

Decision Document
for
Shrimp Amendment 9
to the Shrimp Fishery Management
Plan of the South Atlantic Region
March 2012

This document is intended to serve as a SUMMARY for the actions and alternatives in Shrimp Amendment 9. It also provides background information and includes a summary of the expected biological and socio-economic effects from these proposed management measures.

***NOTE: Decisions the Committee / Council need to make are highlighted in yellow**



Why is the South Atlantic Council taking Action?

Currently, the process to request a concurrent closure of the EEZ due to cold weather requires a state to provide data that demonstrates an 80% decrease in abundance of overwintering white shrimp to a review panel, and the panel's recommendations are reviewed at the next South Atlantic Fishery Management Council (Council) meeting (usually in March). After approval by the Council, a letter is drafted to the NOAA Fisheries Regional Administrator requesting that the EEZ off the state be closed to penaeid shrimp harvest. The Regional Administrator then publishes an official notice of closure. Although the process takes only a week or so to implement the closure after the Council approves the state's request, it is likely that the severe weather event has occurred weeks or even months earlier. The Council is concerned that the process may not be as helpful in protecting the overwintering stock affected by cold weather and wanted to consider modifications to improve the timeliness and effectiveness of the concurrent closures.

For the action to revise the overfished status determination criteria (B_{MSY}) proxy for pink shrimp, the Council concluded that the biological parameters used in pink shrimp management can be improved through additional surveys and a new B_{MSY} proxy based on those surveys. Currently, the Southeast Area Monitoring and Assessment Program (SEAMAP) survey is the proxy for pink shrimp. According to SEAMAP sampling data, the stock of South Atlantic pink shrimp has been below the threshold (0.461 shrimp/hectare) in recent years, which translates into an overfished status for pink shrimp. However, the Shrimp Review Panel (a group made up of scientists from North Carolina DNR, South Carolina DNR, Georgia DNR, Florida FWC, and NOAA Fisheries Service) reviewed information about pink shrimp and concluded that other factors likely affect the pink shrimp stock rather than fishing mortality. Further, the SEAMAP survey does not have adequate data south of Cape Canaveral, Florida and north of Cape Hatteras, North Carolina. The Shrimp Review Panel has recommended that the inclusion of additional surveys, such as the Pamlico Sound Trawl Survey, be considered in monitoring the pink shrimp B_{MSY} in addition to SEAMAP.

The IPT suggests the following purpose and need for the Shrimp Amendment 9:

Option 1. Approve the Purpose and Need as worded.

Option 2. Modify the recommended language for the Purpose and Need and approve.

Purpose for Action

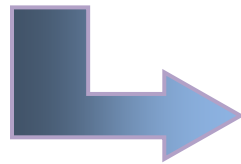
The *purpose* of Amendment 9 is to modify the criteria for South Atlantic states requesting a concurrent closure to protect overwintering white shrimp, streamline the process by which a state can request a concurrent closure, and revise the methodology for monitoring and establishing an overfished (BMSY) proxy for pink shrimp.

Need for Action

The *need* for action in Amendment 9 is to allow for a more efficient process to facilitate timely concurrent closure requests to maximize protection of overwintering white shrimp during cold weather events, and to improve the accuracy of the biological parameters for pink shrimp management.

What Are the Proposed Actions?

There are 2 actions being proposed in Shrimp Amendment 9. Each *action* has a range of *alternatives*, including a 'no action alternative' and a 'preferred alternative'.



*Current** *Proposed Actions in* *Amendment 9*

1. Modify the process for a state to request a concurrent closure of the penaeid shrimp fisheries in the adjacent EEZ during severe winter weather
2. Revise the overfished status determination criteria (B_{MSY} proxy) for the pink shrimp stock

*IPT recommends splitting Action 1 into 2 separate actions:

Action 1 would address criteria that triggers a states' ability to request concurrent closure of the EEZ

Action 2 would modify the process for a state requesting a concurrent closure of the EEZ

Action 1. Modify the process for a state to request a concurrent closure of the penaeid shrimp fisheries in the adjacent EEZ during severe winter weather

Alternative 1. No Action. Currently, the process requires any state requesting a concurrent closure to provide data to demonstrate an 80% decrease in abundance to a review panel, and the panel’s recommendations are reviewed at the next Council meeting. After approval by the Council, a letter is sent to the NOAA Fisheries Regional Administrator requesting that the EEZ adjacent to the state be closed to penaeid shrimp harvest. The Regional Administrator then publishes an official notice of closure in the Federal Register.

