



Water Quality Standards Human Health Criteria Technical Workgroup Meeting #4

Alaska Department of Environmental Conservation
Division of Water- Water Quality Standards
December 15, 2015



Webinar instructions:

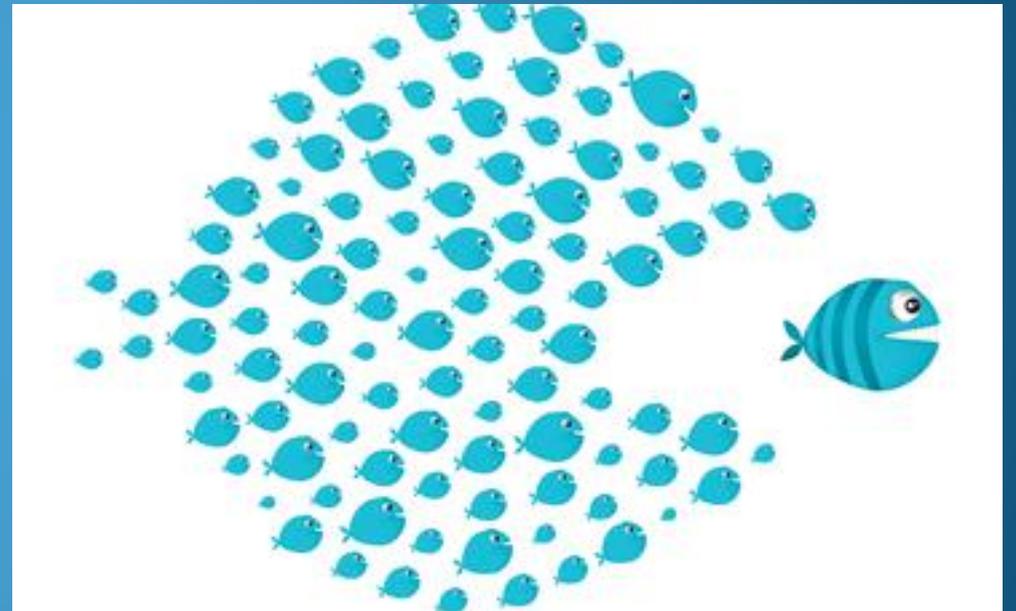
- For audio please dial: **1-800-315-6338**
- Access code: **51851**
- Note that all lines will be muted during the presentations

- Public testimony will be taken at the end of the meeting

PLEASE BE RESPECTFUL OF ALL PARTICIPANTS

Purpose of Technical Workgroup

- Provide technical feedback on issues associated with development of human health criteria (HHC) in state water quality standards
 - **Develop a Summary Report**
- Identify key sources of information that may be applicable to the process
- Ensure a variety of stakeholder voices are heard





Meeting Outcomes

Provide DEC feedback on:

1. Review general agenda for overall workgroup process
2. Introduce format of HHC Technical Workgroup Report
3. Introduce HHC Calculator Tool
4. **RECAP Issue #4a:** What species should Alaska include for deriving a fish consumption rate?
 1. Local vs. commercial
 2. Salmon
 3. Other marine fish and mammals

Questions to be considered by the Workgroup

- Issue #1: What information about fish consumption and fish consumption rates is available to inform the HHC process?
- Issue #2: What options does DEC have for developing criteria on a statewide/regional/site specific basis?
 - Issue #2a: What modeling approach(es) should DEC consider (Deterministic v. Probabilistic)?
- Issue #3: What is the appropriate level of protection for Alaska and its residents?
 - Issue #3a: How should DEC apply bioconcentration v. bioaccumulation factors?
 - Issue #3b: How should DEC address concerns about its carcinogenic risk value?



