

North Carolina

Striped Mullet FMP

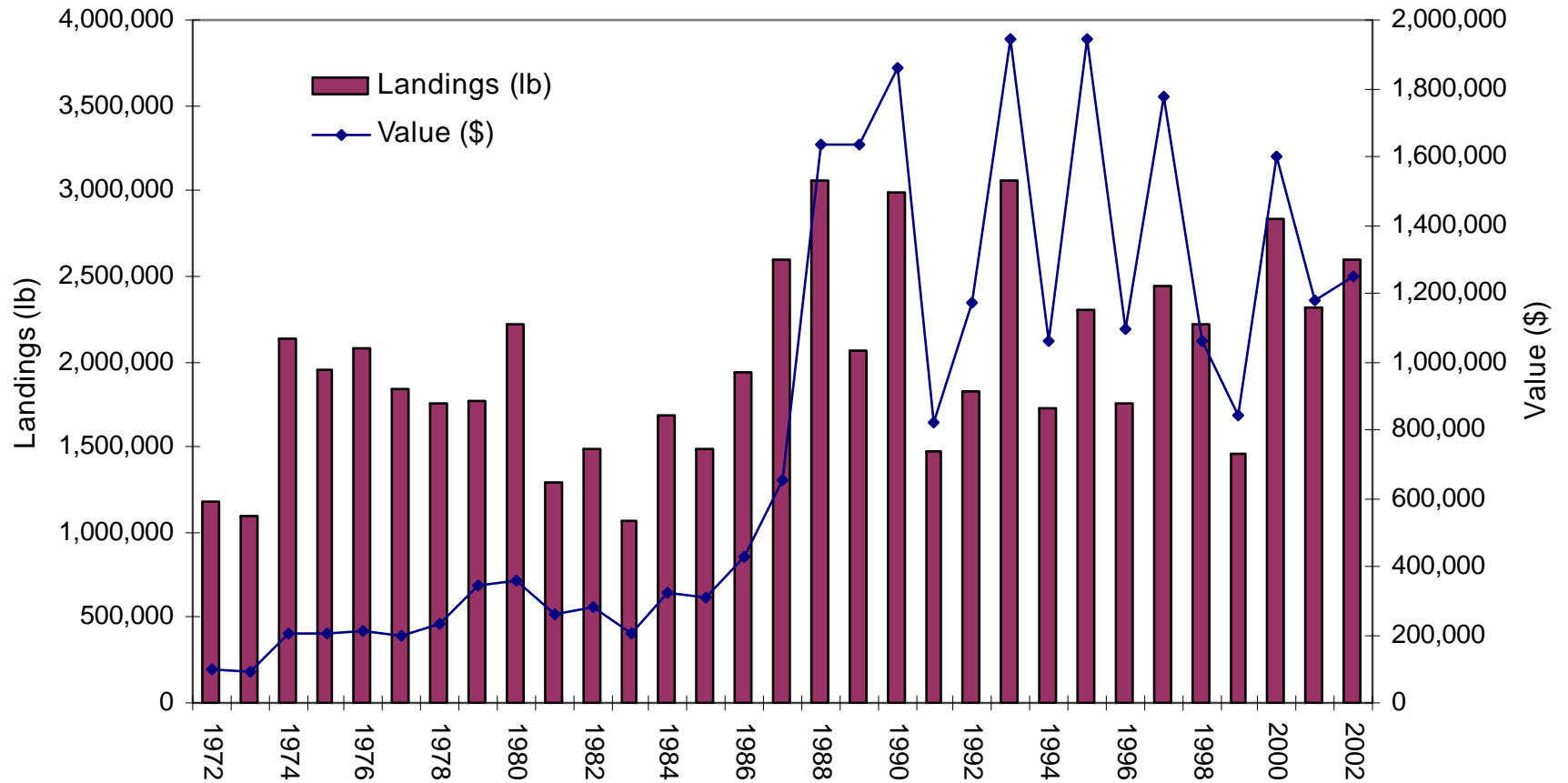
Update

Presentation for the
Marine Fisheries Commission
January 24, 2008

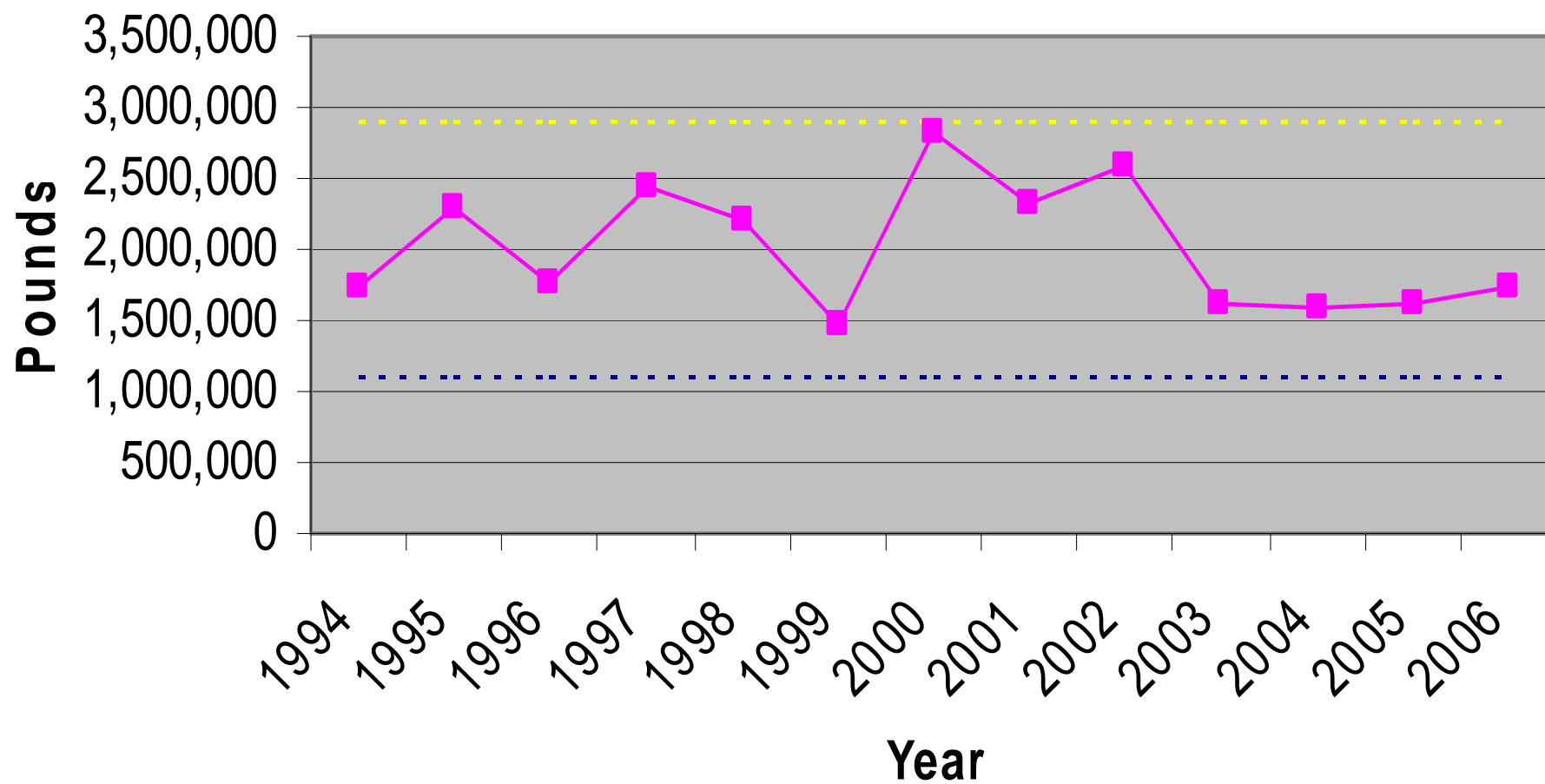




COMMERCIAL HARVEST

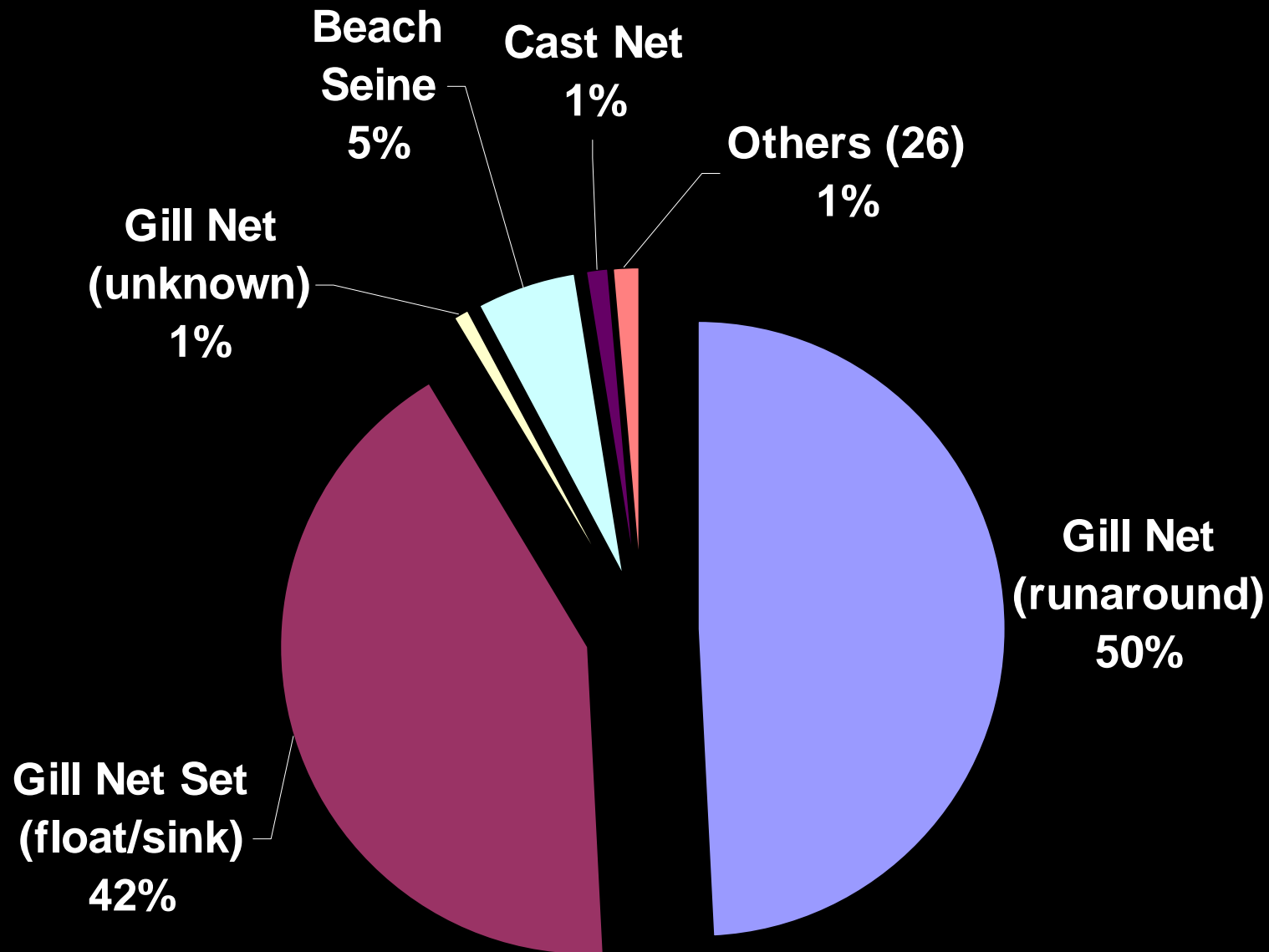


Commercial Mullet Landings 1994-2006

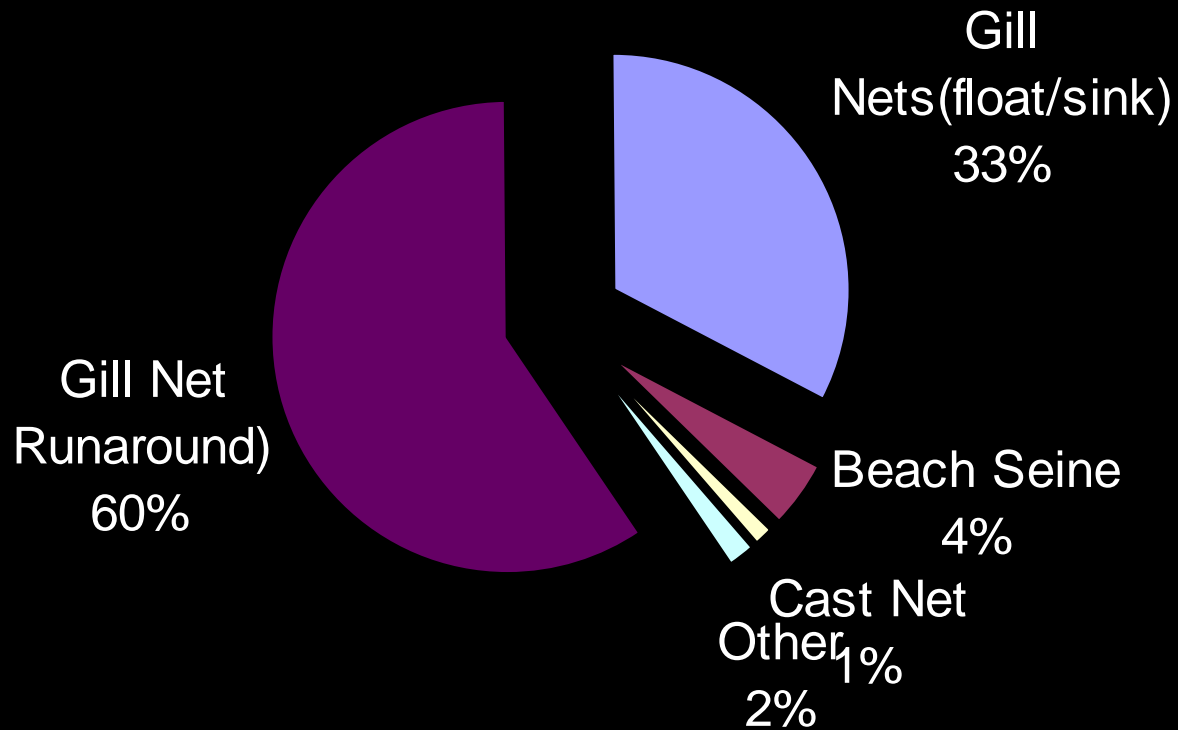




Commercial Harvest by Gear, 1994-2002



Commercial Harvest by Gear, 2003-2006







FMP GOAL

The goal of the 2005 Striped Mullet FMP is to ensure the long-term self-sustainability and sustainable harvest of the North Carolina striped mullet stock.

FMP OBJECTIVES

1. Develop an objective management program that provides conservation of the resource and sustainable harvest in the fishery.
2. Ensure that the spawning stock is of sufficient capacity to prevent recruitment-overfishing.
3. Address socio-economic concerns of all user groups.

FMP OBJECTIVES

4. Restore, improve, and protect critical habitats that affect growth, survival, and reproduction of the North Carolina striped mullet stock.
5. Evaluate, enhance, and initiate studies to increase our understanding of striped mullet biology and population dynamics in North Carolina.
6. Promote public awareness regarding the status and management of the North Carolina striped mullet stock.

Issues

STOCK STATUS

Overfishing is not occurring because:

- Species matures quickly.
- Excellent recruitment and SSB has increased.
 - Hurricane Floyd in 1999, reduced effort contributed to recent increases in population size.
- Fishery selectivity patterns allow for high levels of sustainable exploitation.

