

**APPROVED**



## Haskin Shellfish Research Laboratory

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FROM: Eleanor Bochenek  
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SUBJECT: Revised Final Report for NA07NMF4540018

DATE: April 21, 2008

This memorandum concerns the status of project #NA07NMF4540018, "Bycatch reduction and gear development in the Mid-Atlantic: Evaluation of optimal codend mesh size in the *Loligo* fishery." The original proposal requested the following distribution of fish in support of an estimated cost of \$378,673.10: black sea bass, 40,358 lb; summer flounder, 163,633 lb; *Loligo* squid, 331,000 lb; and scup, 269,305 lb. At the time the project was funded, the majority of the summer flounder, black sea bass, and scup were converted into *Loligo* squid by the NMFS, because of quota reductions in the finfish fisheries. In addition, the science program was reduced to fall within the anticipated decrease in earnings to \$174,792.25. The final poundage supporting this cost was: black sea bass, 40,358 lb; *Loligo* squid, 650,251 lb; and scup, 98,419 lb. Note the reduction in scup by nearly 75% and the complete loss of summer flounder in this final allocation.

Nevertheless, the final program cost and fish allocated were in balance based on the previous record of fish sales by NFI-SMC. Unfortunately, NMFS was unable to provide federal EFPs until February 23, 2007 and this delayed even further the acquisition of state permits (e.g., New York), so that the primary season for taking the RSA *Loligo* quota, the time following the winter closure before the second trimester began, was lost. The consequence of this caused the primary source of funds for this research project to be of little value.

Accordingly, as of January 31, 2008, we had earned only \$67,967.67 in support of this project. This is insufficient to cover the entire at-sea field effort. Thus, clearly, this program could not be completed. We regret this outcome; however, the outcome was beyond the control of the NFI-SMC, as permitting delays, rather than our performance, prevented use of the *Loligo* quota allocated to this project.

The present project will need to be canceled and no final report, except accounting can be provided, as no substantive work at sea took place. In April 2007, we did go to sea and conducted 15-paired tows. The April field effort was unsuccessful in meeting project goals because we did not find squid in the appropriate size class to conduct the research. We did not go out again that spring due to the inadequate number of small squid present and the concern even at that time that sufficient funds would be raised to support the remainder of the research program. Below is a brief report of our field effort.

We hope in the future that the impediments to timely permitting, which occurred at the state and federal level can be rectified so that the *Loligo* quota can be used to support RSA-funded science, and we are prepared to assist you in any way to improve this process.

### **Brief Project Report**

The objective of the 2007 *Loligo* squid mesh selectivity study was to evaluate whether a 2.25" mesh codend reduces the catch of sub-market sized squid (<10 cm) without impacting catches of 10+ cm *Loligo* squid in comparison to the standard, current legal mesh size used by the fishery (1.875"). A planning meeting was held in Cape May, NJ in February 2007 with the captains of the F/V Starbrite and F/V Evening Star to discuss scientific protocols, towing procedures, and project specifics. Due to weather and scheduling conflicts with other projects, and finally, engine repairs on one of the fishing vessels, a trip occurred out of Cape May, NJ during the week of April 20-25, 2007.

A total of 30 tows (15 paired tows) were completed during this trip with tows occurring only during daylight hours. Tow locations are presented in Figure 1. Details from this trip are described in Tables 1 and 2. Haul depth ranged from 80 to 104 fathoms. The length frequency distributions of *Loligo* squid for each vessel are presented in Figure 2. A total of 1,632 *Loligo* squid lengths were measured on the F/V Starbrite and 1,572 lengths were measured on the F/V Evening Star. *Loligo* squid captured during sampling in April 2007 were not in the size range needed to conduct the study.

Figure 1. Location of paired tows conducted in the Mid-Atlantic Ocean.

