 to 2009 (NYSDEC, 2009). Intentional abandonment of lobster gear was a direct result of the unfortunate lobster mortality that occurred in the LIS. Lobstermen found it economically unfeasible to retrieve gear due to the decline in lobster catch and the absence of an organized disposal and storage program. Trap abandonment and improper disposal of surplus traps are encouraged by the lack of land storage access. This is due mainly to the prohibitive cost of land storage near the coast and this facilitated the practice of wet storage, i.e. storing of unused lobster traps in water. Based on these factors, it is certain that the largest threat throughout the LIS is to do nothing about the derelict lobster gear problem. The most immediate threat and at the same time opportunity, is the

problem of derelict traps that are “ghost fishing.” While the traps are required to have escape vents that break free over time, all vents may not break free. Additionally, derelict lobster traps may become submerged over time in the LIS soft mud bottom areas. This would effectively render the traps ventless. Marine species captured in derelict lobster traps experience starvation, cannibalism, infection, disease or prolonged exposure to poor water quality, i.e. low dissolved oxygen (Van Engel, 1982, Guillory, 1993). Derelict lobster gear damages sensitive habitat and continues to capture both target and bycatch species, leading to reduced fitness and significant, as well as, delayed mortalities (High and Worlund 1979; Guillory, 1993, 2001; Bullimore et al, 2001). According to the Comprehensive Wildlife Conservation Strategy, several species in need of conservation in the LIS are in jeopardy by the continued “fishing effort” these derelict traps impose on the resource. American lobster, black sea bass, tautog, winter flounder, blue crab, horseshoe crab, oyster toadfish, cunner, along with many other species were retrieved from derelict lobster traps during this project. Removing derelict lobster traps that were actively “ghost fishing” from the LIS reduced the threat imposed on these species by reducing mortality associated with “ghost fishing” and further protected them via habitat restoration. In particular, reducing the threat to American lobster within the project area was vitally important. Rebuilding strategies for the Southern New England lobster fishery are focused on reducing not only harvest removals but all other identifiable mortality factors (ASMFC, 2009). Incidental mortality to lobsters and other marine species due to derelict lobster gear “ghost fishing” was mitigated by the removal of this gear.

Historic and Current State of selected NOAA Trust Resource Species

The LIS is a valuable habitat for many species including NOAA Trust Resource Species and SGCN. The commercial NYS landings for lobster, black sea bass, tautog, winter flounder, blue crab and horseshoe crab have been decreasing since 1996. CCE removed these species from derelict lobster traps that were “ghost fishing” in the LIS. See Figure 1 for commercial fishery landings of lobsters, black sea bass, tautog, winter flounder, blue crab and horseshoe crab in NY for 1996 and 2012.

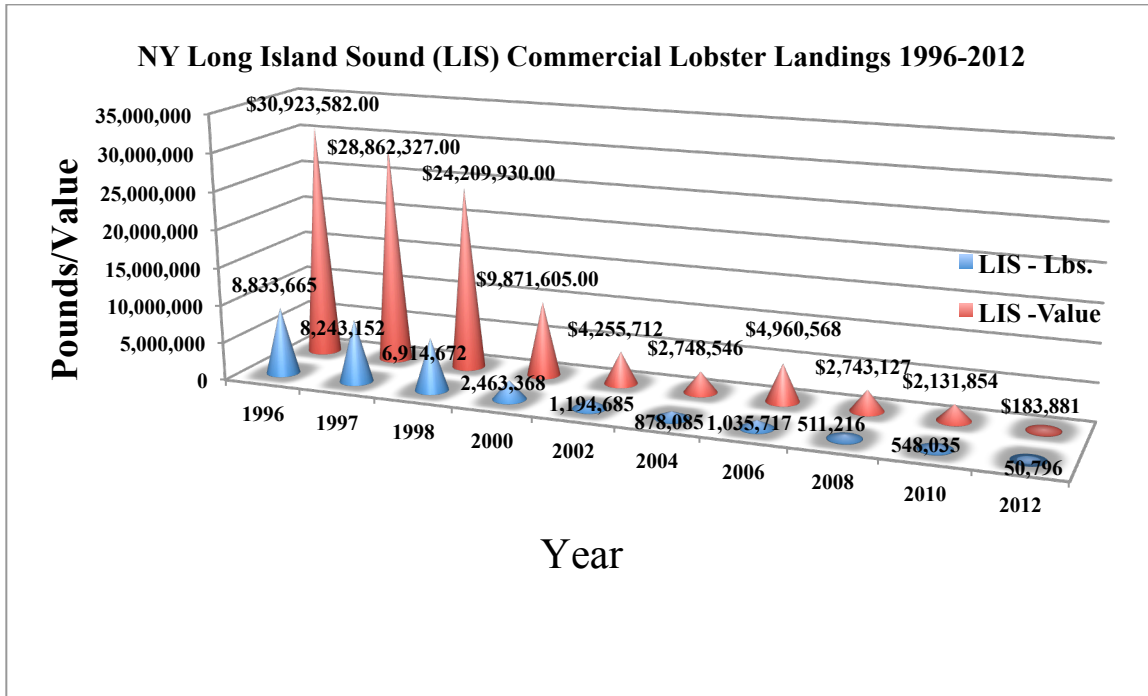
Figure 1



American Lobster

Commercial lobster landings in New York were 9.4 million lbs. (LIS 8.8 millions lbs.) in 1996 with an ex-vessel value of \$32.9 million (LIS \$30.9 million). In 2012, commercial lobster landings plummeted to 269,506 lbs. (LIS 50,796 lbs.) with an ex-vessel value of \$975,610 (LIS \$183,881). See Figure 1 above for New York lobster landings for 1996 and 2012 and Figure 2 for New York LIS lobster landings for 1996-2012.

Figure 2



- ACCSP preliminary reconciled landings (monthly, not trip based) 2008, 2010, & 2012

The Southern New England (SNE) lobster stock is at a low level of abundance and is experiencing persistent recruitment failure caused by a combination of environmental drivers and continued fishing mortality (ASMFC, 2009). The Atlantic States Marine Fisheries Commission's (ASMFC) American Lobster Management Board approved a closed season for lobster fishing in the LIS, Lobster Management Area 6 (LMA 6) (ASMFC, 2012). NYSDEC met with LIS lobstermen and settled on final closure dates, which will occur annually in the timeframe of September 8 through November 28 (ASMFC, 2012). During this time all lobster traps have to be removed from the water to reduce fishing effort. ASMFC, in approving the required fishing effort reduction plan for New York, recognized the passive benefit/reduction of removing over 11,000 derelict lobster traps "ghost fishing" in the LIS for all projects combined. This project reduced the passive effort on American lobsters by the removal of 4,635 derelict lobster traps.

Black Sea Bass

Commercial black sea bass landings in NY were 259,260 lbs. in 1996 with an ex-vessel value of \$466,620. In 2012, commercial black sea bass landings in NY were 153,347 lbs. with an ex-vessel value of \$527,857 (NOAA, 2012). The 2012 stock assessment update indicates that black sea bass continues to be rebuilt; it is not overfished and is experiencing overfishing. The Long Island Sound is a valuable habitat for black sea bass. The removal of derelict lobster traps in the LIS decreased the mortality threat to this species. Eight percent of the derelict lobster traps that were "ghost fishing" and removed for this project had one or more black sea bass in them.

Tautog

Commercial tautog landings in NY were 105,466 lbs. in 1996 with an ex-vessel value of \$132,444. In 2012, commercial tautog landings in NY were 74,880 lbs. with an ex-vessel value of \$250,168 (NOAA, 2012). According to the revised 2011 stock assessment update (March 2012), the coastwide stock of tautog is overfished and subject to overfishing (ASMFC, 2014). Twenty three percent of the derelict lobster traps removed from the LIS had 1 or more tautog in them.

Horseshoe Crab

Commercial horseshoe crab landings in NY were 5,159,326 lbs. in 1996 with an ex-vessel value of \$1.5 million. In 2012, commercial horseshoe crab landings in NY were 1,703,062 lbs. with an ex-vessel value of \$1.4 million (NOAA, 2012). Little is known about the status of the horseshoe crab population. Limited time-series of horseshoe crab population data make it difficult to assess its status. However, the 2009 stock assessment and peer review concluded increasing trends in abundance in the Southeast and Delaware Bay regions, and decreasing abundance in the New York and New England regions (ASMFC, 2014).

Blue Crab

Commercial blue crab landings in NY were 2,298,351 lbs. in 1996 with an ex-vessel value of \$1.7 million. In 2012, commercial blue crab landings in NY were 119,798 lbs. with an ex-vessel value of \$240,793 (NOAA, 2012).

