



Evaluation of Mark Selective Fisheries (MSFs)

To DIT or not to DIT



How do we evaluate MSFs?

- Use DIT to monitor return rate to hatchery and test the difference between marked and unmarked component of DIT (see Joint Coho DIT Workgroup Report, 2004)

Note. A double mark system is necessary to evaluate MSFs. And it needs to be a double mark on a group of fish that can be sampled with high precision at escapement, e.g., hatchery returns sampled at 100%.



Estimating exploitation rates?

- The total difference between marked and unmarked components of a DIT provides for a total MSF exploitation rate (ER) estimate. Estimation of individual fishery ER can be done using various methods (SFEC report 2002 - TCSFEC(02)-1), but except where there is only one MSF these individual fishery ER estimates are subject to bias.



Coho MSF

- Coho MSFs in Washington have continued to be prosecuted
- Evaluation of the coho MSFs through analysis of DIT data has shown that:
 - the impacts have not been significant for individual stocks (probably due to small sample sizes. i.e., tag group size),
 - When averaged over regions and years there are significant impacts for the coastal stocks.

Evaluation for broods 95-97 by Joint Coho DIT Workgroup (in Coho DIT report 2004) and by SFEC for broods 98-01 (in prep).



Chinook MSFs

- Chinook summer MSFs in WA Areas 5 and 6 (Strait of Juan de Fuca) since 2002
 - Chinook winter MSF in WA Areas 8.1 and 8.2 since 2005
 - In 2007 expansion of summer fishery to Area 9, 11 and 13 and of winter fishery to Areas 7 and 10.
 - Columbia Spring Chinook fisheries since 2002.
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Evaluation of Chinook MSF

- For WA Puget Sound
 - Area 5 and 6 evaluation by PSC CTC shows no significant difference between marked and unmarked components of DIT (see PSC CTC report TCCHINOOK (05)-3, Appendix J)
 - As MSFs expand into other areas and time periods, PS DIT groups will be used to monitor impacts on PSC indicator stocks. There are 7 DIT indicator stocks for Puget Sound Chinook.



Evaluation of Chinook MSF

- For Columbia River spring Chinook no evaluation is possible because
 - No DIT
 - Where have DIT escapement was not sampled appropriately.
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To DIT or Not to DIT?

- Without a double mark system we cannot evaluate the impact of MSFs on indicator stocks.
 - Without a double mark system we cannot make an unbiased estimate of total MSF ER
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