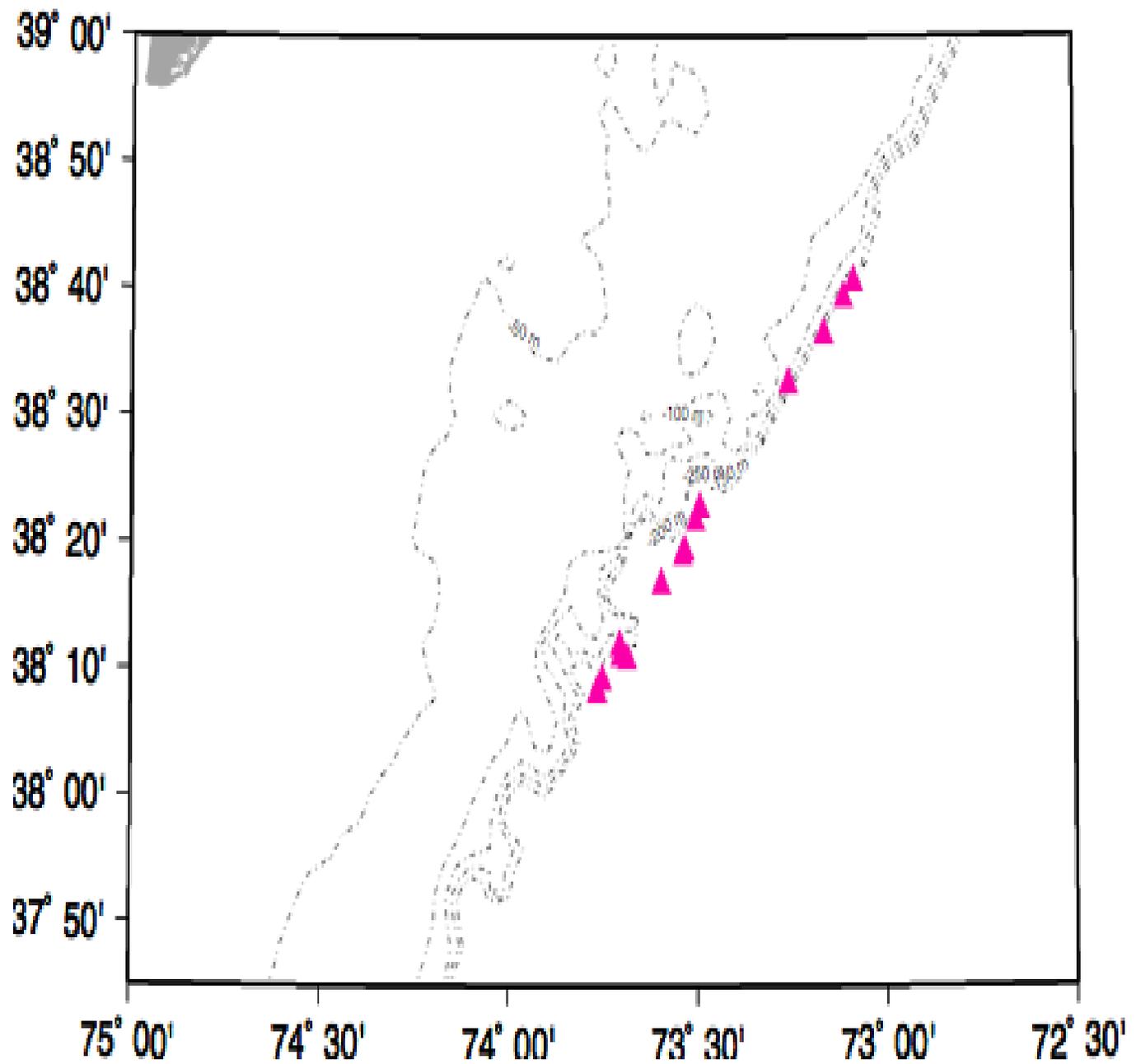


Figure 2. Length frequency distribution of *Loligo* squid captured from all paired tows conducted in April 2007 by fishing vessel.

