

Snook Workgroup

Update

Update No. 1 - February 8, 2007



Florida Fish and Wildlife Conservation Commission
Division of Marine Fisheries Management

Update No. 1 - This item was updated following a meeting of the Snook Workgroup and public workshops held in January 2007.

This is a brief update on the recommendations of the Snook Workgroup and the public workshop response to these recommendations.

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Assessment Results Recap



- Not meeting Commission's management goal of 40% SPR (Gulf 26-32%; Atlantic 25-26%)
- Total snook harvest on both coasts has been increasing due to increased number of anglers and increased popularity of snook fishing
- Total catch rates have increased through 2004 on both coasts
- 35% of the total statewide harvest is attributable to deaths that occurred after snook were released



This slide provides a brief summary of the 2006 snook stock assessment, which includes data through 2004. This assessment determined that we are not meeting our management goal of 40% spawning potential ratio (SPR). Depending on which assessment model is used, the Gulf stock SPR ranges from 26 to 32%, and the Atlantic stock SPR ranges from 25-26%. The total snook harvest on both coasts has been increasing due to the increased number of anglers and the increased popularity of snook fishing.

On the Atlantic coast, total catch rates have increased since 1997 and the estimated total catch rate in 2004 was the highest in the fourteen year time-series. Catch rates on the Gulf coast have been increasing and the estimated total catch rate in 2004 was also the highest value on record. The average release mortality rate, (i.e., the percentage of snook that die after having been released alive), is 2.13%. Release mortality accounted for about 43,700 out of 112,600 fish (39%) harvested on the Gulf coast and 10,600 out of 40,400 fish (26%) harvested in 2004 on the Atlantic coast. Thus, 35% of the total statewide harvest is attributable to deaths that occurred after snook were released. Recreational anglers in Florida continue to release more than 90% of the snook they catch.

Current Regulations



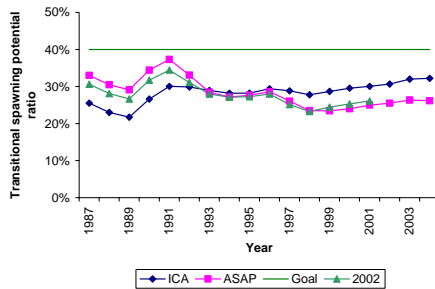
- Slot limit: 27" to 34" total length (pinched tail)
- Bag limit: 2 per person - **Atlantic**
1 per person - **Gulf** (ENP and Monroe county)
- Closed season: Dec. 15 - Jan 31 - **Statewide**
June, July, Aug - **Atlantic**
May, June, July, Aug - **Gulf**
- Snook stamp: Must purchase \$2.00 permit in order to keep a snook (unless exempt from buying a fishing license)
- Management goal: 40% spawning potential ratio

The current regulations for snook are listed above. A \$2.00 snook stamp or permit must be purchased in order to keep a snook if you are not exempt from buying a fishing license. Currently, if anglers do not need a fishing license, they are not required to purchase a snook stamp (*e.g.*, if they qualify for one of the current exemptions). A management goal of 40% SPR was set in 1994 by the Marine Fisheries Commission. This SPR goal is more conservative than the goal for other species because snook are vulnerable to cold weather events and stakeholders wanted snook managed as a trophy fishery.

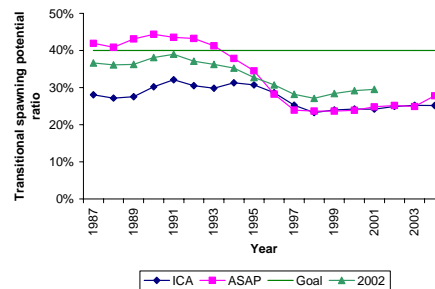
SPR Values



Gulf



Atlantic



- Spawning Potential Ratio (SPR) is the ratio of the total weight of mature fish in a fished population to the total weight that would exist if the population was not fished

These two graphs show the SPR values for the Gulf and Atlantic coast populations. The Commission's management goal of 40% SPR is represented by the solid line. SPR is the ratio of the total weight of mature fish in a fished population to the total weight that would exist if the population was not fished. Also shown are the two model results, Integrated Catch at Age (ICA) and Age Structured Assessment Program (ASAP) from the most recent assessment, as well as the estimates from the 2002 snook assessment. On the Gulf coast, both models indicate that the 40% SPR goal has never been met. On the Atlantic coast, one model suggests that the goal might have been met in the 1980s, but since 1993 has been below 40%. The other model suggests that the 40% goal has never been met. The 2002 data shows a similar pattern as that predicted by the recent models.