Alternative 2. A state may request a concurrent closure upon providing information that demonstrates an 80% decrease in shrimp abundance OR information that demonstrates an exceeded threshold for water temperature.

Option a) Water temperature must be 7°C or below for at least one week.

Option b) Water temperature must be 8°C or below for at least one week.

Option c) Water temperature must be 9°C or below for at least one week.

Alternative 3. A state requesting a concurrent closure would send a letter directly to NOAA Fisheries Service with the request and necessary data to demonstrate that criteria have been met.

Option a) Data would be submitted to the Shrimp Review Panel, who would review data and make a recommendation to NOAA Fisheries Service.

Option b) Data would be submitted directly for review by NOAA Fisheries Service.

*Current
Proposed Actions in
Amendment 9*

- 1. Modify the process for a state to request a concurrent closure of the penaeid shrimp fisheries in the adjacent EEZ during severe winter weather**
2. Revise the overfished status determination criteria (B_{MSY} proxy) for the pink shrimp stock

Shrimp Amendment 9 IPT Recommendations for Action 1:

The IPT recommends splitting Action 1 into two separate actions as depicted below – one addressing criteria that triggers an overwintering shrimp closure, and another modifying the process through which states can request and implement a concurrent closure.

Rationale: Splitting this action into 2 actions can address the different issues (additional criteria and changes in process) independently.

Selection of multi-preferred Alternatives for Action 1 is possible.

IPT Recommendation for Action 1 (criteria):

Option 1. Adopt IPT recommendation for the revised Action 1 and Alternatives

Option 2. Modify the IPT recommendation for Action 1 and Alternatives

Action 1. Specify additional criteria that triggers a states' ability to request a concurrent closure of the overwintering white shrimp fishery in the adjacent EEZ during severe winter weather

Alternative 1. No Action. Currently, as defined under the FMP for the South Atlantic shrimp fishery, states may request a concurrent closure of the EEZ adjacent to their closed state waters following severe winter weather upon providing information that demonstrates an 80% or greater reduction in the population of overwintering white shrimp.

Alternative 2. A state may request a concurrent closure upon providing information that demonstrates an exceeded threshold for water temperature. Water temperature must be 7°C (45°F) or below for at least one week.

Alternative 3. A state may request a concurrent closure upon providing information that demonstrates an exceeded threshold for water temperature. Water temperature must be 8°C (46°F) or below for at least one week.

NOTE: The Shrimp Review Panel discussed that 46°F temperature is a suitable benchmark for a temperature threshold criteria. The Review Panel did not endorse a specific alternative as a preferred.

The Shrimp and Deepwater Shrimp APs endorsed Alternative 3 as preferred. The APs prefer for a temperature threshold criteria to replace the current requirement for this measure.

Alternative 4. A state may request a concurrent closure upon providing information that demonstrates an exceeded threshold for water temperature. Water temperature must be 9°C (48°F) or below for at least one week.

DECISION: Clarify whether current criteria (population abundance) remain in place in addition to temperature threshold criteria or is replaced by temperature threshold criteria, and select a preferred alternative for Action 1.

IPT Recommendation for new Action 2 (process):

Option 1. Adopt IPT recommendation for the new Action 2 and Alternatives

Option 2. Modify the IPT recommendation for new Action 2 and Alternatives

Action 2. Modify the process for a state to request a concurrent closure of the overwintering white shrimp fishery in the adjacent EEZ during severe winter weather

Alternative 1. No Action. Currently, the process requires any state requesting a concurrent closure to provide data to demonstrate an 80% decrease in abundance of overwintering white shrimp to a review panel, and the panel's recommendations are reviewed at the next Council meeting. After approval by the Council, a letter is sent to the NOAA Fisheries Regional Administrator requesting that the EEZ adjacent to the state be closed to penaeid shrimp harvest. The Regional Administrator then publishes an official notice of closure in the Federal Register.

