**Fisheries Management Issue: Pro-active Management of Harvest Allocation in the Florida Spiny Lobster Fishery: Part II**

**A report provided to the a*d hoc* Spiny Lobster Advisory Board by the Florida Fish and Wildlife Conservation Commission Staff**

**May 23, 2006**

*Introduction*

At the third meeting of the *ad hoc* Spiny Lobster Advisory Board (LAB) in April Fish & Wildlife Conservation Commission Staff (FWC) presented to the Board the concept of managing the allocation of lobster landings between the sectors of the fishery. A lengthy discussion pursued, and some members of the Board remained unclear as to the benefits to the fishery of pro-actively managing landings allocations, and those supportive of the concept remained unsure as how to implement allocation as part of a management plan. Ultimately, the Board voted in favor (4 Acceptable, 8 Acceptable w/ minor reservations, 1 Unacceptable w/ major reservations, 2 Unacceptable) of the concept, but asked that staff present varying scenarios under which such a management strategy may be employed. With that in mind, we present some additional information regarding the importance of proactively setting and managing landings allocations in this fishery. We have also provided several hypothetical circumstances to provide the Board with a sense of what type of allocation shifts could occur and what management actions could be used to address such shifts.

*Why manage allocation?*

In the previous report on landings allocations, we detailed how landings had shifted during the late 1990s away from the commercial dive trap fishery towards the commercial and recreational dive sectors. This occurred under a management environment in which effort by trappers was controlled *via* the Trap Certificate Program (LTC), while no new effort control was implemented on the commercial dive fishery or the recreational fishery. By the time this shift was recognized as a problem by fishery managers, the proportion of landings by the commercial dive fishery had more than tripled, and that of the recreational fishery had increased. This was an exceedingly significant management issue because the allocation shift negatively impacted the sector whose management had changed – the trap fishery.

Ultimately, several regulations were implemented on the dive fisheries. Since these regulations were implemented, allocations have shifted back towards the trap fishery, though not to levels of the early 1990s when the LTC was implemented. Had there been consideration of the possible ramifications of managing one sector without providing the protection of setting some benchmark allocations, the management response could have occurred much sooner and the fishery issues would have been less protracted.

Why does increasing harvest from one sector have the effect of reducing the harvest of another sector? It is because the total lobster harvest each year is largely dependent upon

the number of lobster available to be harvested that year and not by the amount of fishing effort expended to catch those lobsters, except in those unusual circumstances where effort is curtailed by extraordinary events such as hurricanes. Across the range of effort in the fishery since approximately 1975, landings and effort have not been related. Good fishing years have occurred with high and low effort, as have poor fishing years. For example, the best year on record for the commercial fishery was 1979 when nearly 7.9 million pounds were landed using ~600,000 traps. In contrast, 1983 was a poor fishing season with a harvest of 4.5 million pounds, again from ~600,000 traps. Similar observations can be made in recent years when landings estimates for all fishing groups were available. During 1999, the fishery harvested 10.1 million pounds from 534,000 traps, 4377 commercial fishing dive days, and 555,000 recreational fishing days. In contrast, the 2001 harvest of 4.3 million pounds was caught from the same number of traps, 4538 commercial dive days, and 366,000 recreational fishing days. Furthermore, the size-structure of the lobsters landed by the fishery has remained constant since 1987 as has the average size. The average size has consistently been 3 ¼ inch CL, just barely above the minimum legal size. This indicates that the fishery is heavily reliant on a single year class of lobsters each season – those that have just grown to legal size. Fluctuations in harvest are related to fluctuations in the numbers of new recruits to the fishery and not the number of traps, diver-days or recreational fishing days. Put another way, the size of the 'lobster pie' each year is determined by the number of lobsters attaining legal size. A change in fishing effort by any one sector simply alters that sector's piece of the pie.

Ultimately, by setting a baseline allocation *(i.e.,* determining each sectors share of the lobster pie), and deciding what constitutes the change from that baseline that merits management attention, each sector gains a sustainable long-term stake in the fishery and is protected from shifts in the pie caused by either behavioral changes by fishers in the other sector's or by shifts caused by the unintentional effects of management. If the allocation is pro-actively managed, management actions could be more easily reversible. For example, the number of traps once reduced could be increased, or diver bag limits once reduced could be increased. Below we provide a series of hypothetical allocation scenarios to illustrate how the process may work.