Expected Effects



- From new 27-34" slot limit effective July 2006; old slot was 26-34"

Coast	Change in harvest	Change in SPR
Atlantic	-12%	+4%
Gulf	-22%	+7%

This table shows the effects of the recent size limit changes made in July 2006 as an offshoot of the clarification of how to measure total length. The minimum size was increased by 1 inch in order to prevent any deleterious effects on the snook population. The best predictions of how harvest would be expected to change under the current level of fishing mortality estimate a 12% decline in the harvest on the Atlantic coast and a 22% decline in harvest on the Gulf coast, which results in a 4% increase in SPR on the Atlantic and a 7% increase in SPR on the Gulf. These effects have already been factored into the management options presented to the Workgroup and at the workshops.

Workgroup Formed



- Group formed to review the results of the stock assessment and discuss potential management options for the future of the fishery
- Has 21 members representing various parts of the state and fishing interests
- Group has met 4 times in south Florida



A Snook Workgroup was formed to review the results of the 2006 snook stock assessment and discuss potential management options for the future of the fishery. This group has 21 members representing various parts of the state and various fishing interests. This Workgroup has met 4 times in south Florida from July 2006 through January 2007. These meetings have been moderated by a professional facilitator.

Workgroup Recommendations



- Maintain management goal at 40% SPR
- Therefore must raise the SPR percentage on both coasts, especially in light of increasing human population and habitat loss, which will continue to erode SPR
- Chose 3 options for the Atlantic and 2 for the Gulf
- Options chosen based on:
 - 1) Trying to keep open months the same
 - 2) Decrease bag limit on Atlantic
 - 3) Tighten slot



After some very lively discussions, the Workgroup has made recommendations to staff. They voted to keep the management goal for snook at 40% SPR. They then looked at ways to raise the current SPR percentages on both coasts, especially in light of the increasing human population and habitat loss. The potential growth in the human population of Florida and the loss of habitat is not factored into the stock assessment, but must be taken into account when trying to determine management recommendations because they will have a negative effect on SPR. The Workgroup chose 3 management options for the Atlantic coast and 2 options for the Gulf coast. These options were chosen based on 3 factors. First, they wanted to try to keep the open months for the fishery the same. Second, they recommended decreasing the bag limit to 1 fish on the Atlantic coast to gain a little more in SPR percentage, and finally they recommended tightening the slot limit. These decisions were made primarily by consensus, but if consensus could not be achieved, then a vote was taken. Sixty percent of the voting members present at a meeting were required to pass an item.

Gulf Management Options

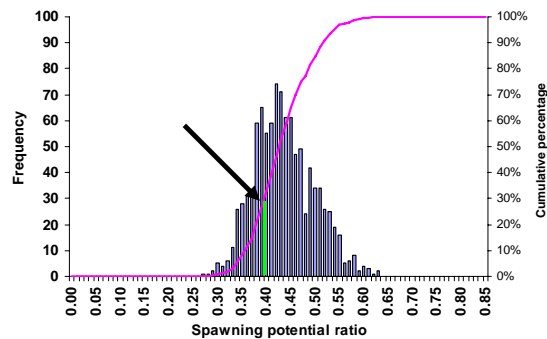


Option	Coast	Slot width (in)	Bag limit per person	Months open	Median SPR	SPR outcomes exceeding 40%
40 c	Gulf	28-33	1	F,M,A,S,O, N,D/2	39%	450
40 f	Gulf	28-33	1	M,A,S,O,N	44%	728

Current regs:

- SPR - 26%
- Outcomes > 40% = 20

Option 40f
Gulf
28-33"
Bag=1

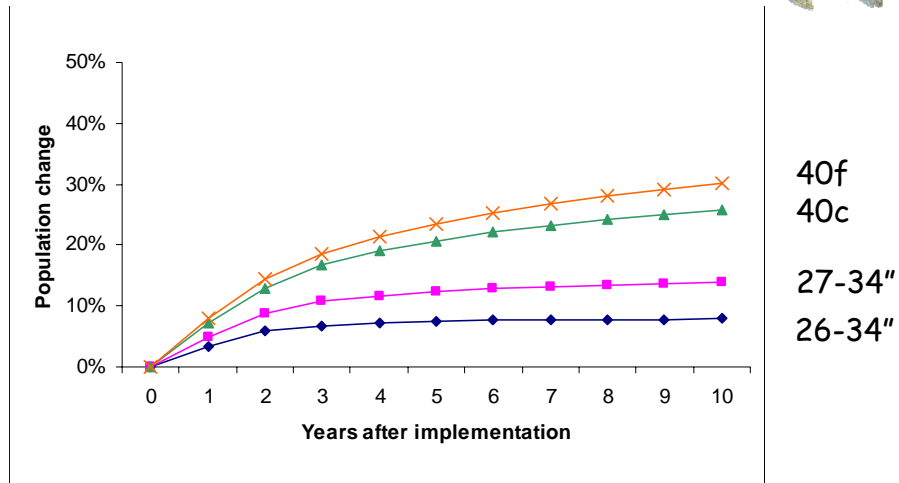


These are the two management options chosen by the Workgroup for the Gulf coast, 40c and 40f. The “median SPR” is the SPR percentage that would likely result from the management option over a 10-year recovery time frame. The “SPR outcomes exceeding 40%” column shows the number of model runs out of 1,000 that resulted in a SPR that met or exceeded 40%. Ideally this number should be greater than 500, meaning that there is a 50% chance of achieving 40% SPR or better over a 10-year time period. For example, option 40f has 728 outcomes greater than 40%, which means this option has a high chance of success.

The figure above graphically depicts the model outcomes for option 40f. If you examine the green line at 40%, you can see that most of the bars are greater than 40%, meaning that most of the model outcomes were greater than 40% SPR and thus, this option is predicted to have a high success rate if chosen. Where the pink and green line meet shows us that there is only a 30% chance of achieving less than 40% and a 70% chance of achieving an SPR greater than 40%.

The 40c option only had 450 model outcomes greater than 40%, so the chance of achieving 40% with this option is much lower than 40f. The model obtained 40% less than half the time. Thus, 40f, the most restrictive option, has a favorable chance of exceeding 40% SPR.

Gulf Options Recovery



This graph shows the snook population change predicted by modeling the Gulf management options during the time period the stock is recovering. The model runs were based on a 10-year recovery time frame that is shown along the x-axis. The population change on the y-axis is the percent change above the current snook population size that would result from the different regulations and options. Thus, "0 years" on the x-axis represents the current size of the snook population. If we look at the pink line (squares), which predicts the population change under the current slot, we can see that the stock size will increase initially, then level off over the 10 years. This line is higher than the blue line (diamonds) that represents the expected change under the old slot limit of 26-34". Thus, the difference between the pink line and the blue line is the snook population increase from the recent minimum size increase in July 2006. Now, if we look at the 2 options chosen by the Workgroup, 40c and 40f, we can see that both will allow the snook stock size to increase over the 10-year time period above and beyond the stock size that would result if we kept the current regulations. We note, however, that these models do not take into account increasing human population and snook habitat loss into account.

Atlantic Management Options

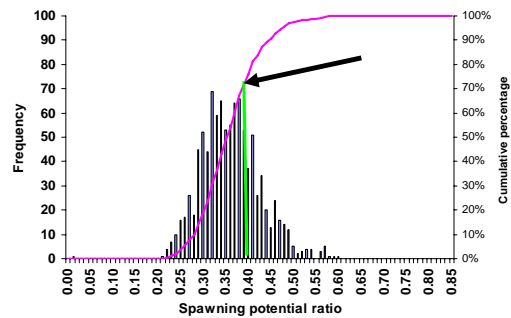


Option	Coast	Slot width (in)	Bag limit per person	Months open	Median SPR	SPR outcomes exceeding 40%
35b	Atlantic	28-32	1	F,M,A,M,S ,O,N,D/2	43%	723
40b	Atlantic	28-33	1	F,M,A,M,S ,O,N,D/2	36%	277
40h	Atlantic	28-33	1	M,A,M,S, O,N	39%	450

Current regs:

- SPR - 22%
- Outcomes > 40% = 0

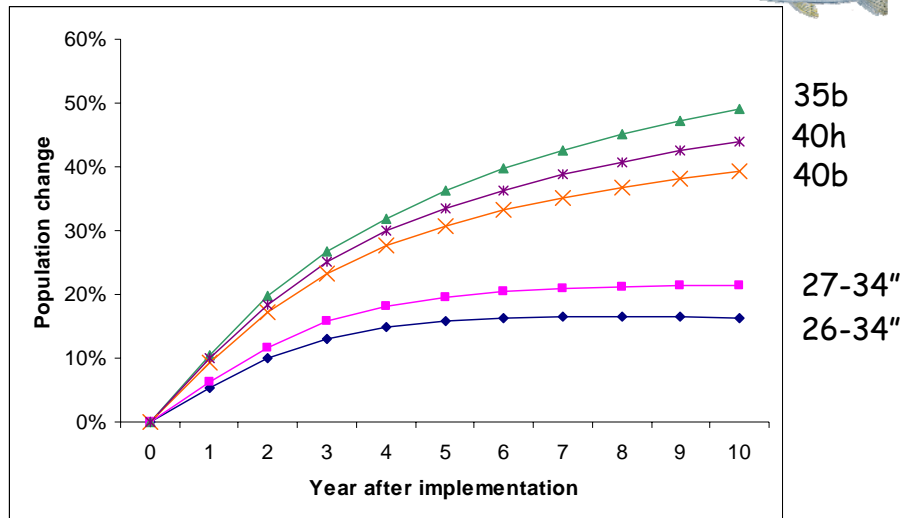
Option 40b
Atlantic
28-33"
Bag=1



These are the three management options chosen by the Workgroup for the Atlantic coast, 35b, 40b, and 40h. The “median SPR” is the SPR percentage that would likely result from the management option over a 10-year recovery time frame. The “SPR outcomes exceeding 40%” column shows the number of model runs out of 1000 that resulted in an SPR that met or exceeded 40%. Ideally this number should be greater than 500, meaning that there is a 50% chance of achieving 40% SPR or better over a 10-year time period. For example, 35b has 723 model outcomes greater than 40%, which means this option has a high chance of success.

The figure above graphically depicts the model outcome for option 40b. If you examine the green line at 40%, you can see that most of the bars are less than 40%, meaning that most of the model outcomes were less than 40% SPR and thus, this option is predicted to have a low success rate if chosen. Where the pink and green line meet shows us that there is a 70% chance of achieving less than 40% and a 30% chance of achieving an SPR greater than 40%. Based on the model options, 35b has the most favorable chance of exceeding 40% SPR.

Atlantic Options Recovery



This graph shows the population change predicted by modeling the Atlantic management options during the time period the stock is recovering. The model runs were based on a 10-year recovery time frame that is shown along the x-axis. The population change on the y-axis is the percent change above the current snook population size, that would result from the different regulations and options. Thus, "0 years" on the x-axis represents the current size of the snook population. If we look at the pink line (square), which predicts the population change for the current slot we can see that the stock size will increase initially then level off and then begin to drop in about 8 years. This line is higher than the blue line (diamonds) that represents the expected change under the old slot limit of 26-34". Thus, the difference between the pink line and the blue line is the increase to the snook population from the recent minimum size increase in July 2006. Now, if we look at the 3 options chosen by the Workgroup, 35b, 40h and 40b, we expect that all three will allow the snook population to increase over the 10-year time period, above and beyond the current regulations (pink line – squares). The percent increase is dependent upon the restrictiveness of the option. The 35b option will allow the stock to increase the most, but it is also the most restrictive option.

Other Workgroup Recommendations

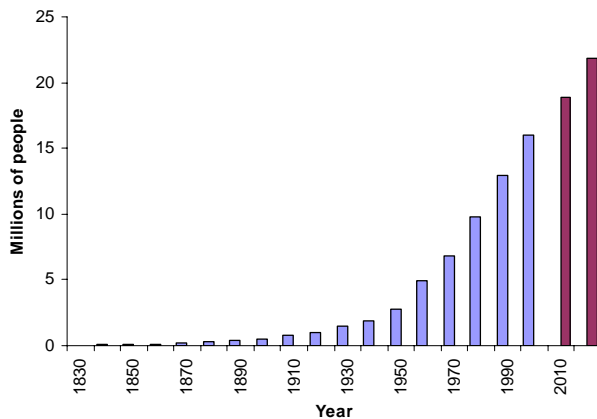


- Have FWC work with other agencies to preserve habitat
- Raise snook stamp fee to a minimum of \$10
- Law enforcement concerns
- FWC should go to Legislature and request that shoreline exemption be eliminated
- Evaluate the viability of stock enhancement programs including cost effectiveness
- More research needed on release mortality
- Tips on handling and release should be included in all saltwater FWC publications