Alternative 2. Any state requesting a concurrent closure would send a letter directly to NOAA Fisheries Service with the request and necessary data to demonstrate that criteria have been met.

NOTE: The Shrimp and Deepwater Shrimp APs endorse Alternative 2 as preferred.

Alternative 3. Any state requesting a concurrent closure would send a letter directly to NOAA Fisheries Service with the request and necessary data to demonstrate that criteria have been met. The requesting state would also submit data to the Shrimp Review Panel, who would review data and make a recommendation to NOAA Fisheries Service.

NOTE: Alternative 3 would require a notice to be published in the *Federal Register* at least 23 days prior to the convening of the Shrimp Review Panel.

NOTE: The Shrimp Review Panel is interested in remaining a part of the process in reviewing state data as identified in Alternative 3, only if the process is more expeditious than what is currently in place.

DECISION: Select a preferred alternative for new Action 2.

Shrimp and Deepwater Shrimp APs Recommendations for Actions 1 and 2:

The Shrimp and Deepwater Shrimp APs met jointly on April 20th in Charleston, SC. They had several recommendations for the measure addressing concurrent closure of a state's EEZ during severe winter weather.

The APs support Action 1, Alternative 3 as a preferred for this measure. This alternative enables a state to request a concurrent closure upon providing information that demonstrates an exceeded threshold for water temperature. Water temperature must be 46°F or below for at least a week. The APs intent is to recommend that temperature threshold criteria be the required criteria a state must demonstrate to request a concurrent closure, not in addition to current criteria requirements (population abundance).

The APs also endorse new Action 2, Alternative 2 and suggest that exclusion of the Shrimp Review Panel as a reviewer of states' data would expedite the implementation process of a concurrent closure upon approval by the Secretary of Commerce.

Shrimp Review Panel Recommendations for Action 1 and 2:

The Shrimp Review Panel met via webinar on May 2nd and discussed Shrimp Amendment 9. Regarding Action 1, the Shrimp Review Panel is interested in remaining a part of the process for reviewing data that would support a request for a concurrent closure only if the process is expeditious (i.e., no requirement to notice the convening of the Shrimp Review Panel to review state data in the *Federal Register*).

What Are the Expected Effects for Action 1 (criteria)?

Biological: Under **Alternative 1 (No Action)**, white shrimp relative abundance following a winter cold kill is compared with the historical long-term mean CPUE for that month, or the average CPUE in samples taken prior to the onset of the cold weather are compared to CPUE in samples taken immediately after and within two weeks of the winter kill to determine if the overwintering population has decreased by 80% or more. If this criterion is met, then the affected state could request concurrent closure of the penaeid shrimp fishery in federal waters adjacent to their state waters.

The range of temperature alternatives represents input from the Shrimp Advisory Panels as well as the Shrimp Review Panel. **Alternative 2** would be the least biologically beneficial since it would require the lowest temperature of all those considered to trigger a request for a concurrent closure. Alternately, **Alternative 4** would be most biologically beneficial because it is the highest temperature option under consideration, and the concurrent closure criteria would more easily be met. **Alternative 3** represents a mid-point between **Alternatives 2** and **4**, and would likely result in biological benefits greater than **Alternative 2**, but less than **Alternative 4**.

Economic: **Alternative 1 (No Action)** allows states to request a closure in the EEZ off their state presuming the state has already closed state waters and can provide evidence demonstrating a reduction of at least 80% in the population of overwintering white shrimp. The evidence provided is up to the state and could vary across states. **Alternatives 2 – 4** provide a standardized method using a temperature threshold for determining when a state can ask for a concurrent closure affecting all penaeid species. Presumably, the higher the temperature for the closure, the sooner fishing pressure on the stock will end. While this might have short term negative economic consequences for fishermen, preserving the remaining biomass for the next fishing season would have greater, positive economic impact the following season.