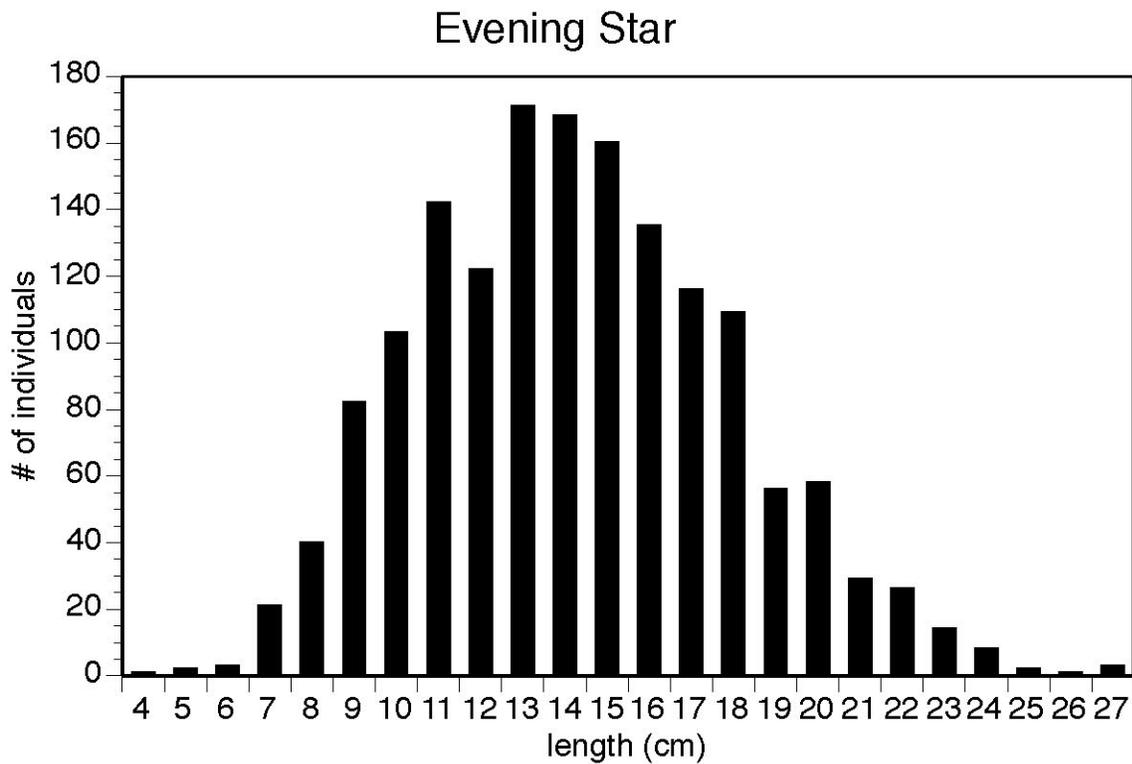
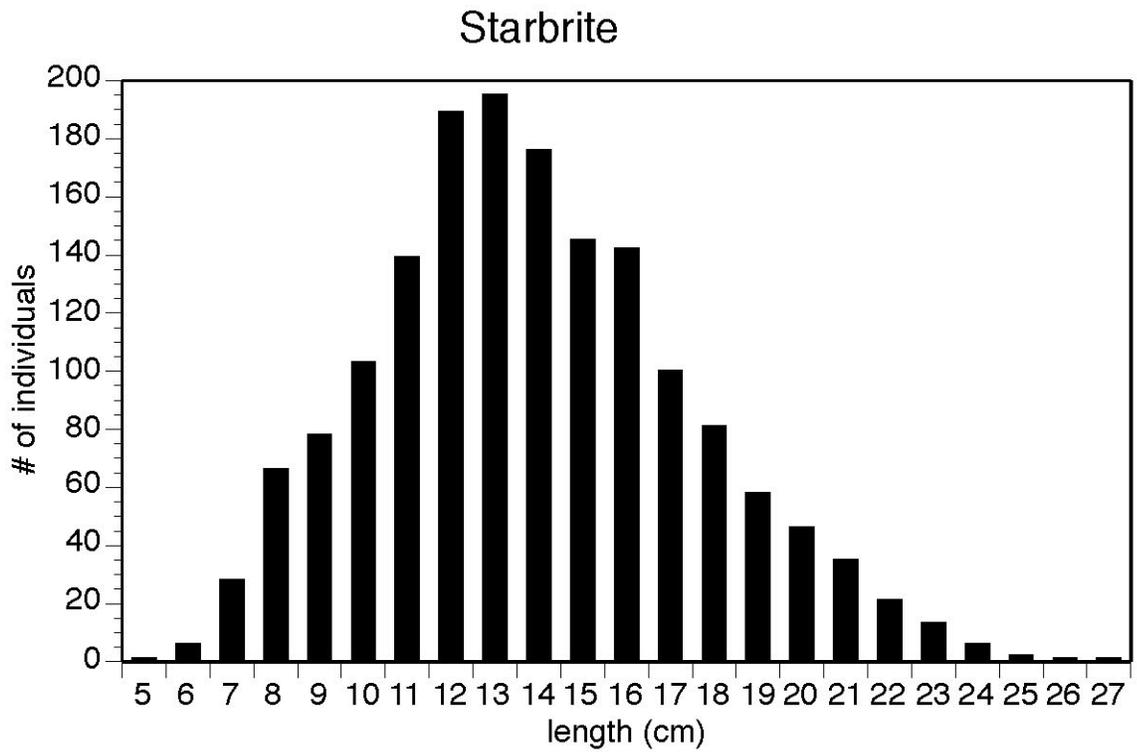