The most important issue for the Workgroup was the protection of snook habitat. The Workgroup made a strong statement that the FWC must be an integral part of the process in the protection and enhancement of the most essential snook habitats. They felt this recommendation was needed to help achieve the management goals. They also recommended raising the snook stamp to a minimum of \$10, with the additional revenue going 50% to snook law enforcement and 50% to snook research. However, this cannot be done by the FWC, it must go through the Legislature as it involves a fee increase. The Workgroup also made recommendations that relate to law enforcement, such as implementing sting operations to target areas with high snook violations. They also wanted the FWC to hire more officers and increase officer retention. The Workgroup also wanted the FWC to go to the Legislature and request that the shoreline exemption for saltwater fishing licenses be eliminated. The Workgroup also recommended that the viability of stock enhancement programs be evaluated, including their cost effectiveness for the State. The Workgroup felt that more research was needed on snook release mortality. The Workgroup also felt that catch and release education for snook anglers is imperative, and recommended that tips on proper handling and release techniques be included in all saltwater FWC publications.

Florida Population Growth



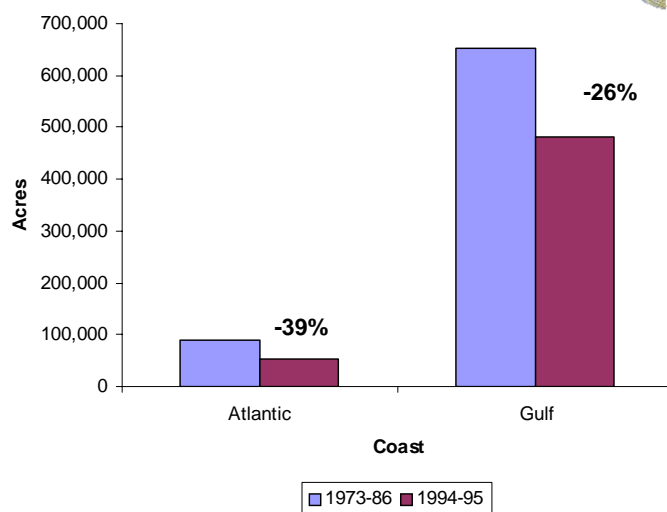
Demographic Estimating Conference Database

2000 ~ 16 million
2010 ~ 18.9 million
2020 ~ 21.8 million



One of the major concerns for the fishery is the growth in the human population, which not only potentially increases the exploitation rate for snook but also alters the condition of their habitat, further decreasing the size of the snook population as well. Florida's population numbers from 1830 to 2000 are from the U.S. Census Bureau. The 2010 and 2020 estimates for population size are from the Florida Legislature's Office of Economic and Demographic Research. The graph shows that in 2000 there were about 16 million people in Florida. It is projected that in 2010 the population will likely be around 19 million and in 2020 around 21 million people. Human population is not factored into the snook stock assessment, but must be considered when choosing management options for snook.

Mangrove Loss



Estimated acreage of mangroves from composite images by coast for two periods: 1973-86 and 1994-95

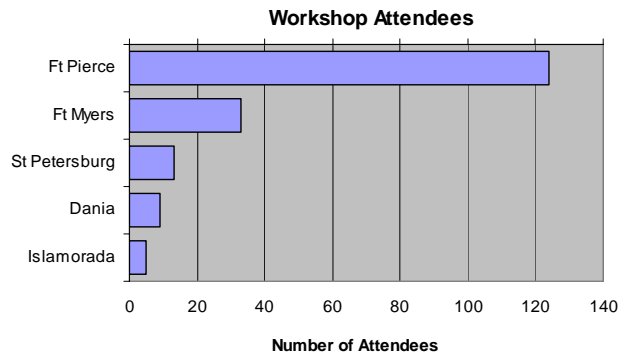
Habitat loss is of particular concern for the snook fishery, since mangroves are important habitats for juvenile and young adult snook. This graph shows the loss of mangrove acreage on Florida's Atlantic and Gulf coasts between 1973-86 (blue) and 1994-95 (magenta). The Atlantic coast has less mangrove habitat than the Gulf coast and it is losing it at a faster rate. The loss for the Atlantic is 39% between the two time periods and 26% for the Gulf.

Two major concerns for the snook fishery are the increasing human population and the loss of habitat. These items cannot be factored into the assessment directly, but must be taken into account when trying to choose a management option for the future of the fishery.