Social: The social effects from **Alternative 1 (No Action)** would depend upon whether shrimp stocks were significantly affected by the present closure system, which may not be as timely as that outlined in other alternatives. If the cold weather event has had a significant detrimental effect on the stock, then there could be negative social effects from **No Action**. Rather than continue to risk such depletions, **Alternative 2** uses a water temperature threshold that would make the determination easier and more timely and may reduce the risk of negative social effects by protecting the shrimp stock. **Alternatives 3 and 4** each use a one-degree increase in temperature (°C) threshold respectively and the social effects would be the same as those described above, being determined by the ability of the alternative to provide sufficient protection to the stock.

What Are the Expected Effects for Action 2 (process)?

Biological: The procedure outlined in the original Shrimp FMP constitutes **Alternative 1 (No Action)**, which is considered the least biologically beneficial because it requires the most amount of time to implement a concurrent closure compared to all other alternatives. Under **Alternative 1 (No Action)**, not only is the Shrimp Review Panel required to convene to examine the data supporting the concurrent closure request, but the Council must also review the subject data.

Alternative 2 represents the most streamlined process by which South Atlantic states may request concurrent closures of federal waters to protect overwintering shrimp stocks.

Alternative 2, would, theoretically also requires the least amount of time to actually implement the concurrent closure and is thus considered the most biologically beneficial alternative under this action.

The level of biological benefit of **Alternative 3** is likely to fall between that of **Alternative 1 (No Action)** and **Alternative 2** based on the theoretical length of time it would be expected to take to implement a concurrent closure. Based on the assumption that the sooner a concurrent closure could be implemented the longer overwintering penaeid shrimp would be protected from fishing in federal waters, the option that would require the least amount of time to implement would be considered the most biologically advantageous.

Economic:

Social: Under **Alternative 1** the current process may not provide sufficient protection and therefore could have negative social effects. Under **Alternative 3**, review by the Shrimp Review Panel could delay the action more than **Alternative 2** that would be a more direct and timely approach. Again, the social effects would depend upon the effect of any delay on a closure and its impact upon the stock.

Action 2. Revise the minimum stock size threshold (MSST) proxy for pink shrimp

Alternative 1. No Action. Currently the proxy for the pink shrimp minimum stock size threshold (MSST) is defined as the parent stock size capable of producing maximum sustainable yield (MSY) the following year. The pink shrimp MSST proxy uses SEAMAP trawl data to approximate shrimp spawning biomass.

Alternative 2. Use another fishery-independent survey for the pink shrimp MSST proxy in addition to SEAMAP. [Sub-alternatives to be added by Shrimp Review Panel]

Alternative 3. Use another fishery-independent survey for the pink shrimp MSST proxy in place of SEAMAP. [Sub-alternatives to be added by Shrimp Review Panel]

- Sub-alternative a: Pamlico Sound Survey
- Sub-alternative b: others?

Alternative 4. Add the Gulf pink shrimp MSST proxy in addition to SEAMAP.

Current Proposed Actions in Amendment 9

1. Modify the process for a state to request a concurrent closure of the penaeid shrimp fisheries in the adjacent EEZ during severe winter weather

2. Revise the overfished status determination criteria (B_{MSY} proxy) for the pink shrimp stock

Shrimp Amendment 9 IPT Recommendations for Action 2:

The IPT recommends modifying the language for Action 2, designating this as Action 3, and referring to the Shrimp Review Panel recommendations for guidance on development of appropriate alternatives. Because this is a measure that revisits an issue addressed in Shrimp Amendment 6, Action 6, the alternatives previously developed in Amendment 6 are included below. What is shown as the No Action alternative was selected as the preferred in Amendment 6.

The previous IPT recommendation split Action 1 into 2 separate actions. If approved by the Council, this would assign the B_{MSY} proxy measure as Action 3 in Amendment 9.

IPT Recommendation for new Action 3:

Option 1. Adopt IPT recommendation for new Action 3 and Alternatives

Option 2. Modify the IPT recommendation for new Action 3 and Alternatives

Action 3. Revise the overfished status determination criteria (B_{MSY} proxy) for the pink shrimp stock

Alternative 1. No Action. Overfishing (Maximum Fishing Mortality Threshold; MFMT) for all penaeid species is a fishing mortality rate that diminishes the stock below the designated MSY stock abundance (B_{MSY}) for two consecutive years and Minimum Stock Size Threshold (MSST) is established with two thresholds: (a) if the stock diminishes to $\frac{1}{2}$ MSY abundance ($\frac{1}{2} B_{MSY}$) in one year, or (b) if the stock is diminished below MSY abundance (B_{MSY}) for two consecutive years. A proxy for B_{MSY} (0.461 individuals per hectare) has been established for pink shrimp using CPUE information from SEAMAP-SA data as the lowest values in the 1990-2003 time period that produced catches meeting MSY the following year.

