

GSI and Incidental Mortality

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Types of Incidental mortality

- Release mortality
 - Sublegal fish
 - Legal-sized fish in non-retention fisheries
 - Unmarked fish in mark-selective fisheries
- Drop-off/drop-out mortality
 - Fish that escape or drop out of gear and die
 - Fish removed by predators

Accounting for release mortality

- Estimate total encounters
- Apply release mortality rates to get total mortalities
- Allocate to stock/age groups

Estimation of encounters

- Currently based on
 - Assumed rates
 - Historic rates (non-retention fisheries)
 - Expectations generated by models (mark-selective)
 - Logbooks
 - Observer data

Incidental mortality rates used for commercial Chinook fisheries

		sublegal	Legal	dropoff
CTC	Troll - AK	0.255	0.211	0.008
	Troll – BC	0.255	0.211	0.017
	Troll – OR,WA	0.220	0.185	0.025
	Net	0.9	0.9	0.0
STT	WA-CA	0.26	0.26	0.05
WDFW	Puget Sound-seine	0.45	0.33	

Incidental mortality rates used for recreational Chinook fisheries

		sublegal	Legal	dropoff
CTC	AK-CBC	0.123	0.123	0.036
	SBC-Col R	0.123	0.123	0.069
	Puget Sound	0.123	0.123	0.145
STT	WA-N CA	0.14	0.14	0.05
	Central CA	avg	avg	0.05
WDFW	Puget Sound	0.20	0.10	0.05

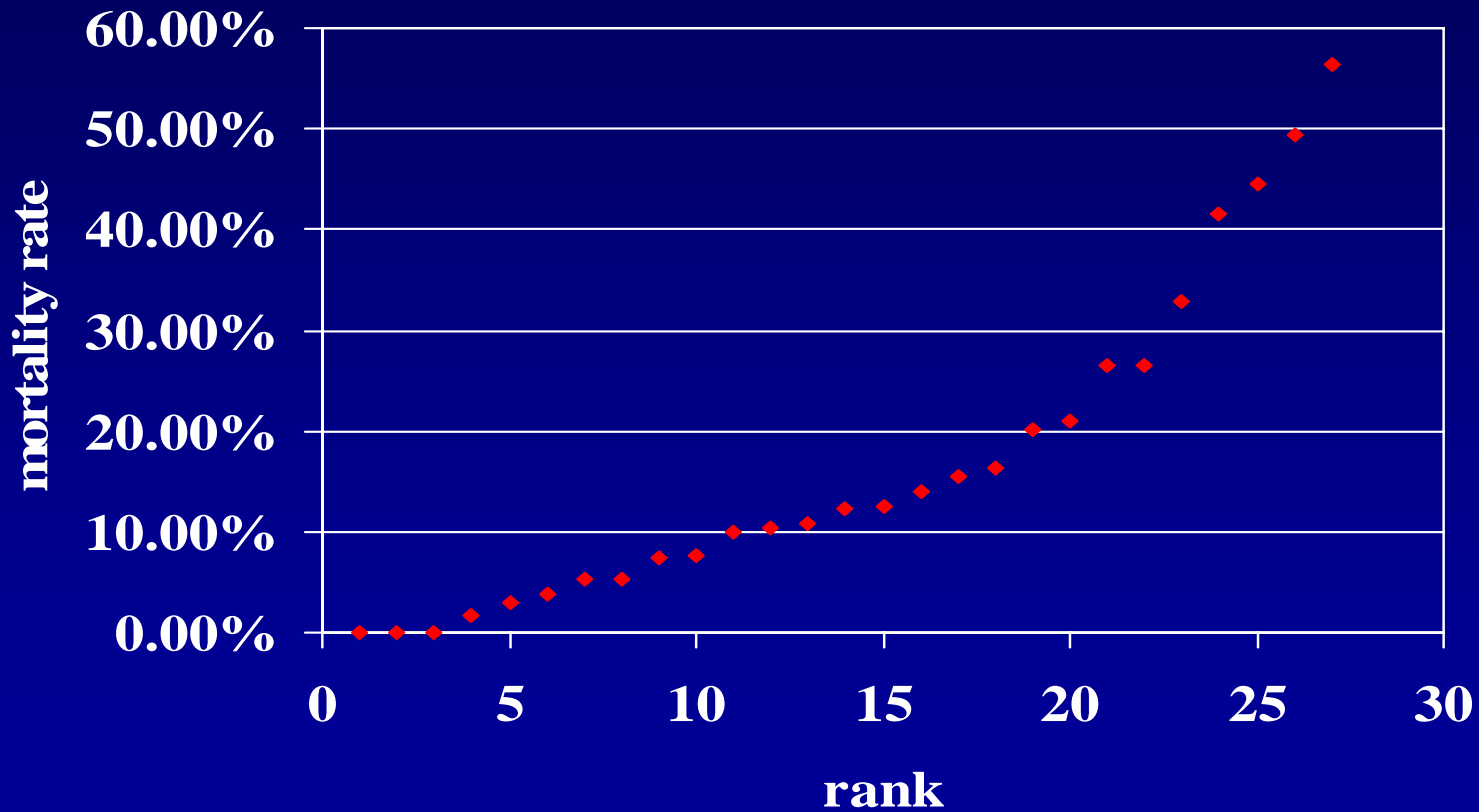
Incidental mortality rates used for commercial coho fisheries

		sublegal	legal	dropoff
STT	WA-CA troll	0.26	0.26	0.05
DFO	BC troll	0.26	0.26	
	BC gillnet	0.60	0.60	
	BC seine	0.25	0.25	

