

# *A Collaborative Effort to Examine New Strategies for Managing Closed Bottom Habitats for Sea Scallops*

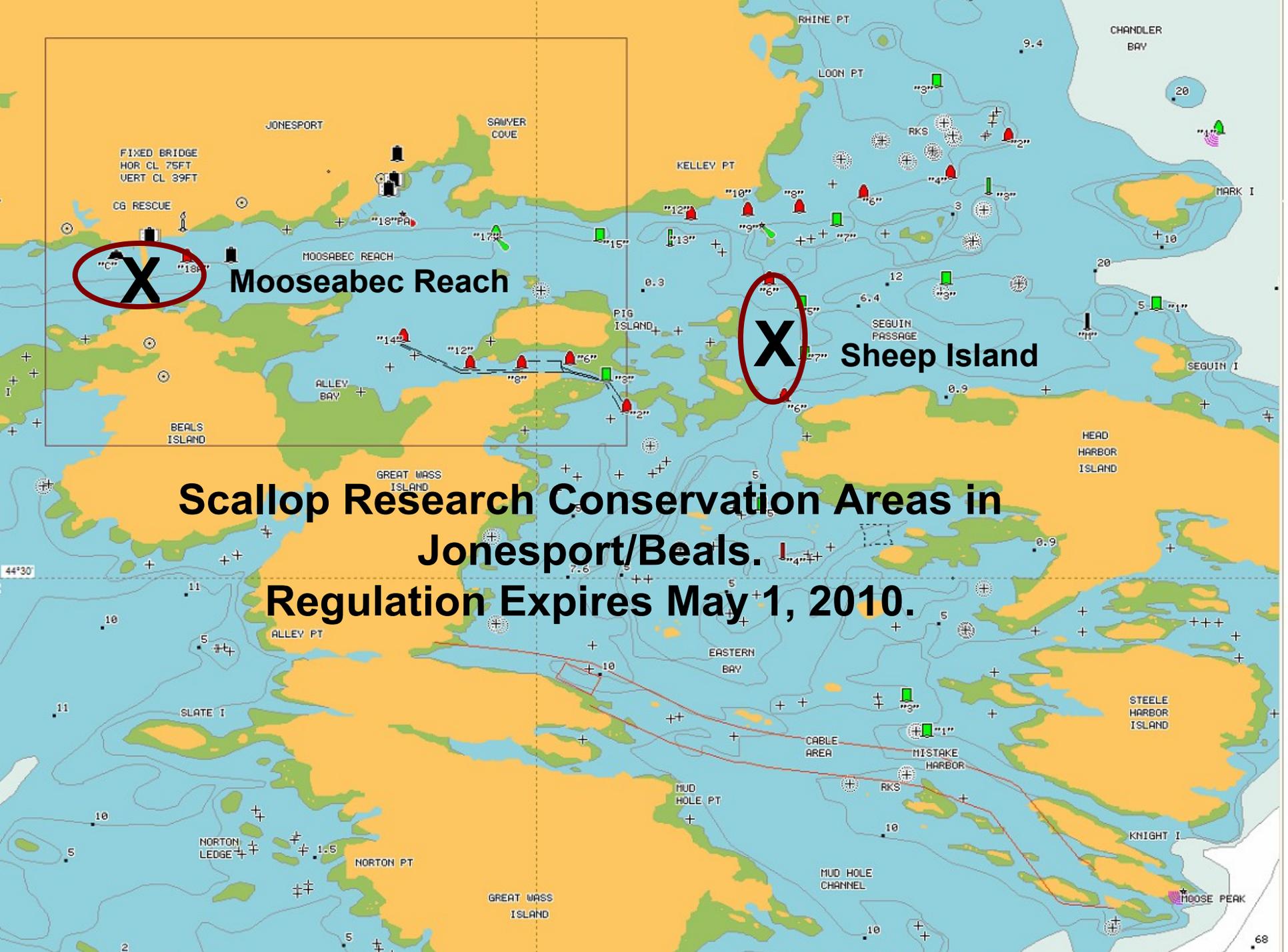


# Project Broad Goals

- ❖ To study the effects of enhancing sea scallops within closed areas to determine whether this is a viable approach to manage sea scallops here in eastern Maine.
- ❖ To build strong working relationships between fishermen and scientists based on trust and objective data gathering