Questions to be considered by the Workgroup

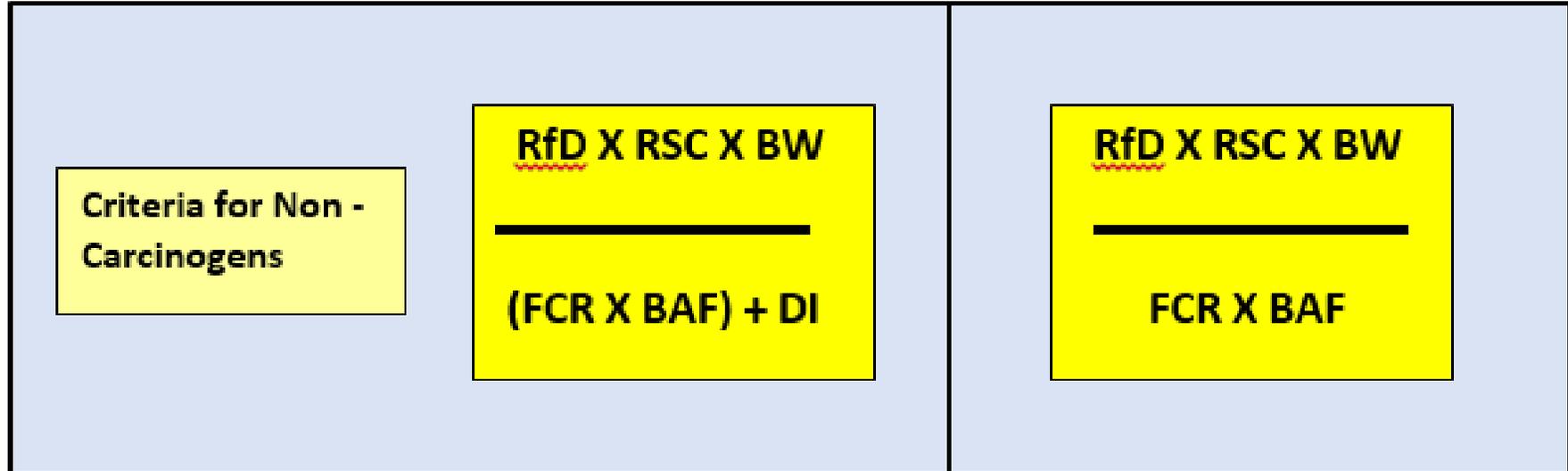
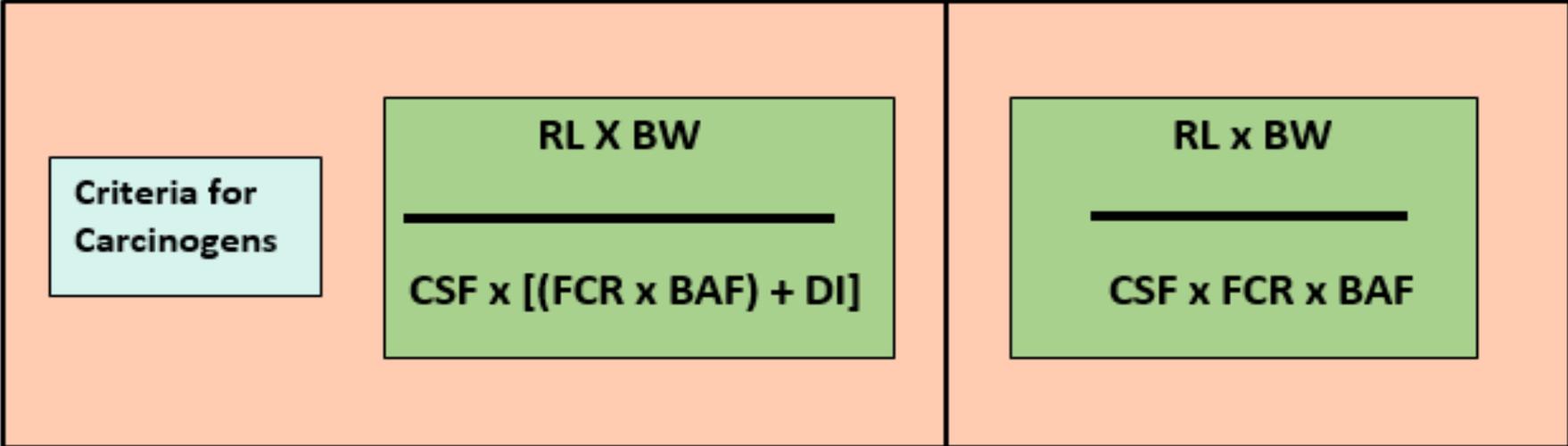
- Issue #4a: What species should Alaska include for deriving a fish consumption rate?
 - Local v. commercial
 - Salmon
 - Other marine fish and mammals
- Issue #4b: What is the role of Relative Source Contribution (RSC) in relation to fish consumption rates and what are Alaska's options?
- Issue #5: What are Alaska's options for implementing the proposed criteria?
 - Existing tools (compliance schedules) and new tools (variances, intake credits)

HHC Equation(s)

Freshwater Criteria Consumption of Organisms and Water

Marine Criteria Consumption of Organisms Only

- **RL: Risk Level**
- **CSF: Cancer Slope Factor (IRIS)**
- **RfD: Reference Dose (mg/Kg-day) (IRIS)**
- **RSC: Relative Source Contribution**
- **BW: Body Weight**
- **FCR: Fish Consumption Rate**
- **BAF: Bioaccumulation**
- **DI: Drinking Water**





Format of Technical Workgroup Report

- Executive Summary
- Introduction
- General Status and History of Alaska's HHC
- Key HHC issues
 - Description of each issue, recommendations, options considered, and further discussion
- Issues and comments raised by the public
- Appendices
 - Regs involved
 - References