Table 1. Set and haul positions and depths for the F/V Starbrite during the April cruise.

| Tow | Date    | Set<br>Depth<br>(fm) | Set             |           | Set<br>Longitude | Haul<br>Depth<br>(fm) | Haul             |                   | Haul  |    |       |
|-----|---------|----------------------|-----------------|-----------|------------------|-----------------------|------------------|-------------------|-------|----|-------|
|     |         |                      | Set<br>Latitude | Longitude |                  |                       | Haul<br>Latitude | Haul<br>Longitude |       |    |       |
| 1   | 4/21/07 | 102                  | 38              | 23.29     | 73               | 27.02                 | 80               | 38                | 25.68 | 73 | 23.96 |
| 2   | 4/21/07 | 99                   | 38              | 31.58     | 73               | 16.69                 | 96               | 38                | 34.41 | 73 | 13.82 |
| 3   | 4/21/07 | 100                  | 38              | 33.29     | 73               | 14.80                 | 104              | 38                | 30.35 | 73 | 17.95 |
| 4   | 4/21/07 | 103                  | 38              | 22.53     | 73               | 21.26                 | 102              | 38                | 24.75 | 73 | 24.76 |
| 5   | 4/22/07 | 80                   | 38              | 14.74     | 73               | 40.21                 | 83               | 38                | 11.27 | 73 | 42.45 |
| 6   | 4/22/07 | 85                   | 38              | 10.90     | 73               | 42.70                 | 85               | 38                | 8.48  | 73 | 46.23 |
| 7   | 4/22/07 | 87                   | 38              | 8.43      | 73               | 46.21                 | 85               | 38                | 10.63 | 73 | 42.98 |
| 8   | 4/22/07 | 84                   | 38              | 10.98     | 73               | 42.65                 | 84               | 38                | 13.72 | 73 | 40.75 |
| 9   | 4/23/07 | 80                   | 38              | 13.51     | 73               | 41.06                 | 83               | 38                | 10.22 | 73 | 43.48 |
| 10  | 4/23/07 | 80                   | 38              | 2.89      | 73               | 53.51                 | 85               | 38                | 59.73 | 73 | 56.31 |
| 11  | 4/23/07 | 86                   | 37              | 59.58     | 73               | 56.42                 | 86               | 38                | 2.44  | 73 | 53.42 |
| 12  | 4/23/07 | 86                   | 38              | 3.45      | 73               | 52.54                 | 87               | 38                | 0.07  | 73 | 55.66 |
| 13  | 4/23/07 | 87                   | 37              | 59.78     | 73               | 56.11                 | 87               | 37                | 56.91 | 73 | 59.22 |
| 14  | 4/24/07 | 90                   | 38              | 2.79      | 73               | 52.63                 | 86               | 38                | 0.67  | 73 | 55.05 |
| 15  | 4/24/07 | 78                   | 38              | 0.45      | 73               | 56.26                 | 82               | 38                | 2.94  | 73 | 53.22 |