# Project Objectives and Actions

- ❖ Closed two areas near Jonesport/ Beals to test different strategies for enhancing scallop stocks.
- ❖ Caught wild scallops and compared two methods for transferring them to the closed areas (wet vs dry).
- ❖ Estimated survival rates of scallops for 30 days at the closed areas.
- ❖ Set spat bags near Jonesport/ Beals to determine best locations for collecting wild scallop spat for further enhancement work.



**Mooseabec Reach**



**Sheep Island**

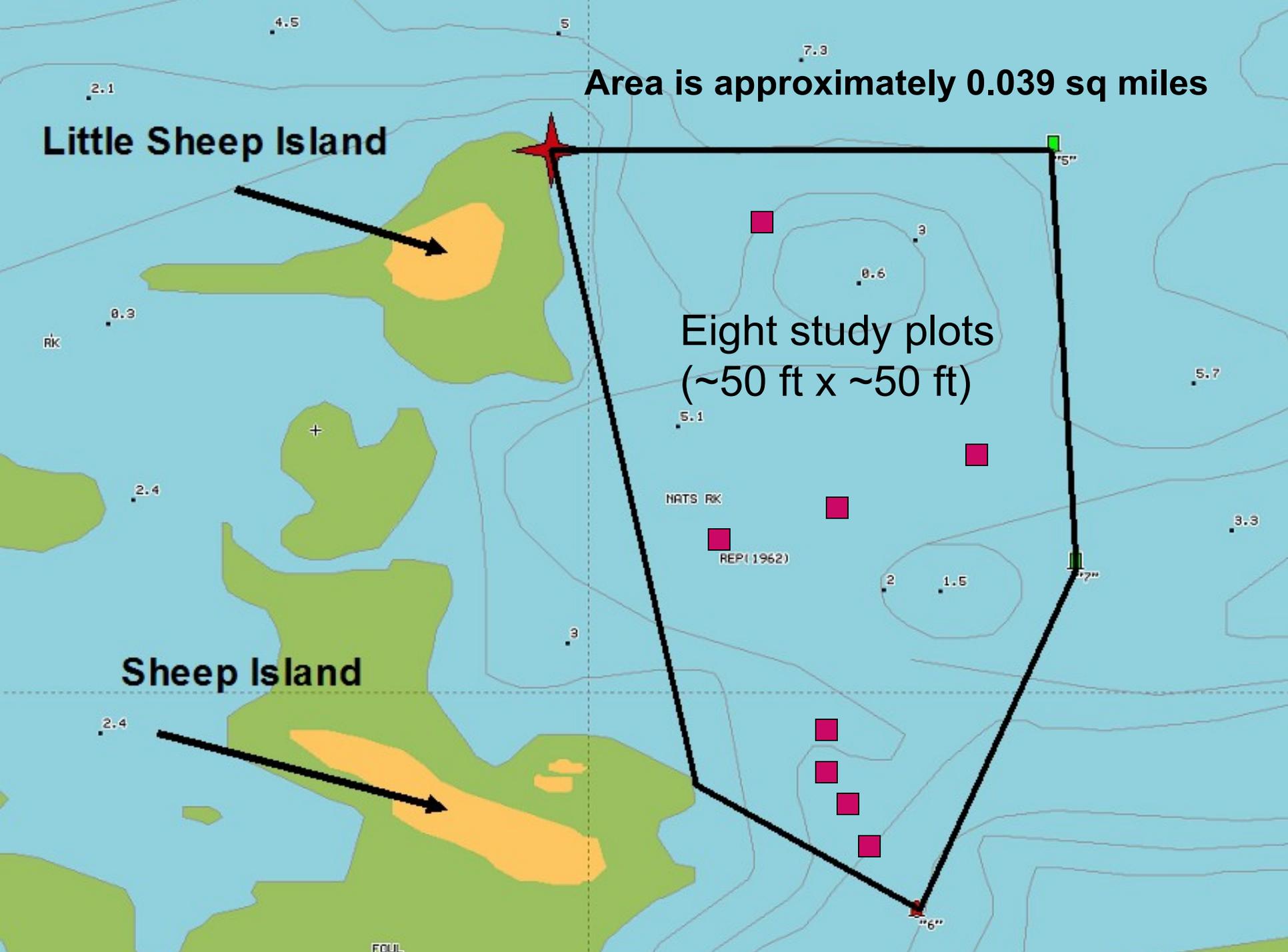
**Scallop Research Conservation Areas in  
Jonesport/Beals.  
Regulation Expires May 1, 2010.**

