

Introduction: Salmon and Fish Consumption Rates

Taking into Account Fish Habitat in
Developing Fish Consumption Rates for Water
Quality Standards

Goals of this Introductory Presentation

Goals-

- Understanding of EPA's policy on salmon and "marine" fish in fish consumption rates;
- Understanding of why this is relevant to OR's project;
- Start dialogue about what ODEQ should consider in reviewing this issue



Background: OR Current Water Quality Standards

- Human health criteria are designed to protect people who drink and fish in OR's waters. (the designated use).
- The fish consumption rate is an exposure variable used in calculating human health criteria.
- In 2004, Oregon adopted revised human health criteria based on EPA's guidance values.
- EPA's guidance values are based on a national default fish consumption rate of 17.5 g/day.
 - Based on a national USDA study;
 - Represents the 90th percentile of all survey respondents.

EPA's Fish Consumption Rates and Fish Habitat Considerations

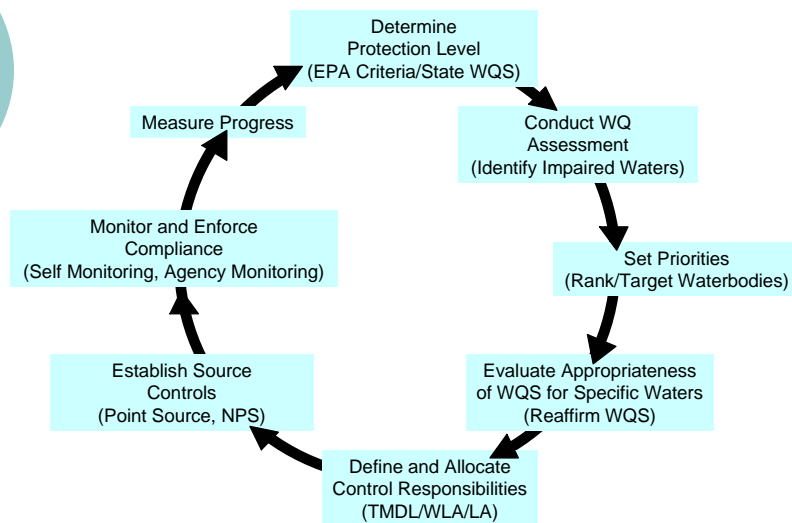
- OR's fish consumption rate is based on EPA's national default recommended fish consumption rate for general population;
- EPA has classified three types of habitat for finfish and shellfish: freshwater, estuarine, and marine;
- EPA's default fish consumption rate only includes freshwater and estuarine finfish and shellfish species.



Why does EPA only include freshwater and estuarine species in fish consumption rate?

- EPA default fish consumption rate is a national rate;
- Permitted discharges and other applications of WQS primarily occur in the fresh and estuarine waters of the State;
- The habitat of marine fish is generally outside of a State's jurisdiction;
- Since the human health criteria apply to State waters, marine species were excluded from EPA's national default fish consumption rate. However, EPA's guidance recommends accounting for marine species consumption when deriving criteria.

State Programs that Implement Water Quality Standards



EPA's Fish Consumption Rate and Salmon

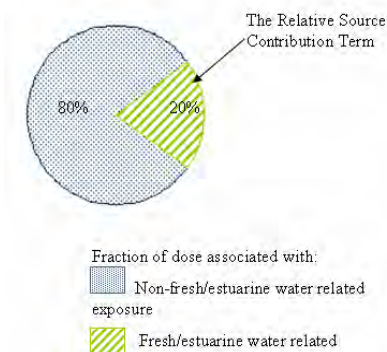
- National fish consumption survey showed that 99% of consumed salmon are marine harvested;
- Based on this, EPA classified pacific salmon as marine (chum, coho, king, pink and sockeye);
- As “marine” fish, Pacific salmon are excluded from EPA's national default fish consumption rates;
- EPA did classify land-locked (e.g. Great Lakes) and farmed salmon as freshwater/estuarine.