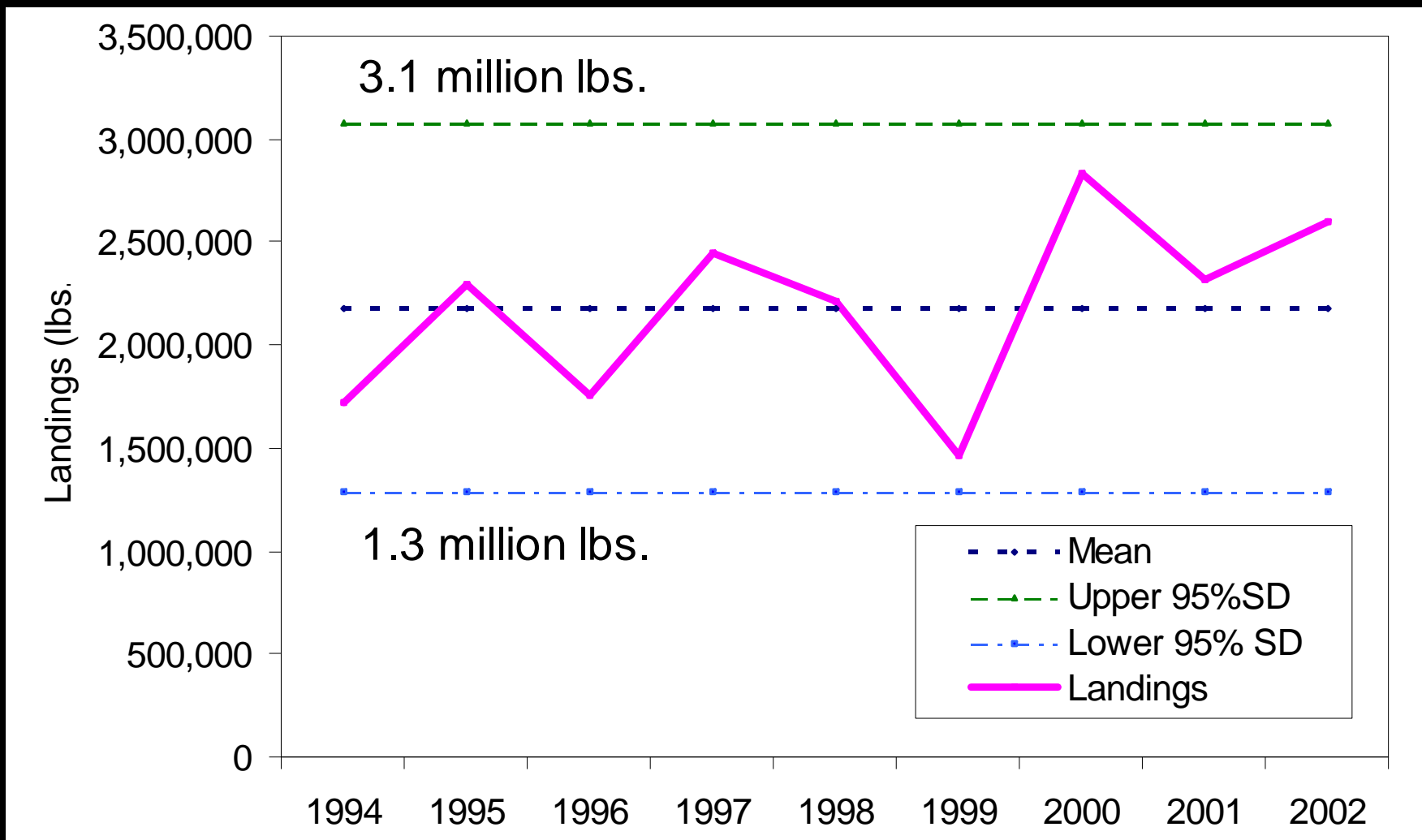
But:

- Currently being fished near the maximum exploitation level that can maintain sustainability.
- Age structure is not well-balanced.

