Shrimp FMP Amendment 2 Review

DEPARTMENT OF ENVIRONMENTAL QUALITY

Marine Fisheries

Shrimp Advisory Committee | Corrin Flora | March 15, 2021
Presentation Outline

• Draft Amendment 2
  • Goal and Objectives
  • Management Strategies and issues
  • Data needs
  • Interconnectivity
  • Advisory Committee Input

Department of Environmental Quality
Draft Amendment 2: Goal and Objectives

Goal:
Manage the shrimp fishery to provide adequate resource protection, optimize long-term harvest, and minimize ecosystem impacts.

Objectives:
- Reduce bycatch of non-target species of finfish and crustaceans, as well as protected, threatened, and endangered species.
- Promote the restoration, enhancement, and protection of habitat and environmental quality in a manner consistent with the CHPP.
- Develop a strategy through the CHPP to review current nursery areas and to identify and evaluate potential areas suitable for designation.
- Use biological, environmental, habitat, fishery, social, and economic data needed to effectively monitor and manage the shrimp fishery and its ecosystem impacts (i.e., bycatch, habitat degradation).
- Promote implementation of research and education programs designed to improve stakeholder and the general public’s understanding of shrimp trawl bycatch impacts on fish population dynamics.
Draft Amendment 2: Management Strategies

Objectives
- Habitat Protection
- Bycatch Reduction

Management Strategies

Issue Papers
- Protection of Critical Habitats
- Management in SSNAs
- Area Restrictions
- Managing Effort & Gear Modifications

Area Closures
Data Aspects

Protection of Critical Habitats

Management in SSNAs

Area Restrictions

Effort Controls

Data Needs
- Areas currently worked by trawlers
- Logbooks / phone apps
- Water quality major issue
- Water quality Monitoring in high salinity areas
- Public outreach for CHPP

Area Closures

Data Needs
- Expand spatial and temporal coverage of Estuarine Trawl Survey
- Biological and Ecological data for SSNAs
- Economic data for SSNAs
- Evaluation of SSNA closures

Data Needs
- More precise estimates of bycatch
- Expanded observer coverage
- Expanded independent sampling to cover additional months when shrimp and finfish present in sound.
- Additional input from fishermen

Data Needs
- Effort at trip level (tows, tow time, headrope)
- Logbooks / phone apps
- Expanded observer coverage

Data Needs
- RCGL effort
**Habitat Protection**

- **Data Richness**: High
- May also protect critical habitat

**Bycatch Reduction**

- **Data Richness**: Low

**Area Closures**

- **Protection of Critical Habitats**
  - Close areas where SAV and shell bottoms are located
  - May also reduce bycatch
- **Management in SSNAs**
  - Static seasons
  - Complete closures
- **Area Restrictions**
  - Reduce bycatch through area closures that create connectivity between closed areas
  - May also protect critical habitat

**Effort Controls**

- **Managing Effort & Gear Modifications**
- **Time & Gear Restrictions**
  - Fishing day restrictions
  - Time restrictions
  - Headrope limits
  - Other gears
- **Harvest Restrictions**
  - Commercial trip limits
  - Remove recreational creel limit for closed areas
  - Allow non-trawl gears to harvest shrimp in areas closed to shrimp trawls
Interconnectivity of Management Options

Each decision depends and builds on the others.

Bycatch
(Trawl Areas)

Bycatch
(Effort Controls)

Habitat Protection
Draft Amendment 2: Issues

**Habitat Protection**

**Overview:**
- Submerged aquatic vegetation (SAV) and shell bottom habitats are critical habitat for many economically important finfish and invertebrates.

**Example Options:**
- Specific trawl closures could be implemented to protect submerged aquatic vegetation (SAV) and shell bottom habitats.

**SSNAs**

**Overview:**
- Special secondary nursery areas (SSNAs) provide essential habitat for many developing subadult finfish and invertebrates.

**Example Options:**
- Change designation of special secondary nursery areas to permanent secondary nursery areas, static seasons, and delayed openings.

**Area Restrictions**

**Overview:**
- Connectivity between protected areas and creating migration corridors to better encompass the life cycle and distribution of key finfish species.

**Example Options:**
- Area closures in Pamlico Sound and adjacent water bodies.

**Managing Effort**

**Overview:**
- Limited data for these measures due to variability in fishing practices, habitat, and environment make bycatch reductions hard to quantify. Management measures may be used to reduce effort and limit conflicts.