*The Process*

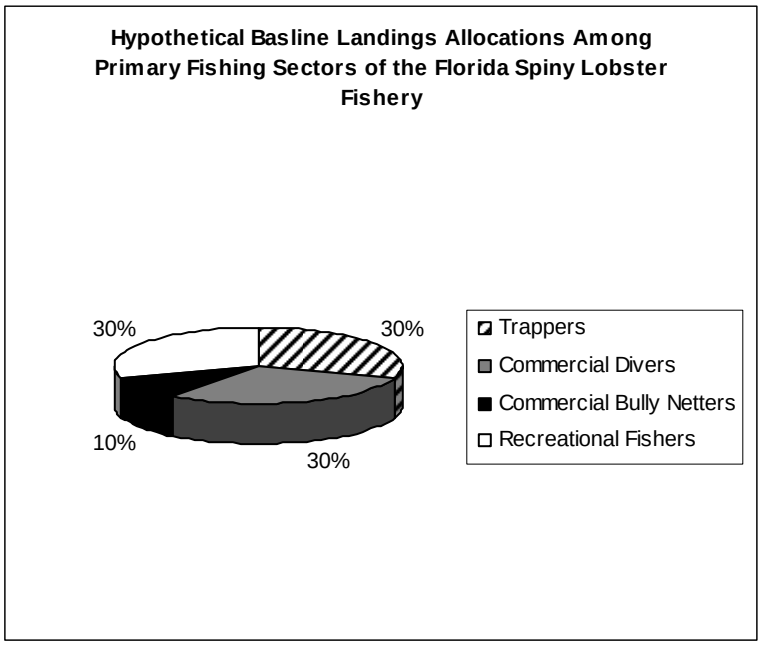
In this section, we briefly detail how staff envisions allocation management would work. We believe that the process would occur in the following steps

- A baseline allocation is defined by the Board (staff recommends % of "lobster landings pie" for this).
- The Board defines a shift (magnitude and duration) from the baseline allocation that if or when it occurs it requires the Commission to begin immediately a process to determine the best management response.
- Staff continuously monitors the fishery using same or improved approaches used today.
- Staff provides an allocation summary report annually at end of each fishing season.

- When the shifts meet the suggested criteria established by the Board, the management process begins and new regulations designed to restore the baseline condition go into place after the end of the next fishing season. This could be accomplished by a future Board process or some other process.
- Further monitoring occurs; these regulations can be adjusted or reversed as necessary.

*Hypothetical Allocation Management Scenarios*

Now, we provide several hypothetical scenarios where landings allocations have shifted. We note the baseline allocations and the allocation shifts used in these scenarios do not resemble those of either the present or the past fishery. We have purposely chosen these values to be vastly different because they are intended to simply demonstrate how allocation shifts may be managed. We have arbitrarily set the baseline allocations as follows (all scenarios will use the same starting point):