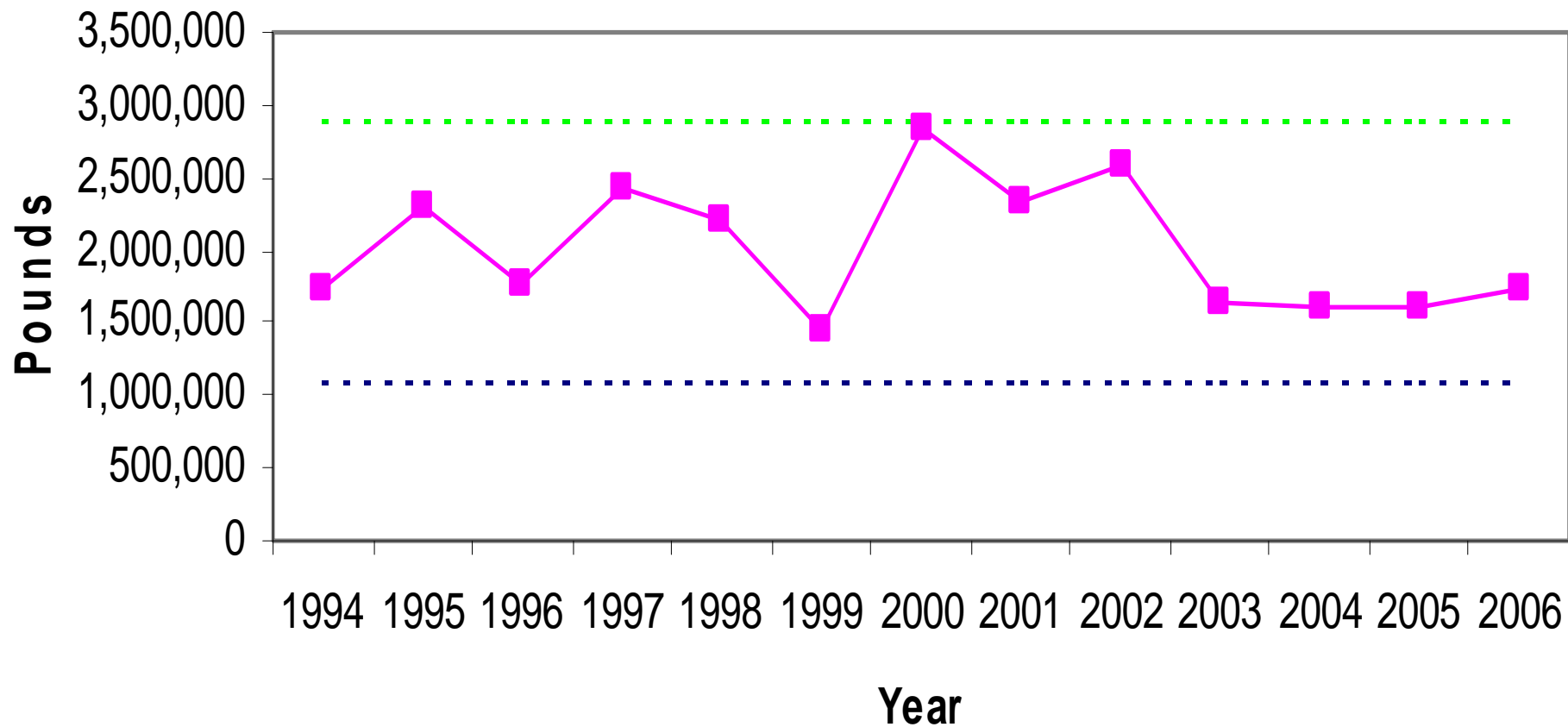
Actions

Status quo and establish triggers for reassessment. Implement no new management measures at this time but establish minimum and maximum commercial landings thresholds of 1.3 million pounds and 3.1 million pounds, respectively.

Commercial landings 1994-2002 with thresholds at 2 standard deviations from the mean



Commercial Mullet Landings 1994-2006



Guthrie and Wong FRG 2007

- 88% of harvest 2005 and 2006 mullet beach seine seasons sampled
- Annual estimates of total mortality, fishing mortality and exploitation rates from yearly age compositions
- Size composition for 2010 assessment
- All of these rates have declined

FRG continued

- Fishing Mortality Rates

$Z = 0.76$ and 0.52

$F = 0.48$ and 0.25

Exploitation Rates

34% and 19%

1997-2002 averaged 45%

Significant reduction in commercial harvest
encouraging for continued sustainability of
striped mullet

HABITAT AND WATER QUALITY

Issue: Identify, protect, enhance, and restore estuarine habitats and water quality.