Key Points

- DEC will draft the report based on comments provided during Workgroup meetings, notes from the meetings, and materials generated in support of the Workgroup process
- Workgroup members will provide DEC with feedback via DEC-provided spreadsheet on the draft version(s) of the report
 - Easy to share and merge comments for tabulation and editing purposes



HHC Derivation Tool

- Developed by the EPA for use in deriving WA criteria
- Excel based
- Uses 2015 EPA-recommended toxicology and exposure values
- KEY INPUTS (bottom of table) allow you to change the body weight, drinking water, FCR, and lifetime cancer risk
- BAF Uses Trophic level 4 or pre-2014 BCF if BAF was not calculated
- Relative Source Contribution is set at 0.20 but you can manually change it



RECAP: Issue #3: What is the appropriate level of protection for Alaska and its residents?

Consumers only v. consumers and non-consumers - what we heard as draft recommendations in the meeting #3 notes...

1. DEC should use consumer-only data as long as the focus is on FCR that protect rural populations.
 - There is little likelihood that non-consumers will be significant in rural areas.

RECAP: Issue #3: What is the appropriate level of protection for Alaska and its residents?

Population of Concern- what we heard as draft recommendations in the meeting #3 notes...

1. That protection of rural populations will likely protect urban population. DEC should focus on studying rural populations to set the Alaska FCR.
 2. Data on the resident Asian/Pacific Islander population needs to be found and considered
 3. Review of ADF&G harvest data (including Tech Paper 261) may provide a basis for Alaska FCR
- A specific percentile for protection (e.g., 50th, 90th or 95th) has NOT been recommended by the Workgroup



RECAP Issue #4a: What species should Alaska include for deriving a fish consumption rate?

All Fish (Market and Local)

- Captures ALL fish consumption
- Accounts for exposure regardless of source

Local Only

- Protective of consumption of local fish
- May be more easily traced to sources
- Less confidence in the protection FCR provides due to other routes

Discussion on Issue 4a

- What we heard as draft recommendations in the meeting #3 notes...
 1. Consumption of market-fish may not be a significant factor compared to the consumption of locally- sourced fish/aquatic life for rural populations
 2. DEC should look for data on the amount of fish and shellfish sold commercially in rural areas.
- ADF&G harvest data only considers locally caught fish.
 - This may not affect the FCR value in rural areas
 - The impact of market fish to FCR for urban Alaska is unknown.
- Still need to determine how best to address marine mammal consumption



Issue #4a: What species should Alaska include for deriving a fish consumption rate?: How should we treat Anadromous Species

- Reasons to include
 - Alaskans and anadromous species are closely linked
 - Inclusion would be a better estimate of *general* fish consumption
- Reasons to exclude
 - Marine species are addressed in the RSC component of the HHC methodology
 - Majority of contaminates marine fish are exposed to come from outside Alaska jurisdiction



Option 1: Include at full rate

- Why?
 - Consistent with Oregon and Washington
 - Better accounting of actual consumption- regardless of source
 - Public perception
- Why not?
 - Salmon may be exposed to toxics outside of state jurisdiction
 - Inclusion will result in more stringent criteria without providing substantive decrease in toxin levels
- Potential Outcomes
 - Could affect how RSC is calculated- double counting marine fish?

Option 2: Include at a reduced rate

- Concept: State incorporates some percentage of anadromous consumption into FCR
- Why?
 - Recognizes that marine fish are part of general diet
 - Recognizes limitations on what Alaska does and does not regulate
- Why not?
 - Salmon may be exposed to toxics outside of state jurisdiction
 - Inclusion will result in more stringent criteria without providing substantive decrease in toxin levels
- Potential effects
 - May affect how RSC is calculated- double counting of marine fish?



Option 3: Do not include anadromous species

- Why
 - Salmon may be exposed to toxics outside of state jurisdiction
 - Inclusion will result in more stringent criteria without providing substantive decrease in toxin levels
 - Consistent with EPA's approach for national fish consumption rates
- Why not
 - Will make approval process challenging
 - Not consistent with other R10 coastal states (and EPA comments to Idaho)
- Potential effects
 - Retention of RSC values



Discussion: How should we treat Anadromous Species?

- What DEC heard in the notes...
 - Very cursory discussion to date
 - Understanding that this is a policy rather than a science-based decision
 - Decision to include as part of FCR may affect the Relative Source Contribution

Public Comment



Next Technical Workgroup Meeting

- January, 2015
- Teleconference will be available.
- **Topic: Issue 4b: What is the role of Relative Source Contribution (RSC) and what are Alaska's options?**
 - Description of RSC
 - Approaches used by other states
 - Opportunities for DEC to consider