Public Workshops

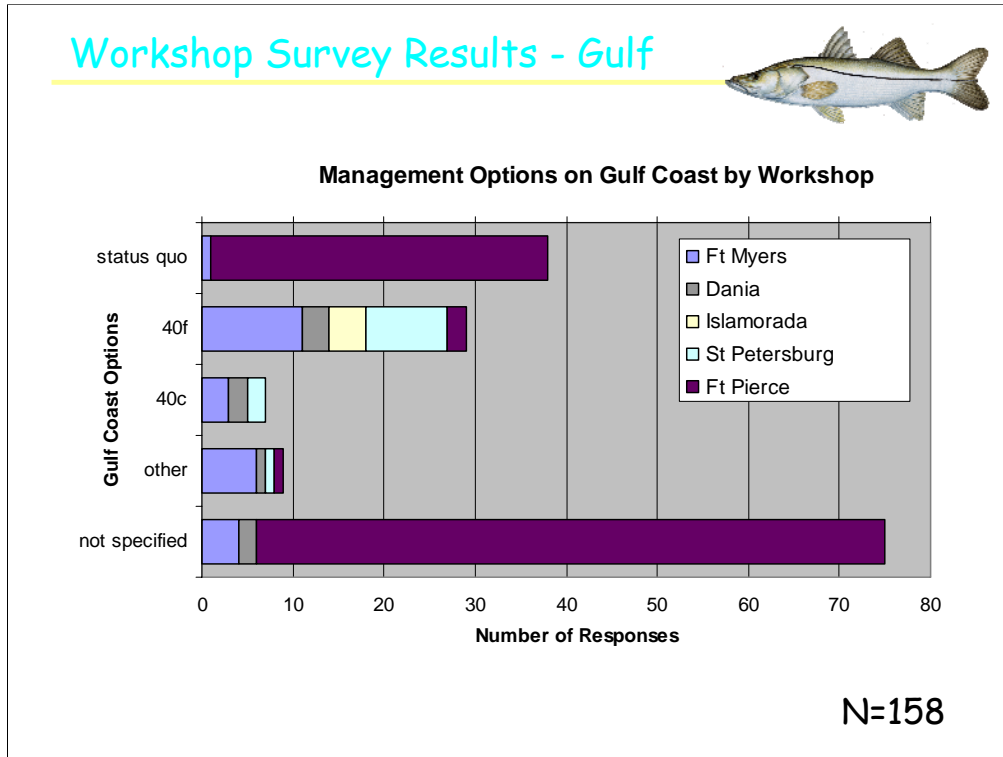


- 5 workshops in January 2007
- Locations: Ft. Myers, St. Petersburg, Ft. Pierce, Dania, and Islamorada
- Total public attendees: 184
- Oral public testimony: 67
- Completed snook survey: 158



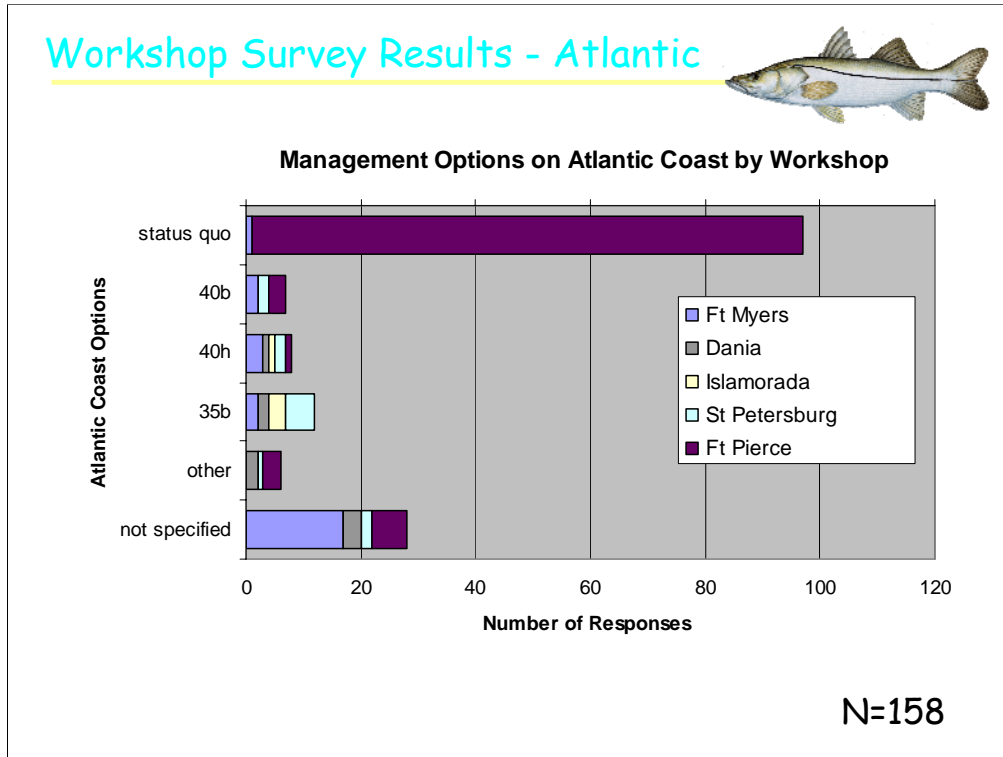
There were five public workshops held from January 22 – January 26, 2007. These workshops were held in Ft. Myers, St. Petersburg, Ft. Pierce, Dania, and Islamorada. There were 184 total attendees at the workshops (which included some Snook Workgroup members). Sixty-seven of the workshop attendees gave oral public testimony and 158 of the workshop attendees filled out our written snook survey (which is also available online). Of the 184 workshop attendees, there were 124 people present in Ft. Pierce, 33 present in Ft. Myers, 13 in St. Petersburg, 9 present in Dania, and 5 present in Islamorada.