Being addressed with the implementation of the Coastal Habitat Protection Plan by three commissions

BYCATCH ASSESSMENT OF STRIPED MULLET IN NORTH CAROLINA FISHERIES

Issue: Striped mullet bycatch within North Carolina commercial inshore fisheries.

Action: Establish a long-term fishery dependent observer program to quantify finfish bycatch in the commercial fisheries.

Thayer 2007

- Few differences in bycatch rates of 4" and 8" mesh nets when considered as a whole
- In the inshore (suds) portion of the net, bycatch was significantly greater in the 4" mesh
- Half of the suds section was out of the water during low tide

Thayer continued.

- Dolphins never approached net to prey on fish in nets; never got near inshore 300 feet
- Pier conflict significantly reduced due to pier removals

CHARACTERIZATION OF THE BAIT MULLET CAST NET FISHERY

Issue: Examination and management of the bait mullet cast net fisheries.

Actions:

- Establish a 200 daily possession limit per person in the recreational fishery.
- Implement public outreach to reduce waste of mullets in the recreational fishery.
- Continue estimates of recreational hook and line and bait harvest.
- Continue independent and dependent sampling to improve the estimate of striped mullet and white mullet bait harvest.

PIER, STOP NET AND GILL NET FISHING CONFLICTS IN THE ATLANTIC OCEAN

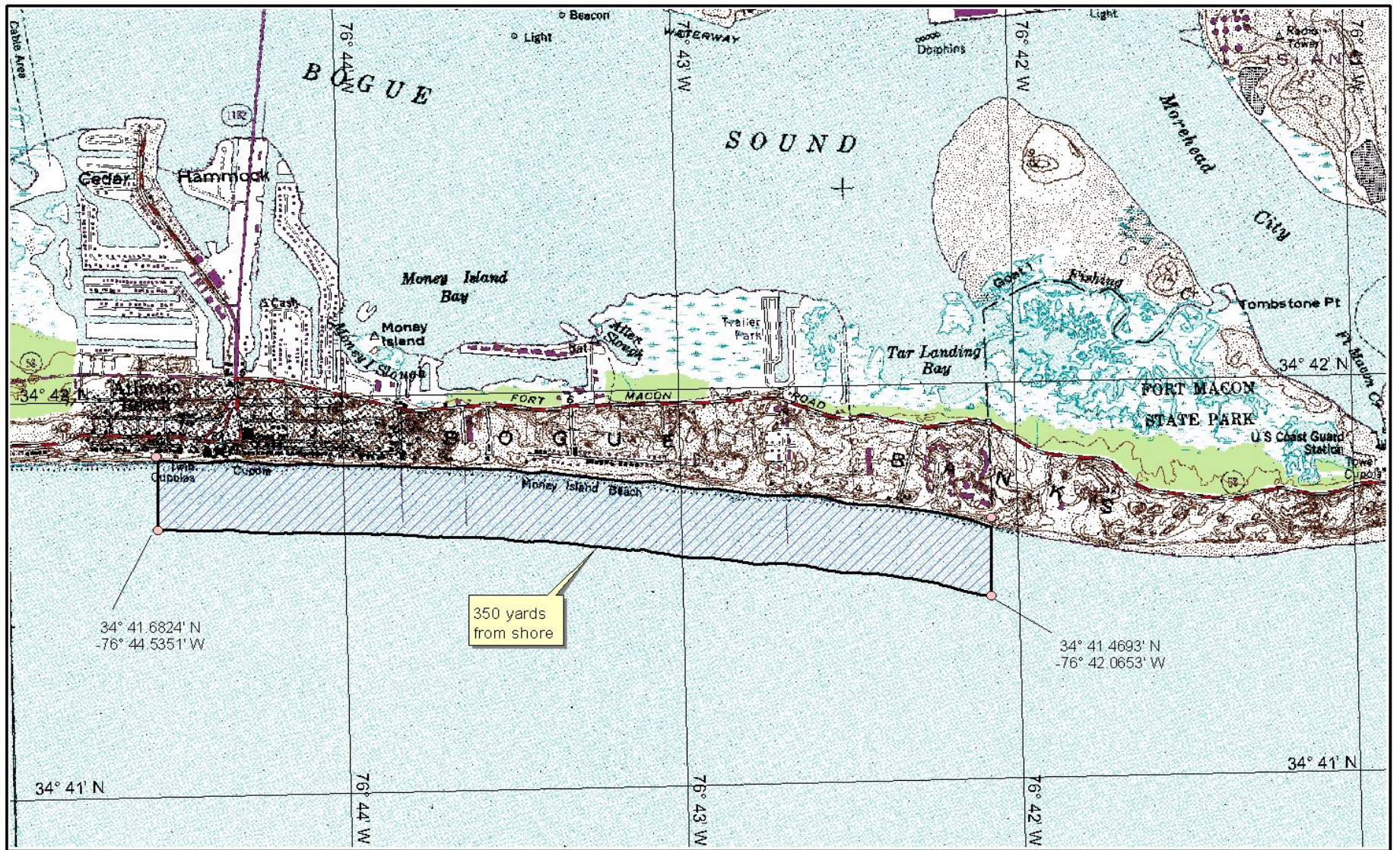
Issue: User conflicts in the Atlantic Ocean striped mullet beach seine fishery.