Winter Flounder

Commercial winter flounder landings in NY were 513,462 lbs. in 1996 with an ex-vessel value of \$686,981. In 2012, commercial winter flounder landings in NY were 10,430 lbs. with an ex-vessel value of \$15,906 (NOAA, 2012). Winter flounder stocks were most recently assessed at the 52nd Northeast Regional Stock Assessment Workshop/Stock Assessment Review Committee (SAW/ SARC 52) in 2011. SAW/SARC 52 determined that the SNE/MA stock was overfished but not experiencing overfishing (ASMFC, 2014).

Methodology

The assessment methodology portion of the project started with the review of the 1999-2012 NYSDEC commercial permit files and the annual lobster recall data from the New York LIS study area. This identified the names, addresses and telephone numbers for lobstermen from the study area and determined the number of lobster traps fished by individual permit holders. These steps identified the study area permit holders and the amount of lobster trap gear fished for the period 1999-2012. A survey was then prepared and mailed with follow-up telephone contact. The information collected was limited to quantity, location and date of abandoned lobster trap gear including a study area map for location (See Survey, Survey Map & Survey Results in Other Attachments). The GIS maps completed during previous derelict lobster trap removal projects conducted by CCE were used to target the highest density of derelict traps in the LIS. In addition, CCE utilized the expertise and empirical knowledge of active lobstermen from the study area to identify known sites of lobster trap abandonment. The composite outcomes of this

assessment methodology provided quantified (actual) information on the abundance of derelict gear and its location within the study area. A targeted derelict lobster trap removal program was implemented based upon the assessment methodology described above. Active commercial lobstermen with vessels equipped to haul and transport large quantities of lobster traps were contracted by CCE for the vessel research trips. Participating lobstermen were paid a per diem charter fee of \$750.00 for a ten-hour day covering all operating costs and crew compensation. Because of the regulatory concerns in retrieving derelict lobster gear, participating lobstermen had to meet the project selection criteria which included an active commercial lobster license and vessel marine liability insurance.

CCE recruited 5 lobstermen from the port of Mount Sinai, 4 lobstermen from the port of Mattituck, and 4 lobstermen from the port of Huntington/Northport that met the project selection criteria and were committed to participate in this project. As the project progressed only 6 lobstermen, 5 from Mount Sinai and 1 from Northport, were available to conduct vessel research trips for this project. The other lobstermen did not meet the project selection criteria during the project timeline. CCE continued to try recruit more lobstermen from each port to participate in this project but could not locate any who met the project selection criteria and those that did were not available during the project timeline. CCE started vessel charter trips in August 2012.

A specialized long line grapple system was used to retrieve derelict lobster traps. Lobstermen who participated were trained by CCE staff on how to use the long line grapple system. The basic procedure that the project team followed and provided to fishermen while using the long line grapple system follows:

1. The grapple system consists of a towrope, a stainless steel weight, and a main line with attached grapple hooks. The stainless steel weight weighs approximately 100 lbs. and should be towed at a scope of about 2:1. The vessel should maintain a tow speed as close to 2 knots as possible as this will ensure the system stays in contact with the sea floor. The main line consists of a series of 10 grapple hooks spaced approximately 50 ft. apart for a total length of 500 ft. The grapple hooks themselves are four pronged and constructed from 3/8" round, steel bar and hang from the main line by a 24" length of 1/4" chain. The grapples are designed to straighten and release if they encounter a load greater than the capacity of the vessel. If this occurs, when the grapple is retrieved a short length of pipe is inserted over the straightened prong and it is bent back into a hook shape.
2. The grapple system is deployed main line first. Each of the 10 hooks is thrown overboard successively while the vessel is moving forward at idle speed. Once all 10 hooks are in the water, the vessel is put in neutral and the stainless steel weight is pushed overboard. The vessel returns to forward gear and the appropriate amount of towline is feathered out. Once the correct towline length is reached the towline is anchored to a cleat and the grapple system is now completely deployed and functioning. The vessel then proceeds to make a series of slow, gradual turns back and forth across 180° of the targeted sea floor.
3. Interaction of the grapple system with targeted derelict gear is indicated by a slowing of the vessel's tow speed. CCE also relies on the lobstermen and their experience and inherent knowledge of vessels to know when to retrieve the gear. The grapple system

returns to the vessel via the boats pot hauler in the reverse order described in #2. Any snagged gear is tied off to the vessel until the entire grapple system has been retrieved. The derelict gear is then transferred to the hauler and brought on board and all relevant data is recorded.

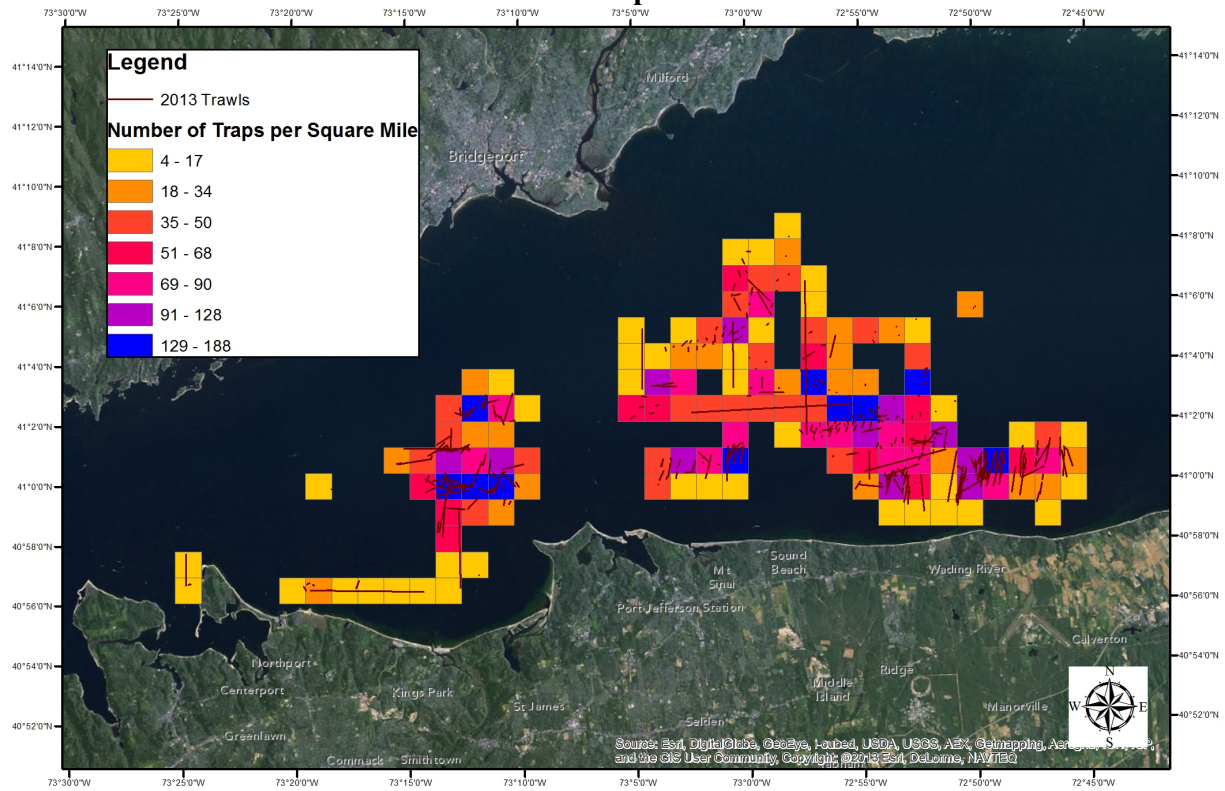
Specific Monitoring Techniques

The following describes the specific monitoring techniques utilized throughout this project. Once a trap was retrieved, species were removed and recorded. The following information was catalogued: Species identification and tallies; Sex and size of lobsters (carapace length); abdomen color; incidence of berried female lobsters; color of eggs, cull claws, shell condition, shell disease, and any other damage was recorded for lobsters. All other species were counted and weighed then noted if alive or dead. In addition, traps were catalogued for their condition based on physical appearance (excellent, moderate, poor), if the escape vent was working, the presence/absences of trap escape vents, location of escape vent, and all identifying markings were recorded, i.e. trap tags, stencils or other information. In addition, the percentage the trap was buried in the mud and if this submergence rendered the vent unworkable along with the encrustation of the escape vent and if the encrustation causes the vent to fail.