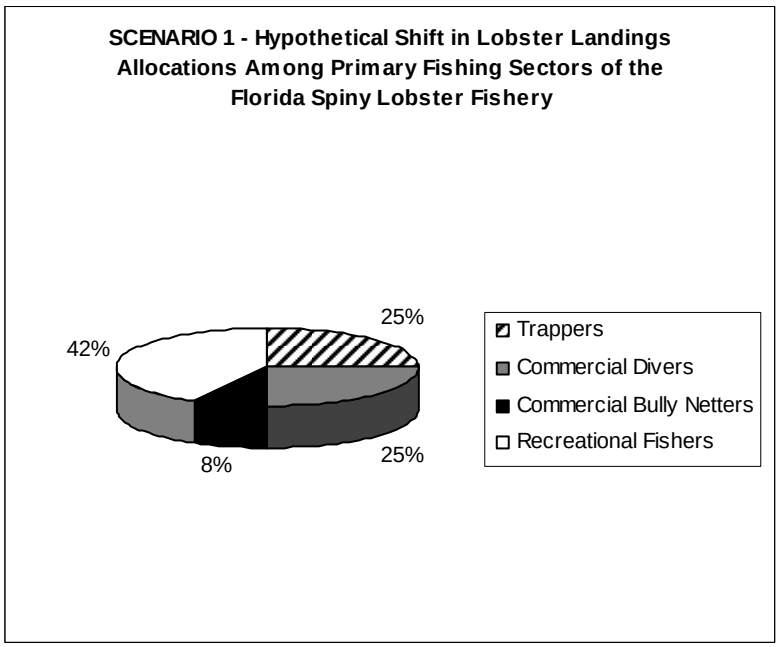



We assume that a 10% shift in one sector's allocation for five consecutive years constitutes a change that needs to be managed.

Finally, we provide a few examples of the type of regulatory response that could occur following each allocation shift. These are not an exhaustive list of the available options for each scenario.

**Scenario 1**

Fishing effort in the recreational lobster fishery increases considerably. This could either occur by increased sales of the recreational lobster fishing permits, or due to people that have been buying the permit but not fishing begin to fish for lobsters. Either occurrence will result in many more people fishing. Consequently, their allocation increases to 42% of the total landings for five years, and the allocation of all other sectors decreases.

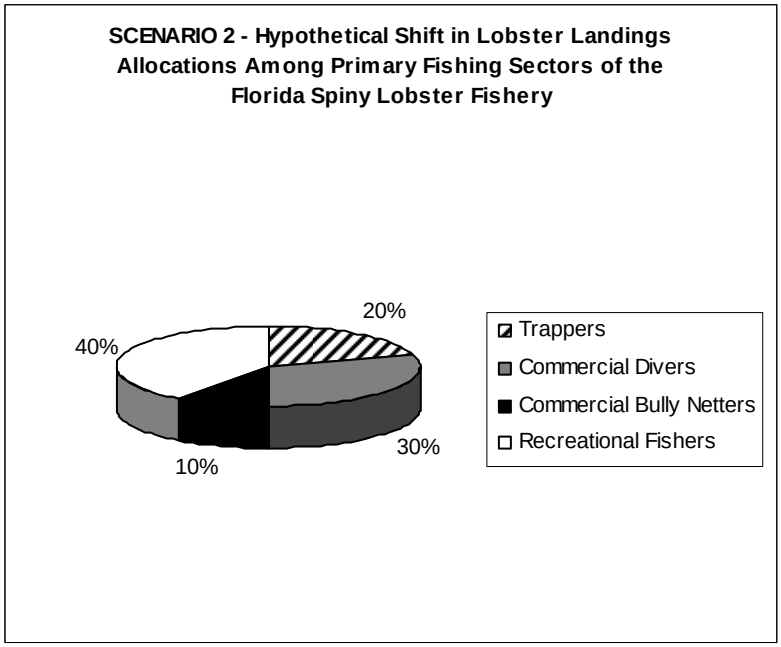



Possible management solutions:

- Limit recreational licenses
- Reduce daily recreational bag limits
- Shorten the recreational season only
- Limit recreational fishing to weekends

**Scenario 2**

FWRI staff has determined that the amount of recreational fishing following Labor Day has increased, and the allocation of lobster landings shifts toward the recreational fishery and has been 40% of total landings and those of the trap fishery decrease to 30% for five consecutive years.