**Example Options:**
- Gear modification, time limits, harvest limits, and increased access for non-trawl gears.

**Data Richness**

High ➔ Data Richness ➔ Low
Habitat Discussion Points

Would the provided examples be effective in protecting SAV and shell bottom habitat?

- Examples generally supported
- Some concern about turbidity
- Consider buffer areas

In comparison to the examples provided, should alternative areas open or closed to trawling be considered? We are particularly interested in feedback on protecting SAV habitat in Bogue Sound

- In Bogue Sound keep IWW and Banks Channel from Wood Island to around Dog Island
- In Core Sound keep the marked navigable channel in the Straits open
- Consider depth contours

What approach should be taken in protecting critical habitat in areas like West Bay and Roanoke Sound?

- Closures of critical habitat supported
- Consider depth contours
- Need to consider with Area Closure Issue
SSNA Discussion Points

If static seasons are implemented, should different seasons be established to account for regional differences in the timing of shrimp migration?

- **Regional static seasons supported**
- **Current SSNA openings based on division sampling (count size, abundance of shrimp and bycatch) supported**
- **Target count sizes do not meet the needs of all user groups and market demands**
- **Current SSNAs openings may not optimize the value of shrimp; further consideration is needed for other species**

How would changes in SSNA management affect the shrimp and crab trawl industry?

- **Changing the designation of SSNAs to SNAs would negatively impact shrimp and crab trawling**
- **SSNAs are ecologically similar to PNAs**
- **Changing the designation of SSNAs to SNAs (complete closures) supported**
- **Changing the designation of SSNAs to SNAs that have not opened in many years supported**

How would changes to the current gill net attendance requirements affect gill net fisheries in these areas?

- **Changes to gill net attendance rules would be another financial burden on fishermen**
Area Discussion Points

Would the provided examples be effective in reducing bycatch?
• Example closure would be extremely detrimental to industry
• Would hurt early season brown shrimp fishery
• Would hurt small boats and skimmers more than larger boats
• Hot spot approach seems reasonable
• Could reduce bycatch

In comparison to the provided examples, are there alternative area closure scenarios that should be considered?
• Consider incremental approach and gauge results (Example: river mouths and Croatan Sound)
• Consider use of alternative gears in closed areas

Should seasonal closures be considered?
• Not discussed
Effort Discussion Points
No Support

If a maximum tow time is implemented, how long should it be? Should it vary regionally, seasonally, or by vessel size?
  • *Would be difficult to enforce*
  • *Fishermen use try nets and other equipment to inform how long to tow*

If the number of fishing days per week is reduced, how many days a week should be open to harvest with shrimp trawls? Should they be added to the current weekend closure or occur mid-week?

If the fishing day is shortened, when should the daily closure occur, daytime, nighttime, or some other set time?
Effort Discussion Points

Are there alternative measures that should be considered to reduce effort in the shrimp trawl fishery?

• None provided

Are there management measures under consideration that would not be effective in reducing effort in the shrimp trawl fishery?

• How we are fishing is less important than where and when we fish in reducing bycatch

If the maximum headrope length is reduced, should it be reduced in the 90-ft areas, the 220-ft areas, or both?

• Fishermen may adjust fishing behavior (like increasing tow speed) to make up for lost efficiency
Effort Discussion Points

If a commercial trip limit is established, what poundage would be reasonable? Should it vary regionally, seasonally, or by vessel size?

- Trip limit would be difficult for industry because of variable conditions and shrimp abundance

Should the lower recreational harvest limit associated with cast nets in closed areas be removed?

- Some did not support
- Some supported if division felt it was needed

Should more access to non-trawl gears in areas closed to shrimp trawling be considered?

- Some did not support
- Some supported if division felt it was needed
Overview:
► Submerged aquatic vegetation (SAV) and shell bottom habitats are critical habitat for many economically important finfish and invertebrates.

AC Input:
► Use contour lines and military zones as buffers
► Use MCHA lines in Core and Bogue sounds with exceptions for areas with majority of effort occurs where little SAV occurs

Overview:
► Special secondary nursery areas (SSNAs) provide essential habitat for many developing sub-adult finfish and invertebrates.

AC Input:
► Support for status quo.
► Some support all SSNAs redesignating as SNAs
► Some support to redesignating SSNAs to SNAs that have not opened in many years

Overview:
► Connectivity between protected areas and creating migration corridors to better encompass the life cycle and distribution of key finfish species.