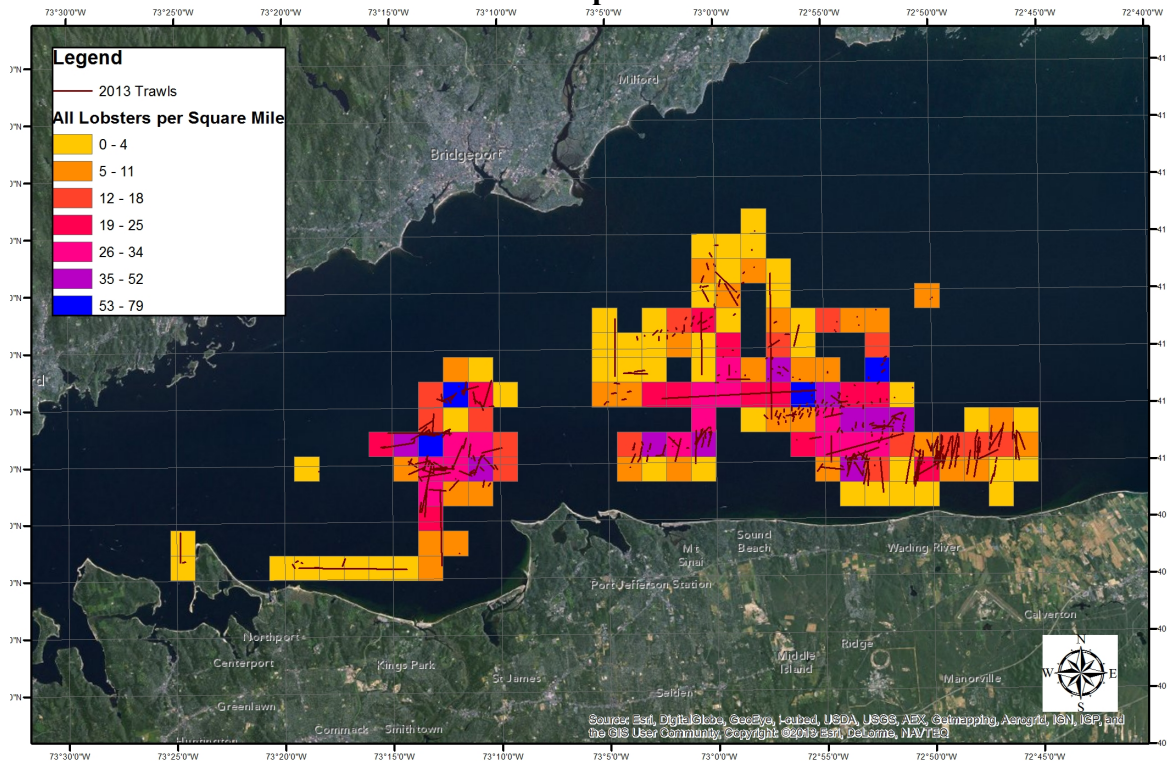
Two CCE staff members were aboard each vessel for every research trip to record all scientific data. Derelict lobster gear was returned to the disposal containers at shore-side sites at the Village of Northport and Mt. Sinai. These sites were used because of their convenient locations relative to active fishing ports and spatial availability across the New York LIS coastline. The owners of any identified traps were notified and given the opportunity to retrieve the gear. Unclaimed material was recycled through the program. Gershow Recycling provided recycling containers for each port. The metal and non-burnable marine debris was recycled through Gershow and the burnable marine debris was recycled through Covanta Energy. The burnable marine debris recycled through Covanta Energy was converted into renewable energy.

Cornell Marine Program staff used a hand held Garmin GPS unit to record the areas covered with the long line grapple system during each research trip. CCE recorded the start and end of each tow made with the grapple by marking waypoints. The starting point was defined as the deployment of the grapple and the end point when the grapple came in contact with derelict gear and retrieval of the grapple was initiated. GIS maps of the areas that lobster traps and lobsters were recovered from were created using the GPS data. The following maps were generated using this information. Map 1 illustrates the number of traps recovered per square mile and Map 2 illustrates the density of lobsters recovered per square mile. (See additional GIS Maps in Other Attachments).

Map 1



Map 2



Deviations from Original Plan/Challenges Faced

Due to Hurricane Sandy that made landfall in the Mid-Atlantic region on October 28, 2012, fieldwork was delayed several months on this project. CCE applied for an extension and the project was complete December 31, 2013. CCE did not conduct vessel research trips from the port of Mattituck for this project. Commercial lobstermen at this port did not meet the requirements to participate in the project or were not available during the project timeline. Project activity was expanded at the ports of Northport and Mount Sinai to complete this project. The only limiting factors for this project were weather conditions and the availability of commercial lobstermen that met the project requirements.

Final Project Timeline

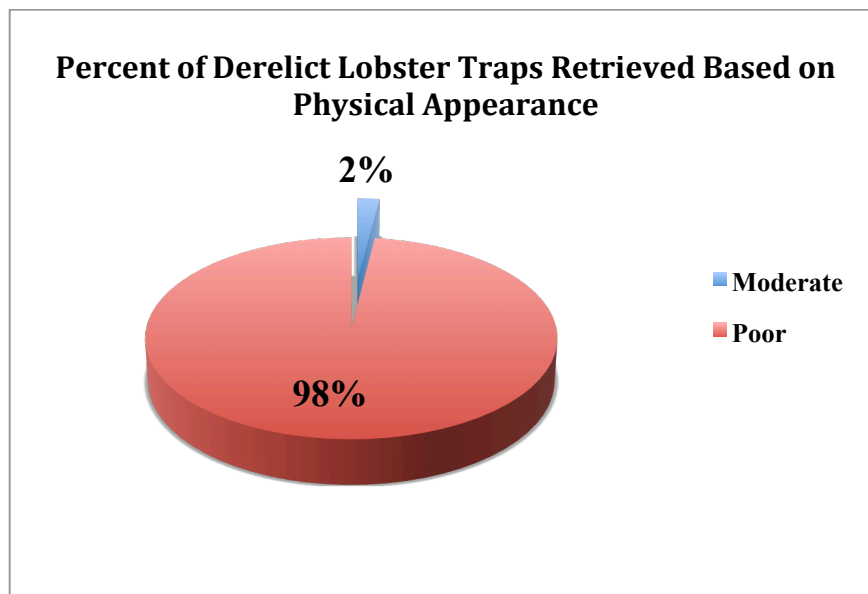
	June-July 2012	Aug.- Dec. 2012	Jan.-July 2013	Aug.-Oct. 2013	Nov.-Dec. 2013	Jan.- Mar. 2014
Solicit information concerning derelict gear	X	X	X	X	X	
Sign up volunteer vessel captains	X		X			
Order necessary equipment and supplies	X					
Conduct training program for use of long line drop chain grappling gear/technique for participating commercial lobster fishermen	X			X		
Prioritize derelict gear information to establish efficient gear removal schedule	X	X				
Remove and recycle gear	X	X	X	X	X	
Complete all data entry, data summaries and analyses					X	X
Complete final report					X	X
Conduct educational outreach	X	X	X	X	X	X

Accomplishments Results/Outcomes

CCE completed 62 research trips with experienced lobstermen from the ports of Northport and Mt. Sinai combined, from August 2012-December 2013. CCE retrieved 4,635 derelict lobster traps from the LIS study area. As a result of this project 19,840 total acres of bottom area were restored and 105.1 metric tons of derelict lobster traps equivalent to 231,750 lbs. were recycled and processed into clean renewable energy at the Covanta Energy “energy from waste” waste recovery facility in Hempstead, NY. Of these 4,635 derelict lobster traps, 25% contained 1 or more lobsters (1270 live / 70 dead). Other species removed from these traps included; black sea bass, cunner, tautog, whelk, horseshoe crab, rock crab, hermit crab, spider crab, blue crab, oyster toadfish, conger eel, cod, sea robin, summer flounder, scup, sculpin, kingfish, winter flounder, Atlantic herring, butterfish and red hake. All species were immediately returned to the waters of the LIS.

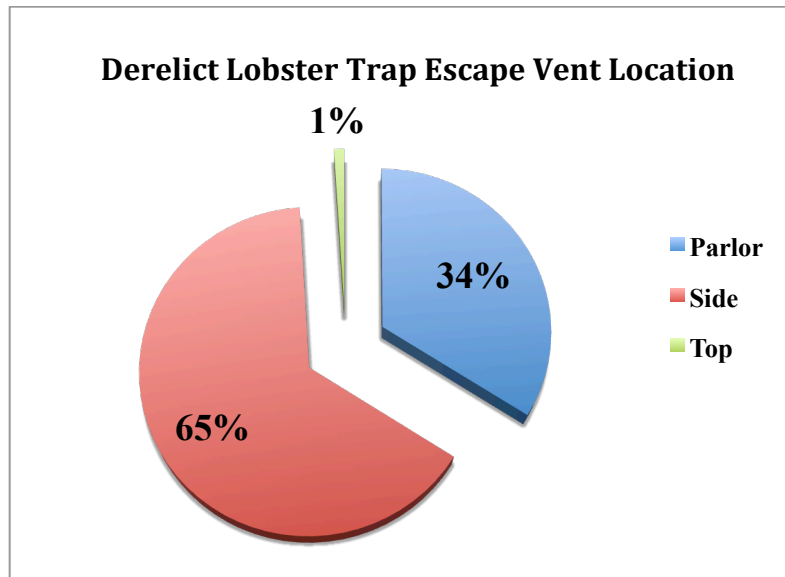
The retrieved lobster traps were catalogued for their condition based on physical appearance (excellent, moderate, poor). Traps that were catalogued as excellent included working legal escape vents and could be returned to the water to fish for lobsters. Moderate condition traps needed some repair to function properly and poor condition traps could not be repaired to catch lobsters. None of the lobster traps retrieved for this project were in excellent condition, 2% of the lobster traps were in moderate condition and 98% of the lobster traps were in poor condition (See Figure 3).