Marine Fish and the Relative Source Contribution (RSC)

- Can account for marine fish consumption in the RSC;
- RSC used to account for non-fresh/estuarine water exposure (e.g. marine fish, dermal, inhalation, other food sources) to ensure that chemical allowed by criteria do not exceed the RfD;
- Currently applied to non-cancer endpoints (where threshold exists-e.g. RfD);
- Represents the total exposure typically accounted for by the exposure source (see pie chart).

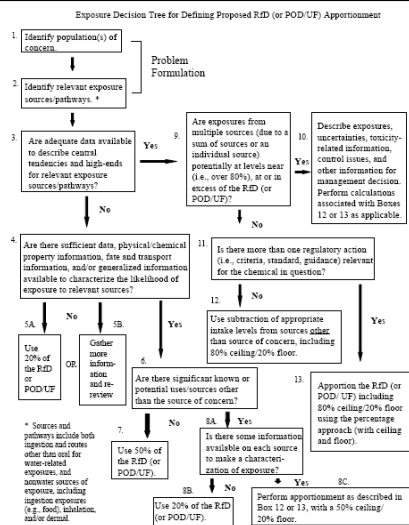
Pie represents the total allowable dose from all sources, water and non water



Developing a RSC

- States and Tribes have flexibility to use local data in developing a RSC;
- The RSC applies two methods:
 - “Percentage” method, where RSC is the percent of exposure that comes from criteria;
 - “Subtraction” method, where the RSC is an amount subtracted from the RfD
- EPA has “Exposure Decision Tree” for defining RSC, which takes in to account:
 - Chemical/physical properties of each pollutant;
 - Environmental fate of chemical;
 - Occurrence in other media;
 - Reasonable exposure characterization;
- EPA also provides default RSC (20%) where data to develop RSC are not

Exposure Decision Tree for Defining RSC

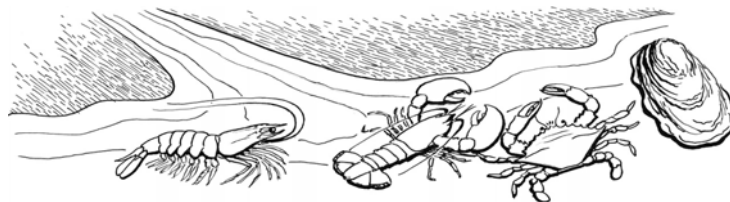


Inclusion of “Marine Fish”- State/Tribal Discretion

- States have included marine fish within the state-wide fish consumption rate;
- New York included marine fish in its fish consumption rate back in the late 1980s- using a fish consumption rate of 33 g/day (approx. 0.5 lbs/week);
 - Had local data for recreational fishermen which found average freshwater fish consumption rates were as high as 45 g/day;
 - Noted the limited number of fish species included in the national fish consumption rate compared to what people actually caught in NY;
 - Also concerned with existing contaminant levels (PCBs) in popular target fish;
 - Consistent with the general health advisory of fish in New York State;
- NY reaffirmed their decision to use this fish consumption rate in 1998 even though more stringent than EPA’s GLI guidance because data indicated local fish consumption rates exceeded the GLI guidance.

Inclusion of “Marine Fish”- State/Tribal Discretion (Cont.)

- Maine also included marine fish in its fish consumption rate of 32.4 g/day (approx. 0.5 lbs/week).
- State chose this rate as it was based on local data, and as it is consistent with what the Bureau of Health uses for its fish advisories





Summary

- EPA's national default fish consumption rate only includes 'freshwater' and 'estuarine' finfish and shellfish;
- EPA defined Pacific salmon as 'marine' fish- excluding Pacific salmon from the national default fish consumption rates;
- EPA suggests accounting for 'marine' fish in the RSC;
- States and Tribes can develop RSC's where data are available;
- However states and tribes have discretion to retain 'marine' fish in state/tribal adopted fish consumption rate.



Information You Can Provide

- Will be topic for discussion at future Workshop Meeting;
- Critical information for DEQ will be trying to identify the 'habitat' type for various target fish (e.g. lamprey, smelt, sea-run cutthroat trout) during its review;
 - You can provide life history information for these species
- What are your thoughts about this issue?
- What do you think DEQ should consider when discussing how to address salmon?