

# **Plan Development Team**

## **DRAFT Meeting summary**

### **May 30, 2007**

**Attendance:** Kathy Sosebee, Tobey Curtis, April Valliere, Andy Applegate

#### **Summary:**

The PDT to analyze the rebuilding potential for winter skate, to develop an initial estimate of how much catch reduction would be needed to begin rebuilding winter skate, to discuss adaptive approaches that might address the new requirement for accountability measures, and identify the major sources of mortality so that measures to reduce catches could be developed appropriately.

The PDT incorporated new biological parameters to estimate a mean generation period for female winter skates. In general, a mean generation period is the amount of time needed for a spawning female to replace itself with another spawning female from its offspring. These calculations take into account growth, fecundity, and survival (of eggs, juveniles, and adults). From these data, the PDT calculated a mean generation period of 15 years, results that were relatively insensitive to a reasonable range of assumptions.

During 1975-1987, winter skate biomass increased an average of 17% per year, while during 1999-2005 it declined by 8% per year. Since the annual change in biomass needed to rebuild winter skate in 10 years (8%) was within this range, the PDT recommended that the Council adopt a 10 year (or less) rebuilding objective.

A population model was used to calculate the percent change in mortality needed to allow biomass to decline at the current rate, to stabilize the biomass at current levels (0%), and increase biomass by 10% per year. These results allowed the PDT to estimate the catch needed to begin rebuild winter skate relative to the 2005 catches. Since discards are over half of the total catch, some assumption about the survival of discards had to be made for this important mortality source.

The PDT recognized that gear, temperature, and depth would be important influences over the survival of discards, as well as handling procedures on fishing boats and fishing gear characteristics. While skates seem to be more robust to fishing, skates may also experience delayed mortality from predation, internal and external damage, and infections. There are very few research results estimating discard mortality for skates, however.

Considering these factors, the PDT thought that an assumed discard mortality rate of 25-50 percent was reasonable and estimated the percent change in catch to stabilize skate biomass and initiate rebuilding. Including some variation in assumptions about mortality and age at entry, the PDT estimated that a catch reduction of 0 to 5% would be needed to stabilize the winter skate biomass. A catch reduction of 40-50% from 2005 levels would be needed to initiate an average rebuilding rate of 10% per year. Because discards have declined during 1999-2005 and made up a larger amount of mortality compared to 2005, the higher discard mortality assumption results in the lower catch reduction estimate, compared with the 2005 level (which had the lowest amount of discards in the total catch).

The PDT also discussed the species identification problem, since there a substantial proportion of landings are unidentified and port agents report seeing prohibited species in the landings. Even about 1/4<sup>th</sup> of the skates on observed trips are unidentified, primarily due to the difficulty distinguishing between little and juvenile winter skates. In an analysis of the 2006 observer data, the proportion of winter skate observed in the bait/whole landings were almost the same as those in the wing fishery, despite the believe (and former observations) that the bait fishery lands mainly little skate, while the wing fishery lands mostly winter skate. It is hard to determine whether this result is due to possible mis-identification by observers, biased sampling of larger offshore vessels that are more capable of taking observers, or because the some vessels targeting winter skate are now landing them whole, using the racks to sell into the lobster bait market.

The PDT found that:

- The wing fishery is the larger component of mortality for winter skate.
- Incidental landings in fisheries that target other species should be considered to reduce catch, including small mesh fisheries that target squid, whiting, and scup.
- Annual catch limits cannot be managed by species due to the large amount of unidentified and mis-identified species in the landings.
- Some sort of adjustment mechanism should be considered as a form of accountability. This adjustment mechanism could change specification depending on the future biomass compared to the expected target amount in each year during rebuilding. Another form of accountability is to recover from previous overages by deducting the overages from a future TAC.
- Discard mortality seems to be the major issue for thorny and smooth skates. A reduction in catch is needed, but the PDT cannot estimate how much reduction is needed to initiate rebuilding of thorny or prevent smooth and little skates from becoming overfished.

The PDT prepared a memo for the advisors and Oversight Committee on these issues.