Figure 3



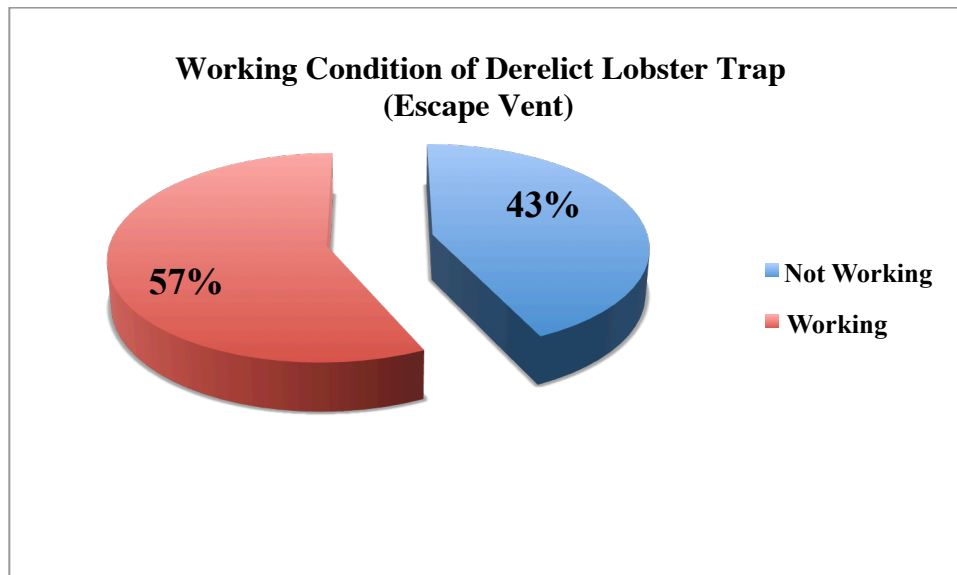
The derelict lobster traps were checked for the presence/absence of an escape vent, the location of the escape vent and if the escape vent was working. For this project seven lobster traps did not have an escape vent because they predated the requirement. The escape vent location of the remaining 4,628 lobster traps was either on the side, parlor (rear) or top of the trap (See Figure 4).

Figure 4



The derelict lobster traps were then checked for working or non-working escape vents. Lobster traps are required to have escape vents that are installed with biodegradable metal rings that break free over time, but all vents may not. If the escape vent was working the metal rings on the escape vent broke free and species captured could escape from the trap. If the escape vent was not working the metal rings on the escape vent did not break free and the trap was “ghost fishing,” rendering the trap inescapable. Fifty-seven percent of the derelict lobster traps removed from the LIS were in working condition and 43% of the lobster traps were in non-working condition (See Figure 5).

Figure 5



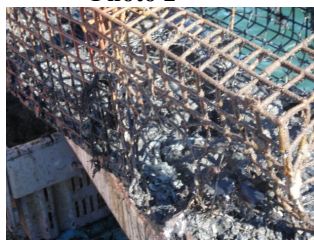
The encrustation of the lobster traps and the degree of submergence of the traps in the LIS sea floor were catalogued as follows: 0-25%, 26-50%, 51-75%, 76 -100%. The encrustation refers to the level of barnacles, stony coral, and bryozoans found on the traps (See Photo 1). The degree of submergence refers to the degree the trap was submerged in the mud on the sea floor (See Photo 2).

Photo 1



Encrustation of the lobster trap escape vent. Barnacles fastening the escape vent closed.

Photo 2



Lobster trap that was submerged in the mud on the sea floor rendering the escape vent ineffective.

Derelict traps were also monitored for whether or not the entrance or vent was buried in the LIS sea floor. The degree of encrustation and submergence of derelict traps translates to the measurement of the traps escapability. This means that encrustation or submergence over 25% starts to have a negative effect on the ability of the vent to function properly and allow trapped species out (Figure 6 & 7).

Figure 6

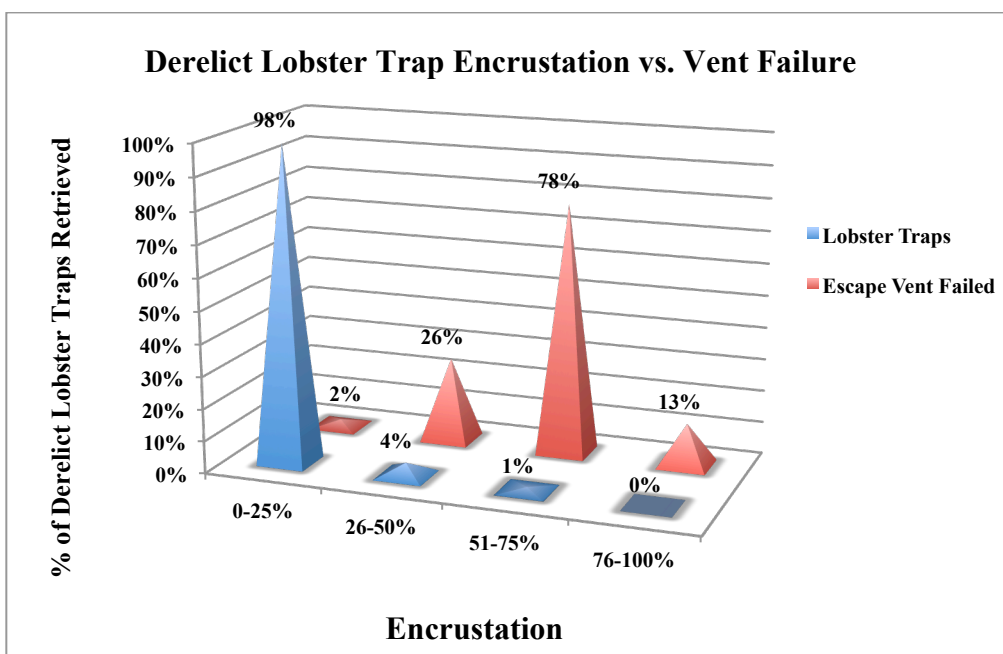
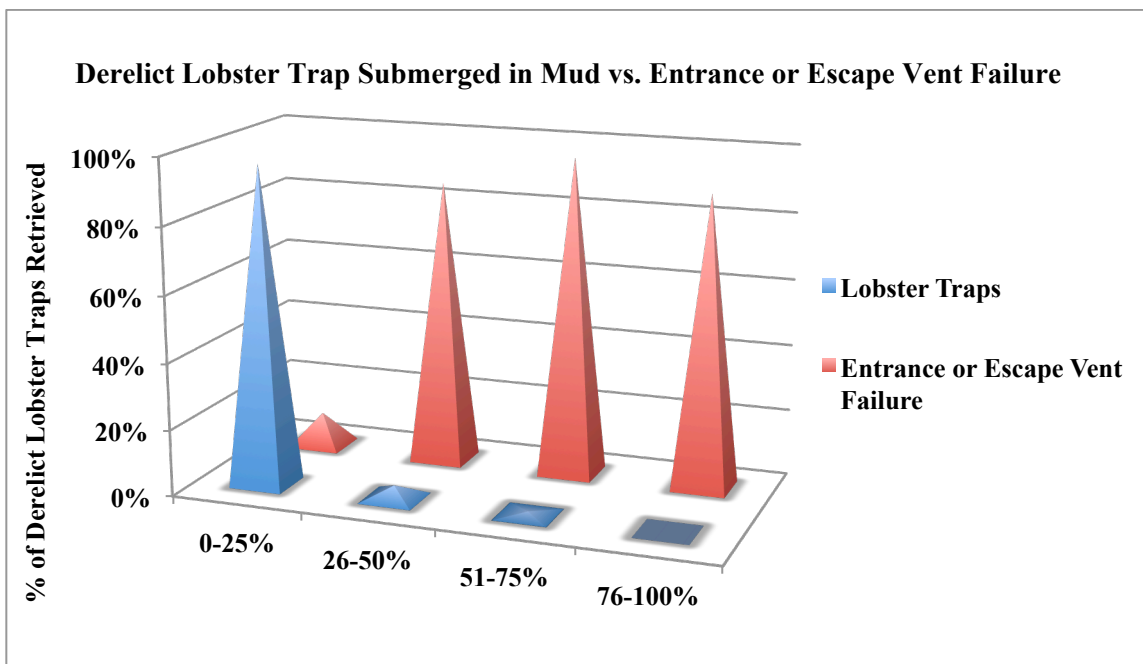


Figure 7



All live and/or dead species in the derelict lobster traps were recorded, removed and returned to the water (Figure 8). Information collected pertaining to captured lobsters included, sex, size (carapace length) and berried females (Figure 9 & 10).

