

Region 10 Framework for Selecting
and Using Tribal Fish and Shellfish
Consumption Rates for Risk-Based
Decision Making at CERCLA and
RCRA Cleanup Sites in Puget Sound
and the Strait of Georgia

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Why was this Framework developed?

1. At cleanup sites, risk assessment is the process by which EPA determines risks to human health and the environment posed by contaminants
 - Determine whether site needs cleanup
 - If cleanup required, to what extent?
2. Framework provides a consistent starting point for EPA staff to evaluate Tribal seafood consumption risks for Superfund and RCRA cleanup projects in Puget Sound and the Strait of Georgia

Why was this Framework developed? (2)

3. Need to conduct risk assessments that address:
 - Tribal sovereignty
 - Amount of seafood consumed
 - Types of seafood consumed
 - Where seafood is obtained

Why was this Framework developed? (3)

4. Many cleanup sites located within Tribal reservation lands or within Tribal “Usual and Accustomed fishing areas” (U&A)s.
5. Site related seafood contamination poses greater risks to Tribal peoples because they consume more seafood than the general U.S. population.

Why was this Framework developed? (4)

6. Need to apply limited seafood consumption information to site specific risk assessment.

What is in the draft Framework?

1. Introduction – when and how EPA’s cleanup programs intend to use the Framework
2. Discussions of key considerations in developing and using the Framework
3. Steps for Selecting the Tribal fish and shellfish consumption Rate

What is in the draft Framework? (2)

4. Discussion of Uncertainties Associated with Consumption Rates
5. Risk Management and Risk Communications Issues
6. Five Year Review Considerations
7. Appendices

How would EPA use the Framework at a specific site?

1. EPA initiates consultation with potentially affected Tribes when beginning work at an EPA-lead cleanup site
2. Consultation will involve EPA and affected Tribes developing fish and shellfish consumption rates, using Framework as a starting point
3. Continue consultation through the site study and remedy selection phases

Key points: Geographic scope

- Framework applies to cleanup sites in Puget Sound and the Strait of Georgia up to the Canadian border.
- Framework is silent on how it might be applied outside of this area.
- Key concepts of the Framework would likely be used by EPA at sites outside of this area

Key points: CERCLA and cumulative risks

- Overall health risks posed by contaminants in fish and shellfish is a major concern to Tribes and EPA
- However, EPA's cleanup programs can only address site related contamination

Key points: Framework & treaty rights

- The Framework specifically states that application of the Framework is not, in any way, to affect a Tribe's treaty rights.

Key points: Salmon & the Framework

- Inclusion of salmon in the overall consumption rate is site and contaminant specific.
- Do salmon acquire a body burden of contaminants that originate from the site?

Key points: Consultation

- Framework is not an end, but rather a starting point.
- “To be applied in Consultation with Tribal Governments on a site-specific basis”

Key points: Role of shellfish habitat

- EPA policy decision that the quality and quantity of shellfish habitat determines which seafood consumption survey to use.
- Tribal shellfish biologists key to answering this question.
- High quality/quantity shellfish habitat leads to use of Suquamish consumption rates.
- Alternate choice would be Tulalip rates.

Key points: Impact of contamination on Tribal culture

- Quantitative risk assessment does not address cultural impacts.
- Tribes may draft risk assessment sections that qualitatively discuss the impacts of contamination on Tribal culture.

Key points: Resource switching

- Regardless of species present at a site, the overall consumption rate must be used.
- Framework's position is that Tribes will substitute alternate species if desired species are not present at a site.

Key points: Alternate Tribal scenarios

- Seafood consumption scenarios in addition to an EPA derived scenario may be included:
 - At the request of a Tribe.
 - If the site falls within the exclusive U&A of a Tribe and that Tribe can document a seafood consumption scenario, then that Tribe's scenario should be included.

Key points: New consumption information

- Framework has three ways to incorporate new consumption information
 - EPA has discretion to select exposure assumptions on a case by case basis
 - Tribe may request alternative exposure assumptions, where a Tribe believes they better represent exposure.
 - Framework is a “living document”

Key points: Developing species group consumption rates

- Total rate partitioned into species group consumption rates using total rate and mean ingestion rates for species groups from Suquamish and Tulalip data.

$$\text{IR Group 1} = \text{Total IR} \times \frac{\text{Avg. IR Group 1}}{\Sigma \text{Avg. IR All Groups}}$$

- Tribes can propose alternative species group consumption rates.

How are the Framework & EPA risk assessment methodologies protective? (1)

1. All Puget Sound harvested fish & shellfish assumed to be affected by site releases.
2. Total consumption rate held constant, regardless of the species present.
3. Consumer only rates used.
4. 95th percentile consumption rates used.

