

**Scientific and Statistical Committee Meeting**  
**November 26, 2007**  
**Hilton Garden Inn, Warwick, RI**

**SSC Attendance:** Dr. Patrick Sullivan (Chair), Dr. Alexei Sharov, Dr. Victor Crecco, Dr. Brian Rothschild, Dr. Edward Gilfillan

**Others in Attendance:** Mr. Applegate, Dr. Gedamke, Mr. Pentony, Ms. Hogan, Ms. MacDonald, Mr. Genlo, Mr. Curtis, Mr. Kellogg, Ms. Spinazolla

**Question #1:** Are the science and methods the PDT used to estimate rebuilding potential reliable for setting skate catch targets?

The SSC believes that the demographic matrix approach is fundamentally sound. Vital information on the biotic and abiotic factors that affect the composition of the skate complex and its reaction to fishing pressure are not known. Nevertheless if the equilibrium assumption is satisfied, then it is possible to estimate rebuilding potential following a reduction in fishing mortality to achieve skate biomass targets. However, there is a missing temporal element that it makes it difficult to predict when rebuilding would occur unless assumptions are made that the population is in an equilibrium. Just because biomass is at a low level does not necessarily imply that growth or survival rates are at a high level.

The magnitude and trend in fishing mortality is currently unknown, making it difficult to know whether rebuilding is actually possible over a 10-20 year planning horizon. (The committee proposes a method to estimate the trend and magnitude of fishing mortality and biological reference points ( $F_{msy}$  and  $B_{msy}$ ) using stock-recruitment and surplus production methods). Under this circumstance, the stock is unlikely to significantly rebuild if  $F$  is well below the reference points.

If the  $F$  is low, stable, and well below the reference point, stock rebuilding is unlikely to occur following a further reduction in fishing mortality. When fishing mortality is high, or increasing well above the reference points, then there is leverage to achieve rebuilding through mortality reductions. It is not clear that such leverage exists for these species.

Additional observations:

- Discards are high relative to landings and significant rebuilding is unlikely without reducing discards
- An alternative method to estimate magnitude and trend in fishing mortality for the skate complex would be to use existing, basic information to compute  $F_{max}$  and  $F_{msy}$  (merge SR curve to YPR) to replace current reference points. This only can be done by species if the catch composition can be separated by species and this is not possible at the present time.

- One potential method could use a long term  $Z$  ( $F=Z-M$ ) to scale  $C/B$  exploitation trends to estimate current  $F$ , but the unknown species composition of discards adds considerable uncertainty.

**Question #2:** Is the method for choosing catch limits (ACLs) consistent with rebuilding?

If the above conditions for #1 are met, then a catch reduction that is proportional to the predicted  $F$  reduction is appropriate and will achieve stock rebuilding.

Allocations of catch limits by region and fishery add more complications to achieving rebuilding objectives for individual species unless they coincide with the distribution of that species.

**Question #3:** Is there sufficient probability that winter and thorny skates will rebuild to targets with required period

The SSC cannot answer this question with the information that has so far been provided. There should be outcome based analyses to determine whether previous reductions in catch have resulted in increases in biomass.

If the catch is held below the limits and periodically updated, then it is likely that an adaptive program would achieve rebuilding objectives.