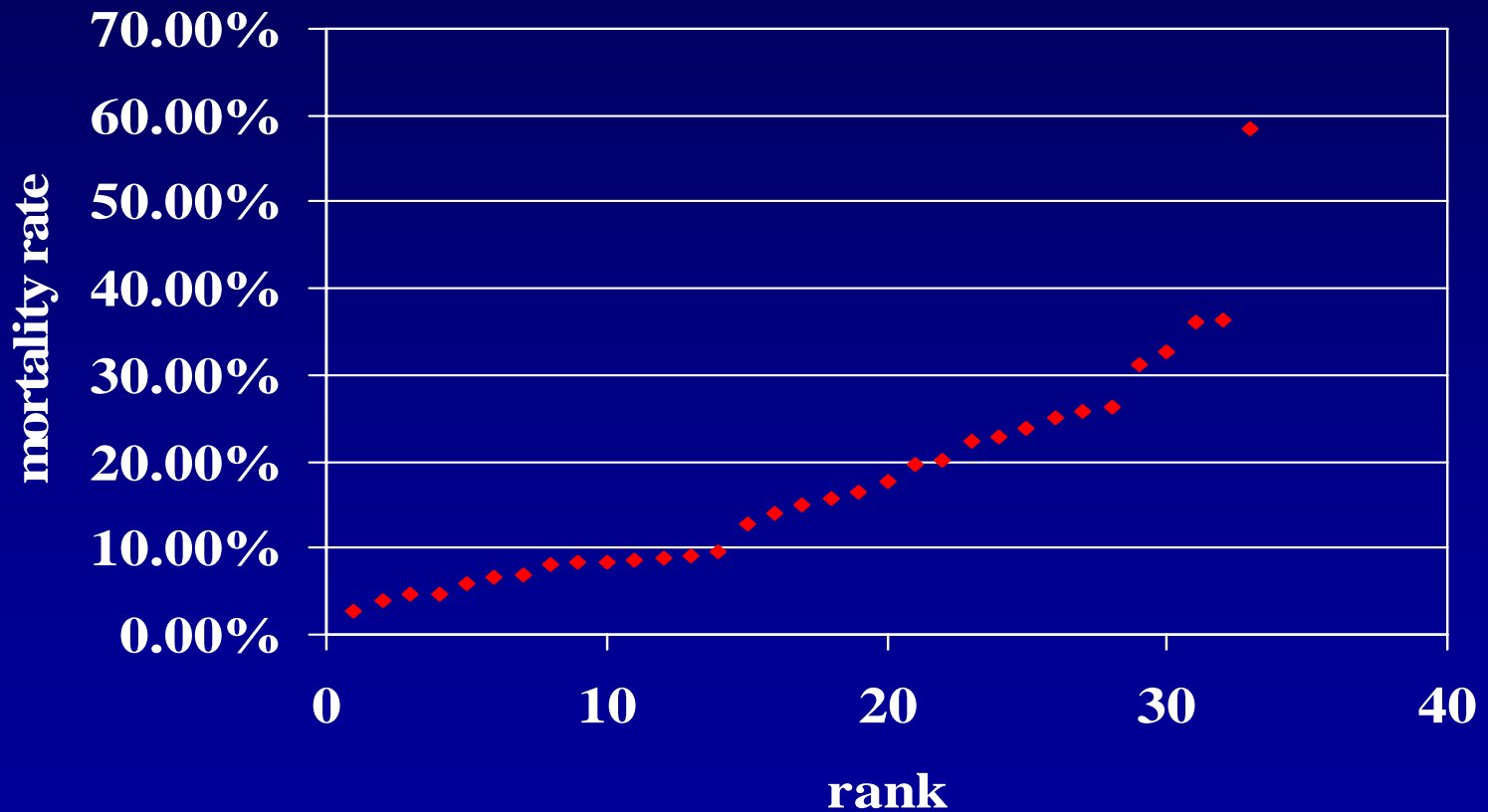
Incidental mortality rates used for recreational coho fisheries

		sublegal	legal	dropoff
STT	WA-CA	0.14	0.14	0.05
DFO	BC	0.10	0.10	
WDFW	Puget Sound	0.07	0.07	0.05

Confinement estimates of Chinook marine recreational hooking mortality



Confinement estimates of coho marine recreational hooking mortality



Allocation to stock/age groups

- Currently allocation is done by the harvest accounting models based on model assumptions
 - CTC Model allocates proportional to calculated abundance of sublegal fish in stocks that contribute to the fishery
 - CNR mortalities allocated on the basis of what the model expects stock composition to be
 - Mark-selective mortalities not currently modeled for Chinook

Considerations for using GSI to allocate of incidental mortalities

- Benefits
 - Replaces assumptions with data
 - Allows validation of model assumptions
 - Sampling would facilitate direct estimation of encounters
- Drawbacks
 - Lack of age composition without auxiliary data
 - Stock resolution
- Sampling
 - Design
 - Fishermen vs observers
 - SEAK 2006 – 1016 fishing days, 395 trips (logbook) vs 7 trips (observed)