Craig MacDonald, Ph.D.

Superintendent

Stellwagen Bank National Marine Sanctuary

March 12, 2014
Proposed Marine Operations Center

United States Department of Commerce
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

CONTRACT NO: WC1330-08-CQ-0014, TASK ORDER 13
BLACK & VEATCH PROJECT NO: 042221.00.02

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BRIDGING DOCUMENT
FEBRUARY 17, 2012
R/V Auk
Mission:
To conserve, protect and enhance the biodiversity, ecological integrity and cultural legacy of the sanctuary while allowing for compatible use.
Research Technologies

- Side Scan Sonar and Magnetometer
- Synthetic Aperture Sonar (SAS)
- Remotely Operated Vehicle (ROV)
- Habitat Camera (HABCAM)
- Remotely Operated Vehicle (ROV)
- SCUBA Diving
- Autonomous Underwater Vehicles (AUV)
Research Technologies

ARGOS Satellite Bird Tracking

Whale Tagging DTAG/CritterCam

AIS
Automatic Identification System

Automatic Identification System (AIS)

WhaleAlert iPad/iPhone App

Autonomous Recording Unit (ARU)

Real-time Right Whale Detection Buoys
Maritime Heritage

45 Historic Shipwrecks
6 Sites on National Register of Historic Places

Schooners Frank A. Palmer & Louise B. Crary
Beginnings of Sanctuary Maritime Heritage Research: 2002

Steamship *Portland*:
“New England’s Titanic” Lost with all hands (>200) in 1898

Scientists find the ‘Titanic of New England’
Steamship Portland

Lost With All Hands in 1898

Video Courtesy of NOAA/SBNMS and NURC-UConn
Marine Mammal Protection
Rich in Biodiversity
Well over 575 known species
Historic Stellwagen

John Smith - 1616

1635 reprint

1734
Linking Fish Movement to Undersea Landscapes

Gravel Habitat
Summer 2001
- 38 Cod Tagged
- Tracked 4 Months
- 37% showed strong site attachment to gravel habitat site

Piled Boulder Reefs
Summer 2002/Winter 2004
- 65 Cod Tagged Total
- Tracked 4 Months/5 Months
- 34%/37% showed strong site attachment to individual boulder reefs in both periods

Coded Acoustic Pinger
Pinger is implanted in Atlantic cod
Acoustic Receiver
Research Area
Recommendation

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Priority</th>
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</thead>
<tbody>
<tr>
<td>(1.1) Establish minimum criteria for special use permit applications for the laying of cables and pipelines.</td>
<td>Low</td>
</tr>
<tr>
<td>(2.1) Develop a process to establish reference areas that serve as benchmarks for discerning human and natural impacts on habitat.</td>
<td>High</td>
</tr>
<tr>
<td>(2.2) Develop a science plan to assess and mitigate benthic habitat alteration.</td>
<td>High</td>
</tr>
<tr>
<td>(3.1) Minimize bycatch and discard of all species, in all fisheries (commercial and recreational), by all gear types.</td>
<td>High</td>
</tr>
<tr>
<td>(3.2) Determine the effects of biomass removal of targeted species by commercial and recreational fishing on the ecological integrity of the sanctuary.</td>
<td>High</td>
</tr>
<tr>
<td>(3.3) Develop a management strategy with NOAA Fisheries Service and the NEFMC to evaluate and protect an optimal forage base to maintain the ecological integrity of the sanctuary.</td>
<td>High</td>
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</tbody>
</table>
Priority Research Questions to be Addressed by DHRA

Four broad focus areas:

- Fishing gear impacts and differential susceptibility
- Habitat recovery at local and landscape scales
- Difference between natural and fishing disturbance
- Productivity by habitat type
Total SERA Area 250 sq. nm (857 sq. km)

Total SERA II Area 343 sq. nm (1,176 sq. km)
SERA II
Sediment Classification

- Mud: 42 sq. km
- Sand: 318 sq. km
- Gravel: 647 sq. km
- Boulder: 12 sq. km
Principal Oceanographic Regimes

86%  
6%  
8%
Underwater Soundscape
2006-2012

161 short-term deployments
(mixed habitats)

2 long-term monitoring stations
(diverse habitats)
HabCam Survey
2007-2010
Overall 15 million images in SBNMS
1 meter width
The Seafloor Habitat Recovery Monitoring Project (SHRMP) at Stellwagen Bank National Marine Sanctuary

Final Report
31 December 2013

Submitted by:
Peter Austin\(^1\), James Lindholm\(^1\), Allison Cramer\(^1\), Metaja Nanandovio\(^1\), Chelsea Prindle\(^1\), Alison Tamsett\(^1\)
Source: Seafloor Habitat Recovery and Monitoring Project
Spatial Configuration &
Regulatory Needs for Proposed
Stellwagen DHRA (343 sq. nm.)

- WGOM Closure Area
- Groundfish & EFH
- Status Quo

Stellwagen DHRA

Reference Area
55 sq. nm.