Figure 8

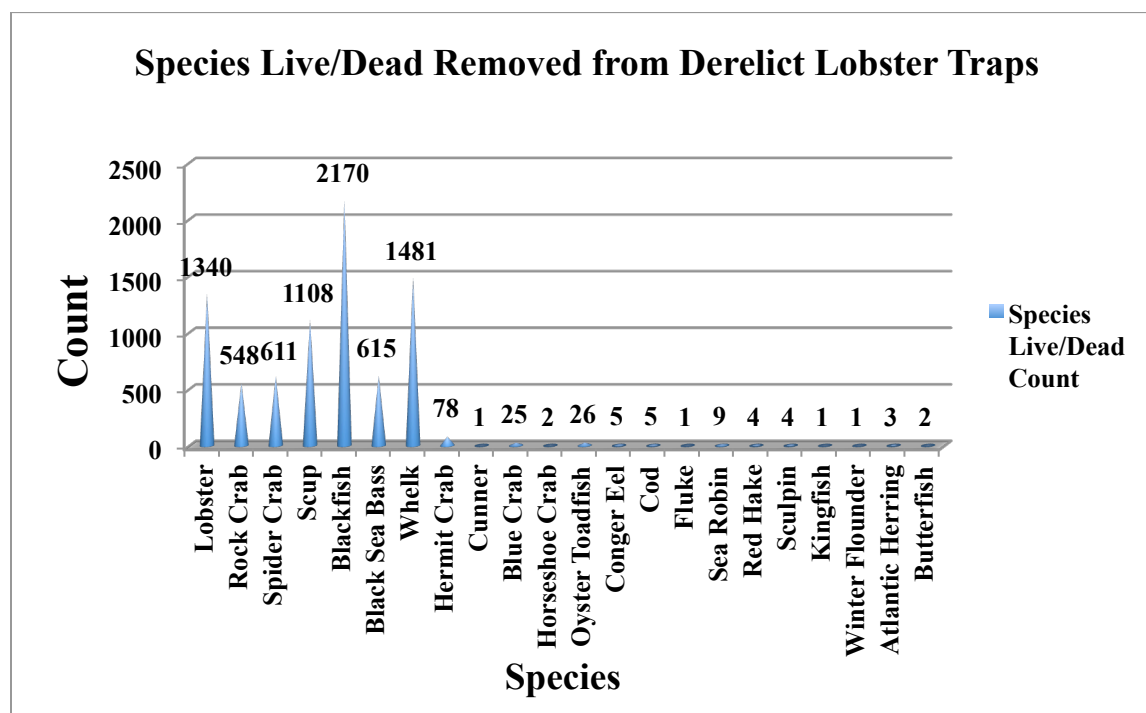


Figure 9

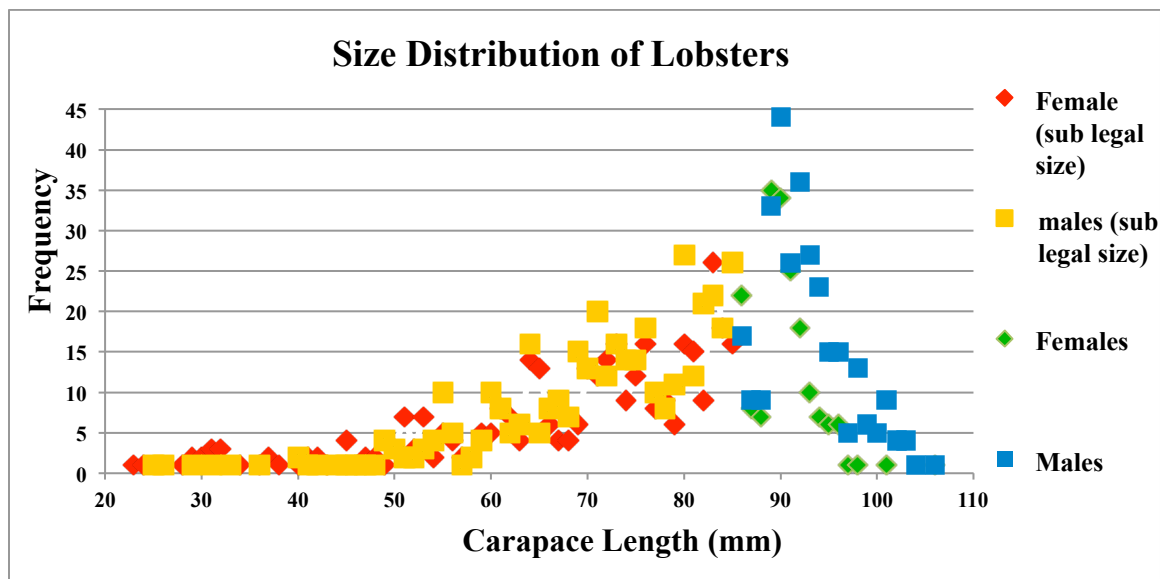
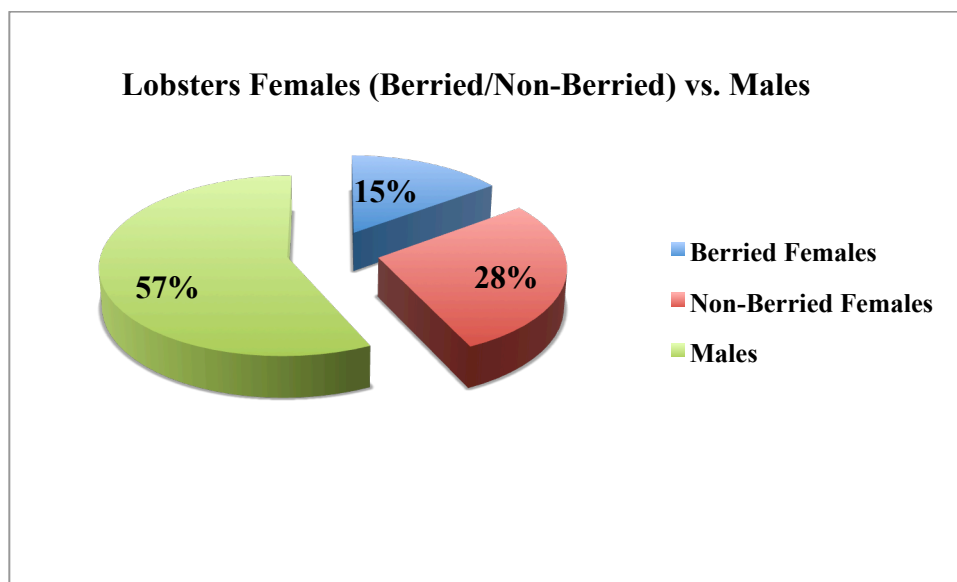


Figure 10



CCE identified and contacted the owners of 89% of the traps retrieved based on the NYS lobster trap tag information. The other 11% of the traps retrieved either did not have trap tags or were targeted traps with known owners that had already indicated to CCE that any of their recovered traps could be recycled. CCE returned 3% of the retrieved derelict lobster traps to their owners and 97% of the identifiable traps were recycled with the owner's authorization.

The successful completion of this project was achieved through the cooperation of the lobster industry, via the completion of industry surveys, planning sessions related to operational field plans and the execution of the fieldwork. This project verified that substantial quantities of

derelict lobster traps have accumulated in the LIS and that a successful methodology for the removal of these traps is possible and has been implemented.