Table 2. Set and haul positions and depths for the F/V Evening Star during the April cruise.

| Tow | Date    | Set<br>Depth<br>(fm) | Set             |           | Set<br>Longitude | Haul<br>Depth<br>(fm) | Haul             |                   | Haul   |    |        |
|-----|---------|----------------------|-----------------|-----------|------------------|-----------------------|------------------|-------------------|--------|----|--------|
|     |         |                      | Set<br>Latitude | Longitude |                  |                       | Haul<br>Latitude | Haul<br>Longitude |        |    |        |
| 1   | 4/21/07 | 75                   | 38              | 23.983    | 73               | 26.457                | 87               | 38                | 26.365 | 73 | 22.872 |
| 2   | 4/21/07 | 98                   | 38              | 30.731    | 73               | 17.639                | 100              | 38                | 33.305 | 73 | 14.663 |
| 3   | 4/21/07 | 100                  | 38              | 31.980    | 73               | 16.027                | 98               | 38                | 29.339 | 73 | 19.267 |
| 4   | 4/21/07 | 99                   | 38              | 27.875    | 73               | 20.794                | 97               | 38                | 25.512 | 73 | 23.888 |
| 5   | 4/22/07 | 84                   | 38              | 14.155    | 73               | 40.539                | 87               | 38                | 10.567 | 73 | 42.935 |
| 6   | 4/22/07 | 82                   | 38              | 10.441    | 73               | 43.301                | 85               | 38                | 8.550  | 73 | 46.130 |
| 7   | 4/22/07 | 87                   | 38              | 8.128     | 73               | 46.618                | 88               | 38                | 10.286 | 73 | 43.203 |
| 8   | 4/22/07 | 82                   | 38              | 10.786    | 73               | 42.945                | 79               | 38                | 14.081 | 73 | 40.860 |
| 9   | 4/23/07 | 80                   | 38              | 13.135    | 73               | 41.210                | 86               | 38                | 9.871  | 73 | 43.851 |
| 10  | 4/23/07 | 80                   | 38              | 3.217     | 73               | 53.281                | 43               | 38                | 0.519  | 73 | 55.748 |
| 11  | 4/23/07 | 80                   | 38              | 0.514     | 73               | 56.028                | 86               | 38                | 3.221  | 73 | 52.586 |
| 12  | 4/23/07 | 87                   | 38              | 2.391     | 73               | 53.152                | 87               | 38                | 0.161  | 73 | 55.636 |
| 13  | 4/23/07 | 82                   | 37              | 59.513    | 73               | 56.872                | 86               | 37                | 56.520 | 73 | 59.752 |
| 14  | 4/24/07 | 92                   | 38              | 2.200     | 73               | 52.057                | 87               | 37                | 59.552 | 73 | 56.305 |
| 15  | 4/24/07 | 80                   | 37              | 59.631    | 73               | 56.871                | 83               | 38                | 2.405  | 73 | 53.606 |