Workshop Survey Results - Gulf



This graph summarizes the management options for the Gulf coast selected in the snook survey completed at the workshops. The survey respondents from the Ft. Pierce workshop mainly favored no changes to the Gulf coast regulations or did not specify an option. The management option that received the most support (18%) at the workshops was 40f, which would change the slot limit to 28-33 inches, leave the bag limit at one fish, and maintain the current closed seasons. The 40c option, which would change the slot limit to 28-33 inches and change the winter closed season to all of December through February while maintaining the one fish bag limit, received support from 4% of the survey respondents. Several other options were 'write-ins' (6%), with the majority of those recommending longer closed seasons or a catch-and-release fishery only either for a period of time or permanently. Among the Gulf coast workshops (St. Petersburg, Ft. Myers, and Islamorada), 62% of the respondents (that selected or wrote in an option) favored option 40f.

Workshop Survey Results - Atlantic

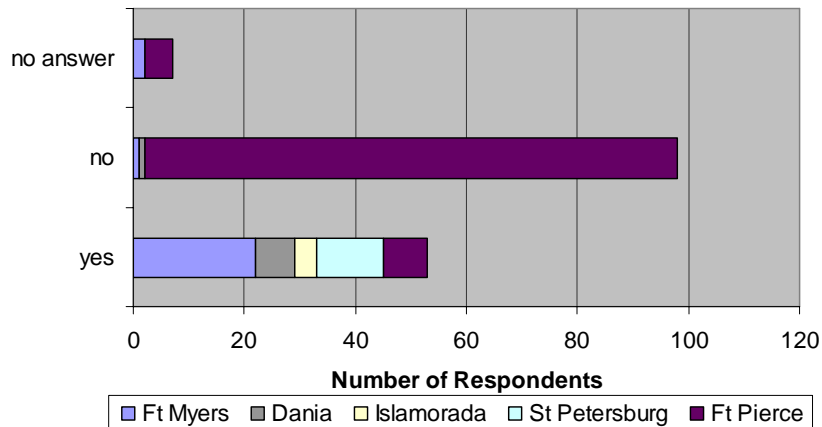


This graph summarizes the management options for the Atlantic coast selected in the snook survey completed at the workshops. The selected options are in descending order from least restrictive to most restrictive. 61% of the survey respondents favored maintaining status quo (no change) for the Atlantic coast snook regulations. This option was overwhelmingly supported by the Ft. Pierce workshop attendees. The management option that received most support (8%) was option 35b, which changes the slot limit to 28-32 inches, decrease the bag limit to one fish and allow fishing in May.