**Area to be Improved (Expected Tons of Debris Removed)
Projected vs. Actual (Complete through December 31, 2013)**

Port	Huntington /Northport (Projected)	Huntington/ Northport (Actual To- Date)	Mount Sinai (Projected)	Mount Sinai (Actual To- Date)	Mattituck (Projected)	Mattituck (Actual To-Date)	Project Total (Projected)	Project Total (Actual To- Date)
Days at sea	10	14	40	48	12	0	62	62
Pots collected per day	80	77	80	74	80	0	4960	4635
40 Yd. containers required (400 pots/dumpster)	2	3	8	9	3	0	13	12
Weight per 40 Yd. container (50lbs/pot)	9 MT	8.2 MT	9 MT	9 MT	9 MT	0 MT	9 MT	8.6 MT
Total Weight - Metric Tons (MT)	18 MT	24.5 MT	73 MT	80.6 MT	22 MT	0 MT	113 MT	105.1 MT

**Study Area Metrics
Projected vs. Actual through December 31, 2013**

Total Study Area (Acres)	Total Area Restored (Acres) - Projected	Total Area Restored (Acres) - Actual	Total Trap Base Area (Acres) - Projected	Total Trap Base Area (Acres) - Actual
121,600	19,840	19,840	1.37	1.28

Lessons Learned

- A multi-community based partnership to systematically address the LIS derelict lobster gear problem is feasible and was successfully implemented.
- The marine habitat and the biological impacts of derelict gear on living resources were mitigated within the project area.
- Mortality of marine species within the LIS, particularly NOAA Trust Resources such as, American lobster, black sea bass, scup, tautog, winter flounder, oyster toadfish, horseshoe crab and blue crab is occurring.
- The impact of “ghost fishing” lobster traps and their impact on the Southern New England (SNE) lobster stock within the LIS was effectively reduced.
- The level of derelict lobster gear density currently impacting the project area was quantified.

- Abandoned, lost, or discarded lobster traps are a problem in the LIS study area. These traps not only contribute to the problems associated with marine debris, a significant number of them are still catching lobsters and are thus adding to “fishing effort” for lobsters in LIS.
- The act of removing derelict lobster traps from the project area reduced the threat imposed to at-risk species.
- A proven methodology was executed successfully to remove derelict lobster traps and as such can be used in the future. CCE successfully removed 4,635 derelict lobster traps in the LIS study area. It is known that there are still many more derelict lobster traps in the study area and based on this sampling it can be reasonably assumed that similar populations of abandoned lobster traps exist throughout the LIS.
- The cooperation and participation of active licensed commercial lobstermen from the study area was the single most important determining factor for the project’s success.
- Retrieving derelict gear can be accomplished efficiently through the use of the long line grappling system and methodology developed.

Outreach Activities and Products

CCE continued daily outreach at the commercial fishing docks educating fishermen about the negative effects of derelict lobster gear and marine debris. CCE distributed the lobster trap removal brochure that was designed specifically for this project to community members at each fishing port (See Other Attachments – Project Brochure). Community outreach at each port location was conducted before and after each vessel research trip. CCE staff educated community members about the importance of the project. Project signs were installed at each participating port location (See Other Attachments – Project Sign). CCE attended Long Island Sound Lobstermen’s Association meetings monthly to provide information about the project and coordinate project activities with lobstermen. CCE used the expertise and empirical knowledge of lobstermen from the study area to identify known sites of lobster trap abandonment. The lobstermen’s knowledge and expertise along with techniques and methodologies developed for this project have contributed to the success of this project. Project results, outreach materials and project videos are presented on the Cornell Cooperative Extension Marine Program website <http://ccesuffolk.org/derelict-lobster-gear-project/>.

Presentations

- This project was presented to the Village of Northport and Town of Brookhaven Harbor Committee.
- At the request of Suffolk County Legislator Sarah Anker, CCE provided an update and overview of the project to Legislator Anker and her staff. Legislator Anker’s district includes the Mount Sinai Harbor area.
- CCE staff presented this project to the Commercial Fisheries Research Foundation (CFRF) in Rhode Island. CFRF is interested in conducting a similar marine debris removal project in the waters of Rhode Island.
- On October 19, 2012, CCE participated in the New York Outdoor Education Association Conference at Brookhaven National Laboratory. Over 300 outdoor educators from New York State attended. CCE presented the project, "Long Island Sound Derelict Lobster

Gear Assessment, Removal and Prevention." CCE provided an oral project presentation followed by a comprehensive video of the project activities including at sea recovery of derelict lobster traps. After the presentation, there was a short question and answer session. To see a short video about the project go to: <https://vimeo.com/52710846>

Events

CCE hosted a marine debris project event at Cedar Beach in Mt. Sinai on October 11, 2012 to announce the award of the NOAA Marine Debris project "Long Island Sound Derelict Lobster Gear Assessment, Removal and Prevention." The event was successful in informing the public as well as government representatives about the importance and valuable benefits of the project. Seventy-five people were in attendance including lobstermen, community residents, elected officials and invited guests. An overview of the project goals, objectives and activities were presented. (See Other Attachments – Project Press Release and Project Photos). VIP guests that attended this event were:

1. Jason Rolfe (NOAA Deputy Director of Marine Debris) & Anna Manyak (Northeast Regional Coordinator of NOAA Marine Debris)
2. Emerson Hasbrouck (CCE Fisheries Specialist) & John Scotti (CCE Fisheries Specialist)
3. Sunny Suchdeva (Senator Gillibrand Representative)
4. Oliver Longwell (Congressman Bishop Representative)
5. County Legislator Sarah Anker
6. Mayor George Doll (Village of Northport)
7. Thomas Murphy (Covanta Energy)

LITERATURE CITED

- Atlantic States Marine Fisheries Commission (ASMFC). 2009. American Lobster Stock Assessment for Peer Review. Stock Assessment Report No 09-01 (supplement). 298p.
- Atlantic States Marine Fisheries Commission. 2012. *Draft Addendum XVII to Amendment 3 to the American Lobster Fishery Management Plan for Public Comment*: Online sources. Retrieved from: <http://www.asmfc.org/uploads/file/amLobsterAddendumXVIII.pdf>
- Atlantic States Marine Fisheries Commission. 2014. Species Profiles, Retrieved from <http://www.asmfc.org/species/>
- Bullimore, B. A., P. B. Newman, M. J. Kaiser, S. E. Gilbert, and K. M. Lock. 2001. A study of catches in a fleet of “ghost-fishing” pots. U.S. National Marine Fisheries Service Fishery Bulletin 99:247–253.
- Guillory, V. 1993. Ghost fishing in blue crab traps. North American Journal of Fisheries Management 13:459–466.
- Guillory, V. 2001. A review of incidental fishing mortalities of blue crabs. Pages 28–41 in V. Guillory, H. M. Perry, and S. Vanderkooy, editors. Proceedings of the blue crab mortality symposium. Gulf States Marine Fisheries Commission, Ocean Springs, Mississippi.
- High, W. L., and D. D. Worlund. 1979. Escape of king crab *Paralithodes camtschatica* from derelict pots. NOAA (National Oceanic and Atmospheric Administration) Technical Report NMFS SSRF-734.
- New York State Department of Environmental Conservation (NYSDEC). 2009. Reported NY Resident Trap Use, License Sales, and Trap Tag Allocation and Use, 2000 - 2008
- NOAA Office of Science and Technology. 2014. Commercial Fisheries Statistics 1996-2012 Retrieved from <http://www.st.nmfs.noaa.gov/commercial-fisheries/commercial-landings/>
- Smolowitz, R. J. 1978. Trap design and ghost fishing: an overview. U.S. National Marine Fisheries Service Marine Fisheries Review 40:1–8.
- Van Engel, W. A. 1982. Blue crab mortalities associated with pesticides, herbicides, temperature, salinity, and dissolved oxygen. Pages 187–194 in H. M. Perry and W.A.

Other Attachments

Stakeholder Testimonials

New York State Department of Environmental Conservation
Division of Fish, Wildlife & Marine Resources
Bureau of Marine Resources
205 North Belle Mead Road, Suite 1, East Setauket, New York 11733

Phone: (631) 444-0430 • **Fax:** (631) 444-0434

Website: www.dec.ny.gov



March-25-14

Dear Sir/Madame,

The Department supports and appreciates the work Cornell Cooperative Extension (CCE) has been doing to remove derelict lobster gear from Long Island Sound. Due to the decline of the Southern New England lobster population, many lobstermen either down sized the amount of gear they fished or left the Industry. Much of this lobster gear was not removed from Long Island Sound. Data collected by CCE indicates that many of these lobster traps continue to fish. The work that CCE has conducted is invaluable for the habitat and marine resources in Long Island Sound. They are also collecting important information which can be used to assess the impact of this "ghost" gear. This information includes the number of trips taken, number of traps recovered and the shape they are in, and the number of lobsters and other organisms found in the traps, their status, and biological information. The Department would like to express its thanks to CCE and the organizations that have funded the program for important work they have done removing derelict fishing gear.

Sincerely,

Kim McKown
Crustacean Unit Leader



OFFICE OF THE SUFFOLK COUNTY LEGISLATURE

Sarah S. Anker

Suffolk County Legislator, 6th District

Committees:

Chairwoman of Education & Information Technology • Vice Chairwoman of Budget and Finance
Veterans & Seniors • Environment, Planning and Agriculture

March 28, 2014

Dear Sir/Madam,

I am writing this letter in support of Cornell Cooperative Extension's (CCE) Marine Program's program to collect and dispose of derelict lobster gear from the Long Island Sound.