Area is approximately 0.039 sq miles

Little Sheep Island

Eight study plots  
(~50 ft x ~50 ft)

Sheep Island





# Collecting Scallops

- Dragging occurred in Chandler Bay, May 3 and May 9, 2007
- Collected 8992 scallops for 562 per plot
- Scallops ranged from 1.5" – 4.7" and averaged 3.4"



# Handling Experiment

- ❖ Wet versus Dry Transport
- ❖ Half of the scallops were transferred in dry fish totes
- ❖ Half were transferred in water-filled insulated boxes



# Survival and Growth



- ❖ First, divers conducted a baseline survey
- ❖ Divers spread the scallops in each plot
- ❖ Returned and counted live and dead scallops over 30 days
- ❖ On day 30, scallops were collected and measured for possible growth

# Scallop Transfer Results

- ❖ Survival was excellent (99%). Moving sea scallops when air and seawater temperatures are below 50°F worked well.
- ❖ No difference in survival between Wet and Dry storage during transport.
- ❖ No appreciable growth occurred at either site over the 30-day trial. Scallops averaged 4" one year later.
- ❖ Scallops did not initially migrate at Sheep Island; 60% loss after one year.
- ❖ Scallops initially migrated at Moosabec; but back to 100% after one year.

# Limitations

- ❖ Nearly impossible to determine the effectiveness because of the amount of time that scallop larvae take to settle.
- ❖ Given ocean currents, its unlikely that spawning scallops in one bed are responsible for juveniles in same bed.
- ❖ legal scallops that are harvested from open areas and then transported to closed areas are not available for the commercial harvest.

# Scallop Spat Collection

- ❖ 1250 spat bags (250 lines) were deployed in early September, 2007 and 2008
- ❖ Spat bag lines were set in shallow (10-12 fathoms) or deep (greater than 15 fathoms)



# 2007 Spat Collection Results

- ❖ Of 1200 spat bags deployed, 460 (38%) were recovered and examined for sea scallop spat.
- ❖ Few scallop juveniles were found in any bags ( 0.6/bag – 4.8/bag)
- ❖ There was a difference between deep lines and shallow lines on the western side ( 6.6/bag vs 2.2)
- ❖ 2008 spat bags will be retrieved in April, 2009

# New Research Directions

- ❖ Is it more cost effective to raise scallop spat in a hatchery vs. wild spat collection for stock enhancement?
- ❖ Is it better to use small spat for enhancement or grow scallops to a larger size before planting?
- ❖ Is there a difference in survival of small scallops planted on barren ground versus vegetated areas?

# Project Partners

- ❖ **Brian Beal, Downeast Institute**
- ❖ **Maurice Alley (Beals)**
- ❖ **Preston Alley (Beals)**
- ❖ **Raymond Alley (Jonesport)**
- ❖ **Robert Alley, Sr. (Beals)**
- ❖ **Robert Alley, Jr. (Jonesport)**
- ❖ **Ernest Kelley, Jr. (Jonesport)**
- ❖ **Ira Kelley (Jonesport)**
- ❖ **Patrick Kelley (Jonesport)**
- ❖ **Donald Engels (Jonesport)**
- ❖ **Terry Stockwell (DMR)**
- ❖ **Robert Russell (DMR)**
- ❖ **Chris Bartlett (Maine Sea Grant)**