Workshop Survey Results - Atlantic



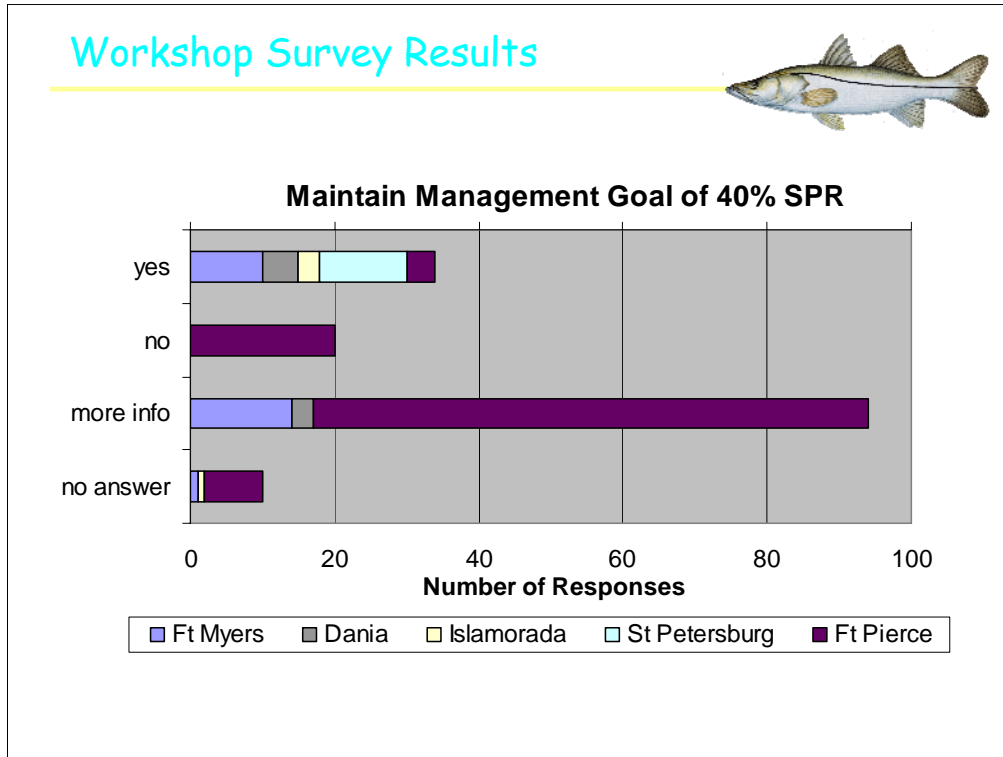
Decrease to One-Fish Bag Limit on Atlantic Coast?



N=158

This graph summarizes the question from the snook survey completed at the workshop that asked attendees whether they thought the bag limit should be decreased to one fish on the Atlantic coast. Nearly two thirds (62%) of the workshop attendees did not support a decrease in the Atlantic coast bag limit; however, all but two (or 98%) came from the Ft. Pierce workshop. Approximately one third (34%) of the workshop attendees favored a decrease to a one-fish bag limit on the Atlantic coast though much of that support (72%) came from attendees of workshops on the Gulf coast or Florida Keys. However, all but one person attending the Dania workshop and eight attendees at the Ft. Pierce workshops supported the bag limit decrease.

Workshop Survey Results



Survey respondents were asked whether or not they favored maintaining the snook management goal at 40% SPR. Even though the 40% SPR management goal was discussed in the presentation by staff at the workshops, there appears to be much confusion as most respondents said they need more information on this topic. Most of the respondents that selected the 'need more information' option attended the Ft. Pierce workshop though most people attending the Ft. Myers workshop also needed more information. Approximately 22% of the respondents favored maintaining the 40% SPR management goal while 13% of the respondents did not favor maintaining the management goal (all from Ft. Pierce).

Timeline



This slide shows a timeline for the deliberations on the proposed snook rule changes. The Snook Workgroup has met four times. This group made recommendations to staff for management changes. These suggested changes were taken out to public workshop in late January. We are now presenting the Commission an update on the recommended changes and the public comments thus far. Following Commission comment, staff will return to the Workgroup for their final comments, and then come to the April Commission meeting with a draft rule. Staff would like to then hold a Final Public Hearing at the June Commission meeting. This schedule would allow new rules for snook to become effective in July 2007. This would also allow for two months of education of this rule change prior to the September season opening.

Staff Recommendation



- Continue to gather public comment (online survey, Workgroup, etc.)
- Hold data workshop in Ft. Pierce area
- Staff believes reductions in harvest are necessary to continue to sustain and improve the snook fishery
- Return with draft rule at the April Commission meeting and proceed with a Final Public Hearing at the June Commission meeting
- New snook rules could be effective July 2007



Staff will continue to gather public comment on proposed rule changes between now and the April Commission meeting, via online surveys, Workgroup meetings, etc. Staff would also like to hold a data workshop in the Ft. Pierce area to explain snook data collection and study results. Staff believes that some form of reductions in harvest are necessary to continue to sustain and improve the snook fishery. Our belief is consistent with much of the testimony and public input we have received to date. Staff recommends proceeding with a draft rule at the April Commission meeting and then holding a Final Public Hearing in June. This schedule would allow new snook rules to take effect in July 2007.