Western Gulf of Maine Closure Area

Status Quo
Plus Exclusion
Party/Charter & Recreational
Charter fishermen express concern about proposed regulation's effect on cod fishing tours

By Jacqueline Tempone / Globe Correspondent / February 18, 2014

Local charter fishermen are criticizing proposed federal regulations that they fear could curtail their efforts to land cod in the Stellwagen Bank area of Massachusetts Bay, officials said.

Stellwagen Bank Charter Boat Association President Charlie Wade said the proposed rule could completely close a 75-square-mile area of the ocean to the?

Proposed Stellwagen Bank closure goes to next step

Some things are just better when they're local, like your insurance agent.

Anglers oppose restriction on Massachusetts Bay access

Anglers are rallying opposition before an impending vote by members of the New England Fisheries Management Council that could prohibit recreational and charter boat fishing from bottom fishing in a popular 55-square nautical-mile area of Stellwagen Bank in eastern Massachusetts Bay.

"If passed, this sweeping habitat amendment will be a business death sentence for scores of charter boat owners," Stellwagen Bank Charter Boat Association president Charlie Wade said in a statement. "An even more dramatic and far-reaching result — which isn't as obvious or immediate — is the impact on the entire region's economy. And if people get out of the habit of coming here to fish, it will affect all of us for many years to come."
Stellwagen DHRA Reference Area

Purpose: The proposed reference area allows valuable assessments of the role that groundfish removals play in mediating habitat recovery, an understanding of “natural” disturbance, and the role that habitat variation plays in productivity of managed resources.

- Recreational fishing has accounted for as much as 31% of the total cod removals from the Gulf of Maine over the last decade.
- Recreational fishing exceeded 2013 Annual Catch Limits by 145% for cod and 246% for haddock.
Analysis of Party/Charter Boat VTR Data

- In 2012, 49% of all trips in the proposed reference area were made by just 3 boats.
- In general, around 30 boats fished the proposed reference area annually during 1996-2012, with 4 boats accounting for 42%-96% of all trips during this period.
- The proposed reference area accounts for a small number of all trips in Statistical Area 514 (i.e. ~6%).
- Charter boats fish for more than just groundfish (i.e., Bluefin tuna, sharks, striped bass [in state waters]) and have other area and species options.
Trips

% of all 324 Northern Reference Area Trips

49%

2012 Party & Charter Boats within Northern Reference Area
(324 Trips)

Trips
% of all 324 Northern Reference Area Trips

Number of Trips

% of Total Reference Area Trips

Boat ID

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29
Party/Charter Boats within Northern Reference Area

- 100%
- 90%
- 80%
- 70%
- 60%
- 50%
- 40%
- 30%
- 20%
- 10%
- 0%

# total Boats:
- 1996: 15
- 1997: 9
- 1998: 5
- 1999: 11
- 2000: 11
- 2001: 17
- 2002: 27
- 2003: 18
- 2004: 31
- 2005: 38
- 2006: 36
- 2007: 34
- 2008: 24
- 2009: 26
- 2010: 31
- 2011: 28
- 2012: 29

4 Boats
Northern Reference Area Trips

514 Trips

~6% of all trips
## Estimated Economic Impact of Proposed Reference Area *

<table>
<thead>
<tr>
<th>Years</th>
<th>Mean Annual Revenue</th>
<th>Boats</th>
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<tbody>
<tr>
<td>2010-2012</td>
<td>388k</td>
<td>29</td>
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<tr>
<td>2008-2012</td>
<td>383k</td>
<td>29</td>
</tr>
<tr>
<td>2006-2012</td>
<td>556k</td>
<td>31</td>
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</table>

5 boats accounted for 51%-63% of total revenues over 2010-2012.

The proposed reference area is expected to generate net positive benefit when compared to no action.

* NEFMC OHA2 Draft EIS – Volume 3
Retrospective
1998 vs. 2014

177 commercial fishing boats excluded from proposed DHRA portion of the GoMCA in 1998.

30 Party/Charter boats excluded from the proposed DHRA reference area in 2014.
Private Recreational Fishing

- Survey May – October 2010
- Last trip of each month
- 430 areas of activity in the spatial dataset, of which 191 (44.1%) involved fishing
- Six ‘areas fished’ (3.1%) were in SBNMS
- No ‘areas fished’ are in both of the proposed Reference Areas

Source: 2010 Massachusetts Recreational Boater Survey, Tech. Rpt#03.UHL.11, Massachusetts Ocean Partnership, June 2011
<table>
<thead>
<tr>
<th>Date</th>
<th>Meeting type</th>
<th>Location</th>
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<td>January 9, 2013</td>
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<td>call</td>
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<td>Groundfish Committee and Groundfish AP</td>
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<td>Salem, MA</td>
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<td>February 19, 2014</td>
<td>Groundfish Recreational Advisory Panel</td>
<td>Danvers, MA</td>
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</tbody>
</table>
NEW ENGLAND FISHERY MANAGEMENT COUNCIL

Omnibus Essential Fish Habitat Amendment 2

Draft Environmental Impact Statement

412 pages!
149 maps, 52 tables, 30 figures
THANK YOU & QUESTIONS

Craig MacDonald, Ph.D.

Learn More & Get Involved
http://nefmc.org
http://stellwagen.noaa.gov