Actions:

- Adopt the current Bogue Bank gill net proclamation as Rule.
- Resolve the conflict between gill netters and stop netters.

Conflict Subsided

- Removal of Triple S, Sportsman, Iron Steamer piers eliminated pier conflict
- Mediated minimum distance between set stop nets and ocean gill nets
- 2007 Allowed stop net use along Bogue Banks except east of remaining piers

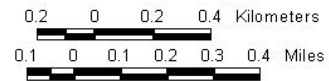


 Restricted Area



NAD83
 State Plane Projection
 July 015, 2005

1:24605



INSHORE STRIPED MULLET GILL NET FISHING CONFLICTS

Issue: Setting of gill nets around private piers and in restricted navigation areas and disruptive practices associated with night fishing.

Action: Continue to address the inshore gill net conflicts on a case-by-case basis.

Spooners Creek solution has been successful so far...

MANAGEMENT IMPLICATIONS OF PROPOSED NMFS BEACH SEINE AND STOP NET REGULATIONS ON BOTTLENOSE DOLPHIN

Issue: Recommendations from the Take Reduction Plan for the western Atlantic coastal bottlenose dolphin.

Action: Monitor new federal gill net requirements.

Thus far, no significant restrictions have been imposed on this fishery.

Biological Research Needs

1. Improve data on maturity, age-growth, identification of spawning locations, and larval/juvenile movement.
2. Establish a long-term fishery dependent observer program to quantify finfish bycatch in the commercial fisheries.
3. Establish a long-term database of adult striped mullet from fishery-independent surveys for the development of an annual abundance index.
4. Improve and validate juvenile abundance estimates.

Biological Research Needs

5. Continue annual age determination and creation of age-length keys.
6. Annual review of commercial and recreational fisheries.
7. Continue improving estimates of recreational H&L and bait harvest.
8. Continue sampling the commercial bait mullet cast net fishery to improve the estimates of striped mullet and white mullet harvest.
9. Continue independent cast net sampling to improve estimates of the proportion of striped mullet and white mullet in this fishery.

Social and Economic Research Needs

1. Continue ongoing annual socioeconomic surveys with commercial fishermen, including those who participate in the striped mullet fishery, in order to monitor its social and economic components.
2. Continue ongoing RCGL surveys in order to monitor landings, as well as the social and economic elements of the striped mullet fishery.

Education Research Needs

1. Implement public outreach on waste reduction of mullets in the recreational fishery.

Summary

- Review of original Striped Mullet to occur in 2009
- FRG points to continued reduction in exploitation rates which benefit sustainable stock
- Management measures taken in 2005 have been sufficient to address conflict
- Tools are still available