Estimating Movement Rates of Pacific Cod (Gadus macrocephalus) in the Bering Sea and the Gulf of Alaska Using Mark-Recapture Methods

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Four data sets were considered

RACE I
- Released throughout the eastern Bering Sea between 1982 and 1990 as part of the AFSC, RACE Division summer trawl survey (Shimada and Kimura, 1994)

ADF&G
- Released in the Gulf of Alaska (mostly coastal and mostly near Kodiak Island) between 1997 and 2006 by the Alaska Department of Fish and Game (D. Urban)

FIT
- Released near Unimak Pass in 2002 and 2003 as part of AFSC Fisheries Interaction Team experiments on localized depletion of Pacific cod

RACE II
- Archival tags released near Kodiak Island and near Unimak Pass between 2001 and 2005 by the AFSC RACE Division (Nichol and Chilton, 2006)

Estimating Survival and Exploitation

Four data sets were considered

Released throughout the eastern Bering Sea between 1982 and 1990 as part of the AFSC, RACE Division summer trawl survey (Shimada and Kimura, 1994) However, none of these data sets suited the models, being too disjoint in both time and space.

Qualitative Descriptions of movement: Site Fidelity?

Distance and direction between release and recovery in the eastern Bering Sea. (FIT data only)

Number of tags recovered by release and recovery distance (all data sets)

We had intended to use these data in an expanded Brownie model (Brownie et al., 1995) to estimate movement rates of Pacific Haddock (Anguilla.what et al., 1996). However, none of these data sets met the models, being too disjoint in both time and space.

Selectivity: size specific recovery rates

Assume: Natural mortality is NOT size dependent
Tagging-induced mortality is negligible
Availability and spatial distributions are not size dependent

Standardized recovery rates by size group and recovery gear type with days-at-liberty restricted to less than one year (FIT data only). An approximation of gear selectivity.

These data cannot tell us if the cod stayed in place for most of a year or went away and came back.