AC Input:
► Status quo
► Make Pamlico Sound a Secondary Nursery Area

Overview:
► Limited data for these measures due to variability in fishing practices, habitat, and environment make bycatch reductions hard to quantify. Management measures may be used to reduce effort and limit conflicts.

Example Options:
► Status quo for fishing time, day restrictions, & trip limits
► Little support for headrope limits

High Data Richness

Low Data Richness
Effort Controls

Managing Effort & Gear Modifications

Harvest Restrictions
- Harvest of shrimp and bycatch in the recreational fishery may be negligible
- Recreational cast netting should not occur in PNAs
- Some support for changing recreational harvest limits for cast nets
- Limits on commercial harvest would be detrimental given fluctuating price of fuel and shrimp.
- No support for commercial trip limits
- No support for reducing fishing days

Time & Gear Restrictions
- Tow time restrictions would probably reduce bycatch but would be difficult to enforce and would decrease efficiency
- Trip limits would be difficult for industry because of variable conditions and shrimp abundance
- If gear restrictions, like headrope restrictions, are put in place fishermen may make other adjustments and effort reductions may not occur
- Little to no support for headrope limits without more data to inform decision

Protection of Critical Habitats

Management in SSNAs

Area Restrictions

Area Closures

Roanoke Sound
- Look into depth contours for closures
Croatan Sound
- Use depth contours
Core Sound
- MCHA covers area where effort occurs outside of SSNA
- Add Straits to open area
West Bay
- Look into contour lines and buffers
Bogue Sound
- Effort mainly in IWW, Banks Channel (Wood Is. to Dog Is.)
Newport River & White Oak
- No comment on boundary
New River
- Use military restricted zones as buffer zones
North River
- MCHA covers area where effort occurs outside of SSNA

SSNAs openings may not optimize the value of shrimp; further considerations is need for other species
- If chosen, regional static seasons are needed to account for differences in migration of shrimp and bycatch species of concern
- Support for status quo
- Support for complete closures of SSNAs. SSNAs ecologically similar to PNAs and should be treated as such.
- Some support for closing SSNAs that have not opened in many years.

Hot spot maps identify area where high abundances of shrimp and finfish occur in the sound and account for annual variability
- Gear used for sampling is not comparable to gear used by shrimp industry
- Closures would be for all trawls. Exceptions could be made for skimmers and non-trawl gears
- Closures may impact a small boats and skimmers more than larger vessels
- Closures will limit current fishing practices (time and location) and limit access to shrimp as the migrate seasonally based on input from fishermen
- Closures may cause shifts in effort
- Closures would be a burden on fishermen and cause economic losses
- Support for status quo for Pamlico Sound and adjacent waters
- Support for closures at river mouths; however, more data is needed to inform how effective they would be
- Support for complete closures; need for more conservation minded approach in absence of data
- If chosen, regional static seasons are needed to account for differences in migration of shrimp and bycatch species of concern
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- No support for commercial trip limits
- No support for reducing fishing days

**Protection of Critical Habitats**

**Management in SSNAs**

**Area Restrictions**

**Effort Controls**

**Managing Effort & Gear Modifications**

**Area where shrimp and finfish account for most bycatch**
- Closures
- Traps, gill nets, and other current fishing gear
- Head rope
- Small boats
- Larger vessels
- Effort
- Economic losses
- Pamlico River mouths
- Needed to be reduced
- No support
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**Effort**

**Controls**

**Modifications**
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Effort Controls
- Hot spot maps identify area where high abundances of shrimp and finfish occur annually
- Gear closures
- Closures except skimmers
- Close vessels
- Close practices around sea fishers
- Close fishers
- Support for closure
- Support for harvest
- Support for more info

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Data Richness

Habitat Protection

Bycatch Reduction

Area Closures

Effort Controls

Protection of Critical Habitats

Management in SSNAs

Area Restrictions

Managing Effort & Gear Modifications

• Static seasons
• Complete closures

Reduce bycatch through area closures that create connectivity between closed areas

Time & Gear Restrictions
• Fishing day restrictions
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• Other gears

Harvest Restrictions
• Commercial trip limits
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• Allow non-trawl gears to harvest shrimp in areas closed to shrimp trawls

Close areas where SAV and shell bottoms are located

Complete closures may also protect critical habitat

May also reduce bycatch

May also protect critical habitat

High Data Richness

Low Data Richness

Area Closures

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Management in SSNAs

Area Restrictions

Managing Effort & Gear Modifications
Issue Paper Interconnectivity

- Effort Reduction
- Area Closure
- Redesignate SSNA
- Critical Habitat
Questions?

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