This project has successfully reduced the impact of floatable marine debris (floating line and plastics) associated with "ghost" traps in the sound. This project targets and removes "ghost" traps which in turn reduces the negative effects of floatable marine debris on the marine environment and associated species, including Species of Greatest Conservation Need.

Miles of marine habitat has been improved and/or enhanced in the Long Island Sound. Through the removal of the ghost traps and associated floatables, the risk of entanglement for marine mammals and sea turtles has been reduced.

I would like to extend my thanks to CCE for the very important work they have done to clean up our marine environment.

Sincerely,

Sarah Anker
Suffolk County Legislator, Sixth District

SSA/pjd



LONG ISLAND SOUND LOBSTERMEN'S ASSOCIATION

P.O. BOX 1788 • ROCKY POINT, NY 11778

March 25, 2014

Attn: Tom Barry
Fisheries Habitat Conservation Program Office
1315 East-West Highway
Silver Spring, MD 20910

Dear Mr. Barry:

We wish to express our sincere appreciation to the NOAA Marine Debris Program for your support of the project, "Long Island Sound Derelict Lobster Gear Assessment, Removal and Prevention." Thousands of derelict lobster traps removed not only rid the Long Island Sound of marine debris but also eliminated the mortality impacts on lobsters and important species related to derelict lobster traps.

We hope for your continued support in the future to continue this important work on behalf of the Long Island Sound lobstermen.

Thank You,

A handwritten signature in dark ink that reads "John German". The signature is fluid and cursive, with the first name "John" and last name "German" clearly distinguishable.

John German
President
Long Island Sound Lobstermen's Association



VILLAGE *of* NORTHPORT

INCORPORATED IN 1894

224 Main Street, Northport, New York 11768, 631-261-7502, fax: 631-261-7521

March 25, 2014

Attn: Tom Barry
Fisheries Habitat Conservation Program Office
1315 East-West Highway
Silver Spring, MD 20910

Dear Mr. Barry:

The Village of Northport is grateful to the NOAA Marine Debris Program for helping mitigate the negative impacts of derelict lobster traps in the Long Island Sound. The Village of Northport partnered in this project and the results speak for themselves. More importantly the benefits of this work will improve the valuable Long Island Sound resources and the communities and individuals that depend upon them.

More effort is still needed to eliminate derelict lobster trap impacts in the Long Island Sound. The Village of Northport would like to partner with the NOAA Marine Debris Program in this important endeavor. Again, thank you for commitment to cleaning up the Long Island Sound marine debris.

Thank You,

Mayor George Doll
Village of Northport

Press Release



Cornell University
Cooperative Extension
of Suffolk County

October 3, 2012
Press release

CCE Awarded Grant to Remove Derelict Lobster Traps and Abandoned Fishing Gear from L.I. Sound

Informational Media Event Scheduled in Mt. Sinai on October 11

Cornell Cooperative Extension of Suffolk County has been awarded \$260,351 from the NOAA Marine Debris Program for the removal of abandoned lobster traps and other fishing gear from the Long Island Sound.

Members of the Long Island Lobstermen's Association and CCE marine staff will work together to identify the location of the gear, remove it safely from the seabed. Then, the recovered debris will be recycled at nearby recycling facilities.

Derelict fishing gear can last indefinitely on the seabed and impact ecosystems as gear settles and continue to catch lobster and fish in what is referred to as "ghost fishing." Further, the gear can compromise navigational safety and damage fishing equipment and boats in use. CCE, with the cooperation of local lobstermen, has successfully removed thousands of derelict traps from local waters during previous recovery programs.

Additionally, CCE has received a \$50,000 match grant from Covanta Energy.

Please join us on Thursday, October 11 at 1p.m. at Cedar Beach in Mt. Sinai to learn more about our project to remove derelict fishing gear from local waters.

To see a video of CE's work to remove derelict lobster traps, go to <http://ccesuffolk.org/project-videos/>

For more information, call 631-727-7850, ext. 305.

Cornell Cooperative Extension of Suffolk County is a non-profit educational agency dedicated to strengthening families and communities, enhancing and protecting the environment, promoting sustainable agriculture, and fostering countywide economic development. Affiliated with Cornell University, and funded in part by Suffolk County government, Cornell Cooperative Extension of Suffolk County is part of the state and national extension system that includes the land-grant universities and the U.S. Department of Agriculture. CCE's sites and program areas include Agriculture, Marine, 4-H Youth Development, Family Health and Wellness, Suffolk County Farm and Education Center and Suffolk County Peconic Dunes Camp.

Project Brochure





COVANTA
ENERGY

 Long Island Sound Study
A Division of the New York State Department of Environmental Conservation

 New York State Department of Environmental Conservation

 National Oceanic and Atmospheric Administration

 National Marine Fisheries Service

 Long Island Sound Study

 SCHNITZER STEEL INDUSTRIES, INC.

 **GERSHOW**
RECYCLING

*Long Island Sound
Lobstermen's Association*

**VILLAGE OF
NORTHPORT**

 **Cornell University**
Cooperative Extension
of Suffolk County

423 Griffing Avenue, Suite 100
Riverhead, NY 11901-3071

631-727-7850
suffolk@cornell.edu
www.ccesuffolk.org

~ ~ ~

Cornell Cooperative Extension in Suffolk County
provides equal program and employment opportunities.

*Cornell Cooperative Extension is funded in part by
Suffolk County through the office of the
County Executive and the County Legislature.*



Derelict Lobster Gear Assessment, Removal, and Prevention

 Cornell University
Cooperative Extension
of Suffolk County

Project Brochure Continued

Cornell Cooperative Extension's (CCE) Marine Program conducted several research projects year round to remove derelict/abandoned ("ghost") lobster traps in the Long Island Sound (LIS) at the ports of Mattituck, Mount Sinai and Northport. The successes of the projects were manifested through the cooperation of the lobster industry by completion of surveys, planning sessions of operation field plans, and executing the fieldwork. The initial pilot program proved that a substantial quantity of derelict lobster traps have accumulated in the LIS along with subsequent projects that confirmed this.



These traps not only contribute to the problems associated with marine debris, a significant number of them are still catching lobsters and are thus adding to "fishing effort" for lobsters in LIS. As of now, our data dictates that

20% of the derelict lobster traps "ghost fishing" had one or more lobsters in them and of this 20%, 4% of the lobsters were dead.

To date, a total of 11,826 derelict lobster traps have been removed from the New York waters of the LIS. This is equivalent to a total weight



estimated at 591,300 lbs. As a result of this project, 268.2 metric tons of derelict lobster

traps have been removed from the LIS. These traps are recycled or returned to their owners. The burnable debris from the derelict lobster traps is converted into clean renewable energy at the Covanta Energy "energy from waste" recovery facility.

CCE was awarded funding through the NOAA Community-based Marine Debris Removal Program; the National Fish and Wildlife Foundation, Fishing for Energy program and the Long Island



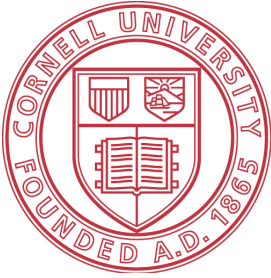
Sound Futures Fund in order to conduct the removal of derelict lobster traps "ghost fishing" in the LIS. CCE continues educational outreach with the commercial lobster industry and local officials in order to promote environmental stewardship and awareness, as well as improve management practices by providing the template for recycling, proper storage and disposal activities for inactive fishing gear.