Alternative 2. Pink shrimp are overfished when the annual landings fall below two standard deviations below mean landings 1957-1993 for three consecutive years [286,293 pounds heads-on]. It is assumed that overfishing is occurring when the overfished threshold specified is met. (Source: Shrimp Amendment 6, Action 6, Alternative 2)

Alternative 3. Revise or establish consistent overfishing and overfished definitions for penaeid shrimp (specifically, pink shrimp) based on the established MSY and OY catch values. Overfishing (MFMT) for pink shrimp would be defined as a fishing mortality rate that led to annual landings larger than two standard deviations above MSY for two consecutive years, and the overfished threshold (MSST) for pink shrimp would be defined as annual landings smaller than two standard deviations below MSY for two consecutive years.

Pink shrimp: MSST = 0.3 MP MSY = 1.8 MP MFMT = 3.3 MP.

(Source: Shrimp Amendment 6, Action 6, Alternative 3)

***NOTE:** Alternatives 4 and 5 are Shrimp IPT recommendations after input from the Shrimp Review Panel. The Shrimp Review Panel endorses the inclusion of the Pamlico Sound Trawl Survey as an additional data source in development of B_{MSY} for pink shrimp. Alternative 4 allows for additional data sources to be included in the future. Alternative 5 is more specific, indicating which two data sources should be used in determining the B_{MSY} proxy.

Alternative 4. A B_{MSY} proxy for pink shrimp would be calculated using the best scientific information available as determined by the Shrimp Review Panel, which would meet on an annual basis to review the B_{MSY} proxy and stock status.

Alternative 5. Establish two proxies for B_{MSY} for pink shrimp using CPUE information from SEAMAP and the Pamlico Sound Trawl Survey as the lowest values in [insert time range] that produced catches meeting MSY the following year.

DECISION: Provide a time range for Alternative 5 and select a preferred alternative for new Action 3.

Shrimp and Deepwater Shrimp APs Recommendations for the B_{MSY} proxy measure (Action 3):

The APs recommended that the Shrimp Review Panel develop additional definitions for the overfished level for pink shrimp, as necessary. They support the Shrimp Review Panel's identification of additional sources of shrimp abundance data to either supplement or replace the SEAMAP survey.

Shrimp Review Panel Recommendations for the B_{MSY} proxy measure (Action 3):

The Shrimp Review Panel concluded that the Pamlico Sound Trawl Survey, coordinated by NC Division of Marine Fisheries, be factored into consideration as an additional data source in development of the B_{MSY} proxy for South Atlantic pink shrimp. If the issue continues to occur with the pink shrimp stock falling below the overfished threshold, the Shrimp Review Panel recommends they revisit discussion of applying a new assessment model for penaeid stocks (and pink shrimp, primarily) in the South Atlantic similar to Stock Synthesis Model used in the Gulf.

Alternatives 4 & 5 would include the Pamlico Sound Trawl Survey as a data source considered in development of the B_{MSY} proxy for South Atlantic pink shrimp.

What Are the Expected Effects for Action 3 (B_{MSY} proxy for pink shrimp)?

Biological: There are no direct biological impacts from establishing benchmarks by which to assess the health of the stock. Neither **Alternatives 2** or **3** address the key issue regarding available data used to formulate the overfished and overfishing thresholds for pink shrimp. Currently the SEAMAP survey does not sample the northern and southern portions of the pink shrimp population range, and therefore, it is difficult to use the available data to create accurate estimates of appropriate benchmark parameters for the stock. Because **Alternatives 2** and **3** do not include a level of flexibility that would allow the use of available data from other sources that may encompass more pink shrimp population information in the northern and southern regions of the species range, neither is likely to result in predictable biological benefits.