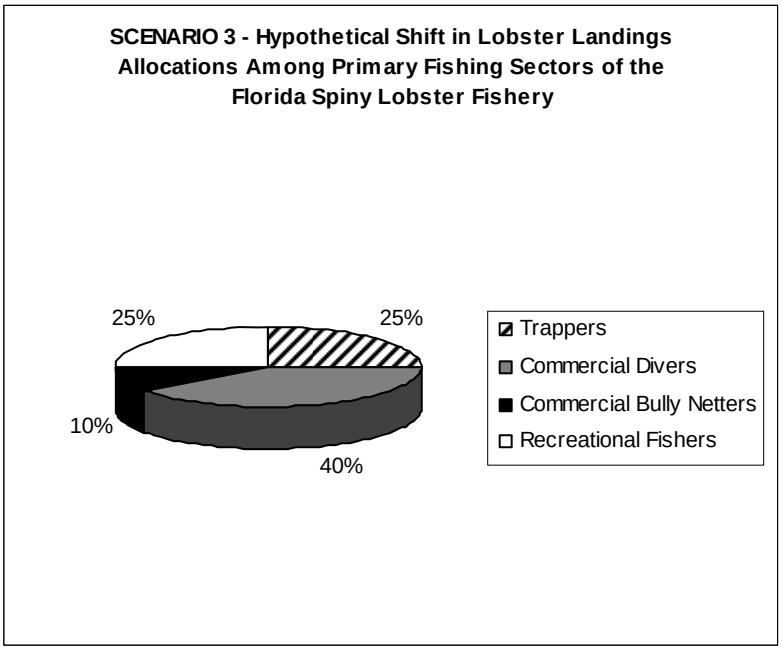



Possible Solutions:

- End recreational season earlier
- Limit recreational licenses sales
- Reduce recreational bag limits

**Scenario 3**

A higher proportion of commercial divers begin reaching the daily trip limit. Consequently, the allocation of landings shifts towards the commercial dive fishery and remains 40% while those of the recreational and the trap fisheries decrease.

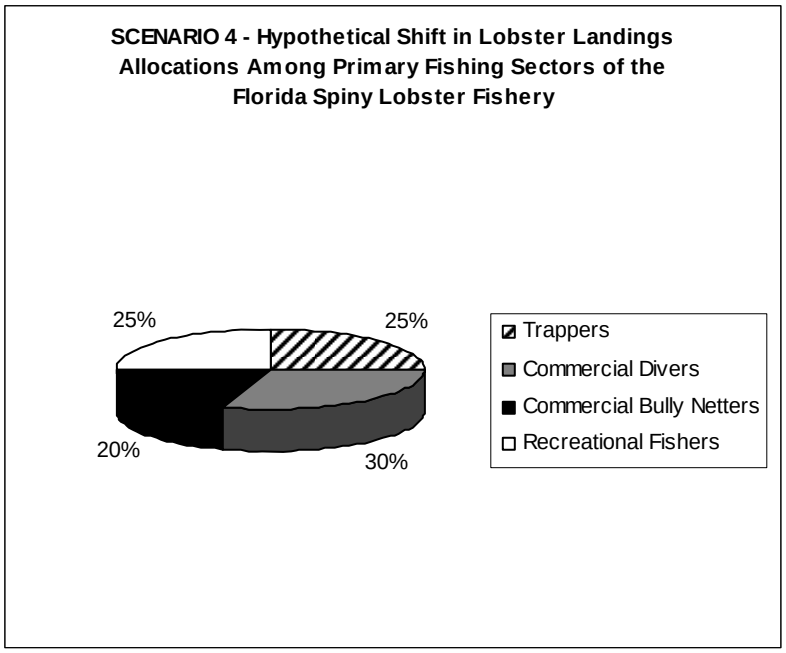



Possible solutions

- Reduce daily trip limit on commercial lobster divers
- Reduce number of commercial dive licenses

**Scenario 4**

Bully net landings increase dramatically and are 20% of total landings for five consecutive years; survey shows more people are using bully nets than in the past.