Project Sign



Survey



Cornell University

Cooperative Extension of Suffolk County

Long Island Sound Derelict Lobster Gear Assessment, Removal and Prevention

Name: _____

Today's Date: _____

Phone Number: _____

Occupation(s): _____

Years Fishing Long Island Sound (LIS): _____

Fishing Area: _____

Vessels(s) Name/Port: _____

Lobster Permit #: _____

Are you interested in participating in our lobster derelict lobster trap removal, assessment, and prevention project? _____

Do you have vessel insurance (required)? _____

Where (Lat/Lon, approximate area) are known locations of derelict/abandoned lobster traps within the LIS? _____

Approximately how long has this derelict/abandoned gear in the LIS identified been accumulating? _____

Please estimate how much gear may be derelict/abandoned in the study sites in the attached maps? _____

Active lobstermen fishing within the study areas and from adjacent ports will be contracted to remove gear. If you are interested in the removal program, please contact Jacqueline Stent at the Cornell Marine Program for more information. Telephone: 631-727-7850 ex. 305 Email: js443@cornell.edu Please return survey to: Attn: Jacqueline Stent (Cornell Marine) 423 Griffing Ave. Riverhead, NY 11901

Survey Map



Survey Results

CCE conducted a survey with the Long Island Sound lobstermen that fished in the project study area. Twenty percent of the lobstermen in the study area responded. Below are the collective results of the survey:

Occupation(s): Commercial Lobsterman

Years Fishing Long Island Sound (LIS): 30 years

Fishing Area: 142 and 144

Are you interested in participating in our lobster derelict lobster trap removal, assessment, and prevention project? Yes

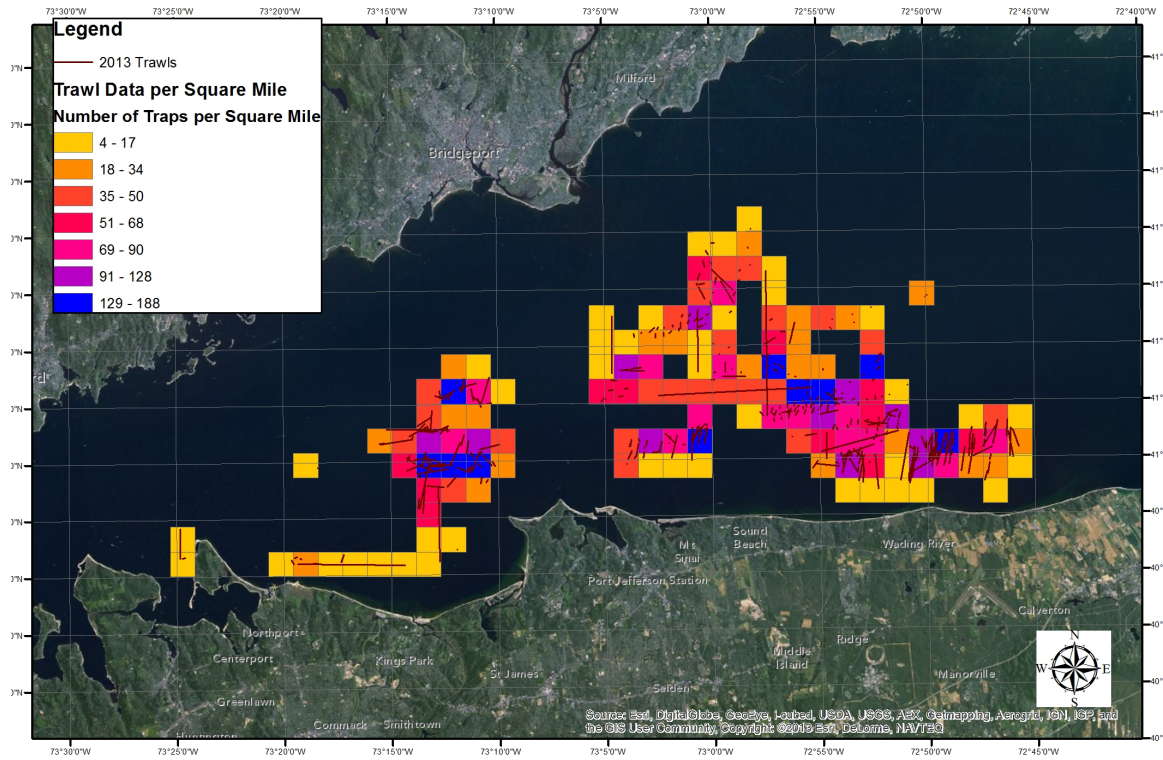
Do you have vessel insurance (required)? No

Where (Lat/Lon, approximate area) are known locations of derelict/abandoned lobster traps within the LIS? Throughout the Long Island Sound

Approximately how long has this derelict/abandoned gear in the LIS identified been accumulating? 15 years

Please estimate how much gear may be derelict/abandoned in the study sites in the attached maps? thousands

Additional GIS Maps



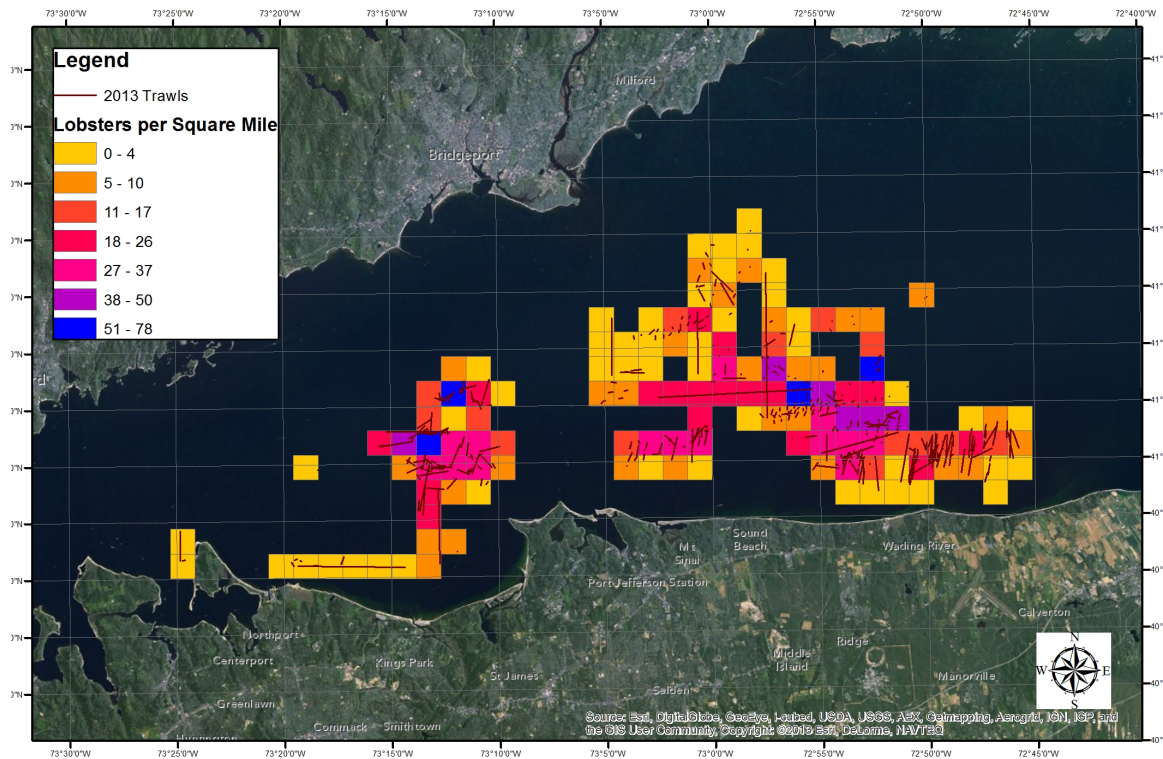


Photo Summary Document

Long Island Sound Derelict Lobster Gear Assessment, Removal and Prevention

Photographs: All photographs are credited to CCE Staff.

Title - Caption

1. Grapple system - The grapple system comprised of the main line with ten grapnel hooks attached, weighted sled and towline.
2. Deployment - CCE staff member preparing to deploy the grapple system.
3. Captain and mate - Captain and first mate retrieving the grapple system with recovered derelict gear.
4. Derelict gear and marine debris - Newly retrieved derelict gear entangled with marine debris.
5. Retrieving derelict gear - Captain preparing the derelict gear for CCE staff to handle.
6. Inspecting a derelict trap - CCE staff member inspecting the derelict gear so as to be correctly catalogued.
7. Returned to port - Captain and CCE staff member safely back at Mt. Sinai Harbor with a load of 75 derelict lobster traps.
8. Waiting to be unloaded - A vessel loaded with 80 derelict traps waits at the dock to be unloaded.
9. Unloading - The captain and first mate along with CCE staff members unloading the derelict gear from a participating vessel.
10. Volunteers at work - Covanta volunteers assist with unloading the derelict gear.
11. Stacked and waiting - The commercial dock in Northport, NY with a stack of derelict traps waiting to be recycled.
12. Preparing the traps - The derelict traps before being crushed for recycling.
13. Crushed - The derelict traps after being crushed for recycling.
14. Loading for transport - Loading the derelict traps into a waste container for transport to the recycling facilities.
15. American lobster - American lobster (*Homarus americanus*) a NOAA Trust Resource Species.
16. Released - An American lobster being readied for release after removal from a derelict trap.
17. Blackfish - A derelict trap loaded with blackfish (*Tautoga onitis*) also a NOAA Trust Resource Species. *the claw of an American lobster is also visible inside the trap (bottom, center of the photo)
18. Media event - Dignitaries, members of the press and industry members at a media event in Mt. Sinai, NY.
19. Dignitaries - Dignitaries examining some of the derelict traps after the Mt. Sinai media event.
20. Group photo - Dignitaries, industry members, CCE staff and Covanta volunteers pose for a photograph.