Alternatives 4 and **5** both remove the limitation on using only SEAMAP survey data to establish an overfished definition and monitor the stock status of pink shrimp. **Alternative 4** is the most flexible in term of what data could be used to track pink shrimp stock status, and would allow the use of new data sources that may emerge in the future without having to adjust the methodology for defining the overfished threshold through another plan amendment. However, **Alternative 4** does not define a specific number for the overfished threshold for pink shrimp, it only specified the methodology that would be implemented for doing so and for monitoring where the pink shrimp abundance levels stand in relation to the B_{MSY} proxy. **Alternative 5** would establish two proxies for B_{MSY} based either on the CPUE data from the SEAMAP survey, or CPUE data from the Pamlico Sound Survey. Though not included as part of the alternative at this time, it is likely the Shrimp Review Panel would meet to determine which B_{MSY} proxy is

most appropriate. **Alternative 5** is somewhat more restrictive than **Alternative 4** since it only specifies two sources of data that may be used to establish a B_{MSY} proxy. If new sources of pink shrimp population data emerge in the future that could be used to monitor the stock and create new estimates of B_{MSY} , a new plan amendment or framework would need to be developed in order to allow such data sources to be used. **Alternative 5** also provides the opportunity to update the time series of data to be used to incorporate a more recent data set for the stock, which may reflect recent economic and environmental issues affecting the fishery. Similar to **Alternative 4**, **Alternative 5** does not include actual values for B_{MSY} at this point.

Economic: **Action 3** is a biological action that has indeterminate economic effects. Presumably, any alternative that would set an overfished level for pink shrimp that would lead to subsequent measures that might close the fishery early could have a negative economic effect. The lower the overfished threshold is set, the greater the probability the fishery could close early. However, such negative economic effects theoretically would only be short lived. Setting a lower overfished threshold could have positive economic effects for future fishing seasons.

Social: Establishing the best proxy of overfished status for pink shrimp should have beneficial social effects, as it would provide the best protection for the stock without imposing unnecessary regulatory burdens on fishermen, their families, and communities. Currently, under **Alternative 1**, the no action alternative, negative social effects could occur if the fishery is declared overfished when the current proxy may not be an accurate portrayal of stock status. With **Alternative 2** the use of fishery dependent data may overlook important changes happening elsewhere within the environment that are responsible for changes in stock status and therefore jeopardize long-term viability of the stock. Such a risk would have the potential for negative social effects if stocks declined as a result. **Alternative 3** would revise the overfishing and overfished definitions based upon established MSY and OY, but may not adequately encompass environmental events that occur and affect landings. **Alternative 4** would allow the shrimp review panel the opportunity to determine the best available information to be used in establishing a B_{MSY} proxy which could improve the overall assessment and be beneficial to the overall process, as would **Alternative 5** which by using more information in making the determination would result in a more accurate assessment.

Public Hearing Dates and Locations

Public Hearings will be held from 4 – 7 p.m.

<p><u>August 9, 2012</u> Hilton Key Largo Resort 97000 South Overseas Highway Key Largo, Florida 33037 Phone: 305-852-5553</p>	<p><u>August 8, 2012</u> Doubletree Hotel 2080 N. Atlantic Avenue Cocoa Beach, Florida 32931 Phone: 321-783-9222</p>
<p><u>August 7, 2012</u> Jacksonville Marriott 4670 Salisbury Road Jacksonville, Florida 32256 Phone: 904-296-2222</p>	<p><u>August 6, 2012</u> Richmond Hill City Center 520 Cedar Street Richmond Hill, Georgia 31324 Phone: 912-445-0043</p>
<p><u>August 14, 2012</u> Hilton Garden Inn Airport 5265 International Boulevard North Charleston, SC 29418 Phone: 843-308-9330</p>	<p><u>August 16, 2012</u> Hilton New Bern Riverfront 100 Middle Street New Bern, North Carolina 28560 Phone: 252-638-3585</p>

- Option 1. Approve the Shrimp Amendment 9 for public hearings.
- Option 2. Review Shrimp Amendment 9 at the September 2012 meeting before approving for public hearings.