

## **Update on Prototype Scallop Dredge for NEFSC Sea Scallop Survey as of 2/15/07**

Over the last two weeks, staff from NEFSC have been working with Charlie Quinn and his employees at his facility in New Bedford. We were having difficulty finding days warm enough to work outside with our crane at the NEFSC Pocasset gear warehouse. We don't have a forklift that can lift a dredge high enough to experiment with hanging the ring bag of the prototype. Charlie graciously opened his shop and allowed us to use his crane in a heated area. As a result, we have made great strides over the last two weeks with Charlie and his staff's help. The initial prototype design is completed. The bag was re-hung, a new twine top was installed, turtle/ rock chain design was installed, wheels were attached to the frame, and a new inclinometer bracket was added. We have two dredges that rigged with all the suggested changes. Below is a more detailed explanation of the changes.

Modifications to the ring bag: (Same rings [2" by 5/16"] and links [5/16"])

- Bottom Ring Bag changed to 16 by 32 (across) was 15 x 32.
- Diamonds remained the same.
- Hanging rings off bail replaced with a 3 x 32 skirt of rings to hang twine top.
- Apron remained 18 by 32.
- Extensions widened from 3 by 17 to 6 by 17.
- Three ring diamond in corner of the extension and the skirt was added.

Functionally, the extensions were widened and stepped down from the skirt in a more simplistic way. Everything hangs better off the frame than it did before. The sweep was connected with varying sizes of 1/4 inch dog chain. This allows for a more flowing attachment.

Change of twine top:

- Old 4.5 kc nylon twine top replaced with double twine poly-ethylene 12cm kc mesh and hung with a more appropriate number of meshes (53 by 12.5 meshes).
- Two meshes per ring on skirt and knotted in place with 1/2 inch nylon rope.

Rock Chains Added to be used over entire sampling area.

- 3/4 inch case hardened normal link chain for turtle/rock chains.
- Shackled to frame on new mounting bracket and sweep.
- Chain windows connected with 5/16 scallop links.
- Windows fairly uniform, all under 14 x 14 regulations.

Wheel attachment:

- Recycling 16" rollers from yankee 36 trawl as a set of wheels on gooseneck of dredge. Set up in commercial fashion with removable pin.

New mounting bracket for inclinometers:

New pipe type mounting bracket to protect inclinometer for dredge bottom contact.

What else to do?

-Investigate cost of case hardened rings versus current self colored grade 30 steel rings. If purchased, would sub contract making ring bags for prototypes.

-New scallops links (same size and weight) just updated version.

-Investigate cost/ need for plow steel grade shoes and wearing pads.

-Install more rugged version of 1.5 kc mesh liner.