How are the Framework & EPA risk assessment methodologies protective? (2)

5. Rationale for salmon exclusion must be provided.
6. Same consumption rate used regardless of site size.
7. 70 years (assumed lifetime) used for exposure duration.
8. 95% upper confidence limit used for exposure concentration

Process for Developing Rates (1)

- Ingestion rates of Puget Sound harvested seafood developed for individual survey respondents

$$IR = IR_A \times F_A + IR_B \times F_B + IR_P \times F_P + IR_S \times F_S$$

Where:

IR = ingestion rate

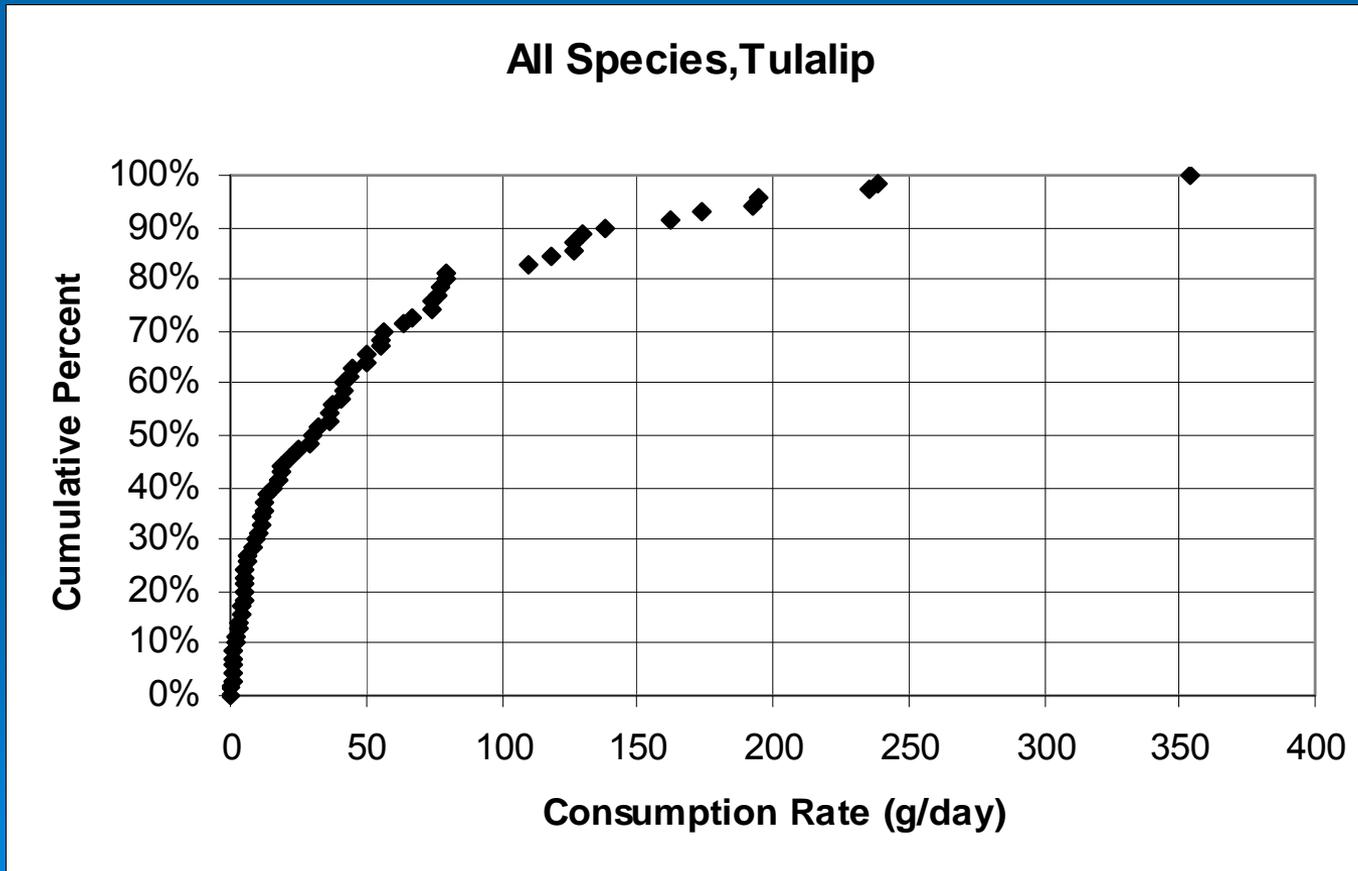
F = fraction of species group harvested from Puget Sound

A = anadromous, B = benthic, P = pelagic,

S = shellfish

Process for Developing Rates (2)

Rates rank ordered and 95th percentile selected



Consumption rate source hierarchy & values

1. Survey on Tribe affected by site.
2. Tribe w/similar characteristics
 - Suquamish g/day:
 - 796 total from all sources
 - Puget Sound harvested: **767** total, **583** w/o salmon
 - Tulalip g/day:
 - 243 total from all sources
 - Puget Sound harvested: **194** total, **97.6** w/o salmon
3. National Continuing Survey of Food Intake by Individuals, **216** g/day 99th percentile all fish including non-consumers

Framework contacts and information sources

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