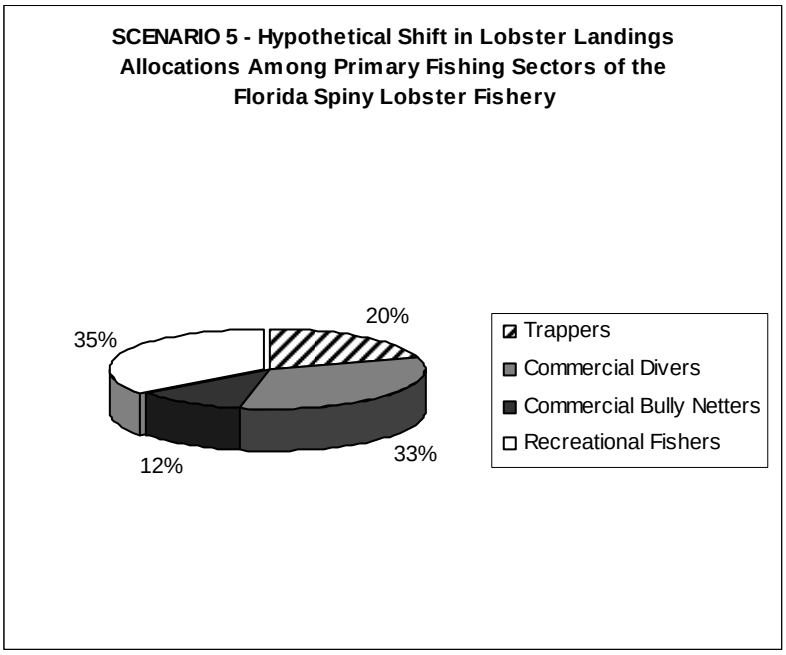



Possible solutions:

- Bully net endorsement license
- Trip limits for bully netters.

**Scenario 5**

Number of lobster traps decreases and the landings allocation shifts away from the trap fishery towards all of the other sectors.

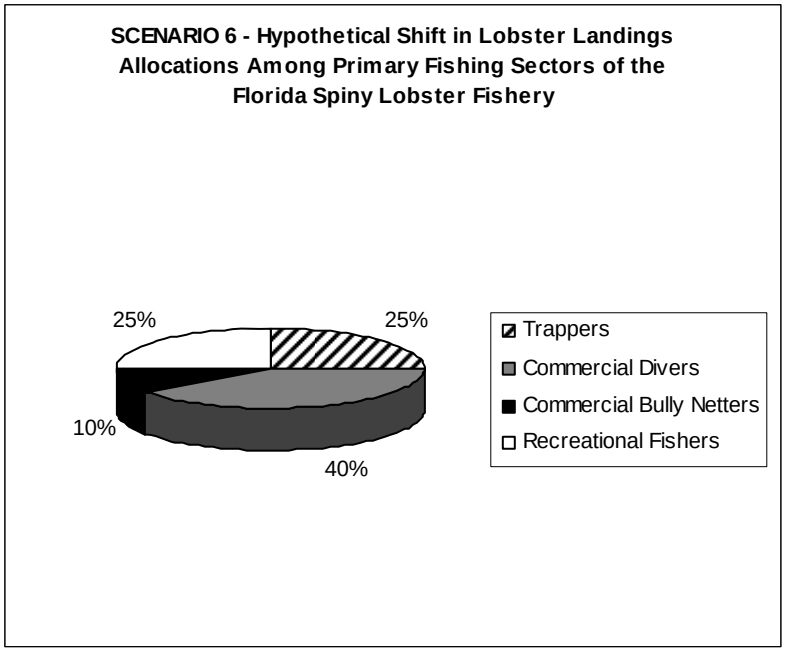



Possible solution:

- Increase number of traps to the commercial trap sector

**Scenario 6**

Fishing effort in the commercial dive fishery increases considerably due to people that have had a Commercial Dive Endorsement but had not previously fished enter the fishery or a transferable commercial dive license is created and effort increases as existing license holders sell to new entrants who fish more than the seller. Consequently, the commercial dive sector allocation increases, while that of the trap and recreational fishery decrease.




Possible solution:

- Reduce daily trip limit
- Reduce the number of commercial dive licenses
- FWC buys out license holders if a transferable program is in place

*Discussion Points*

- By setting a baseline allocation, pro-active allocation management protects each fishing sector's share of the fishery.
- Because each sector's share is protected by setting a baseline allocation, pro-active management provides a secure benchmark for the Board to consider novel solutions to environmental and other management issues that we face today. In other words, the risk of negative impacts is lower because management that causes a shift in allocation based on the criteria you establish will be required to be evaluated and can be reversed.
- Management measures made in response to allocation shifts may result in increased regulation of those sectors causing the change, or decreased regulation by sectors affected by the change.
- Management made in response to allocation shifts can also be reversible if need be.
- Because the total lobster harvest is ultimately controlled by new lobster entering the fishery, allocations should be thought of in percentages. However, they should not be confused with any type of individual quota on season landings.