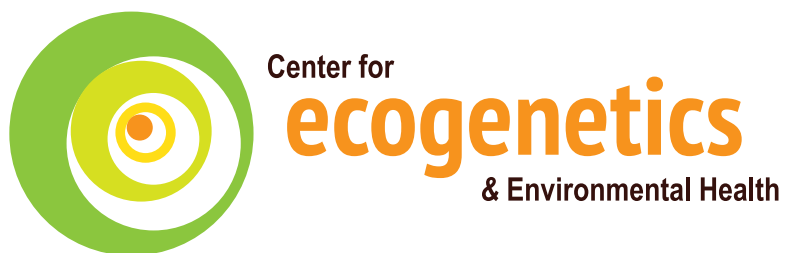
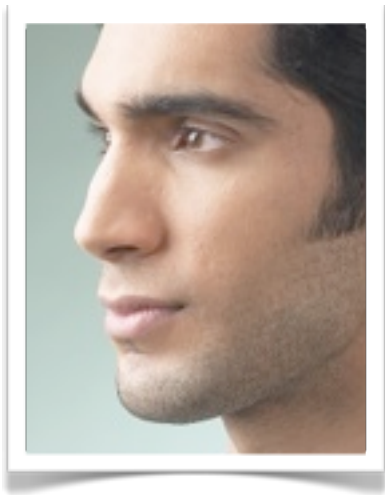




# *Perspectives On Environmental Health*

Seafood from Puget Sound -  
How Much Can We Safely Eat?



## Acknowledgements

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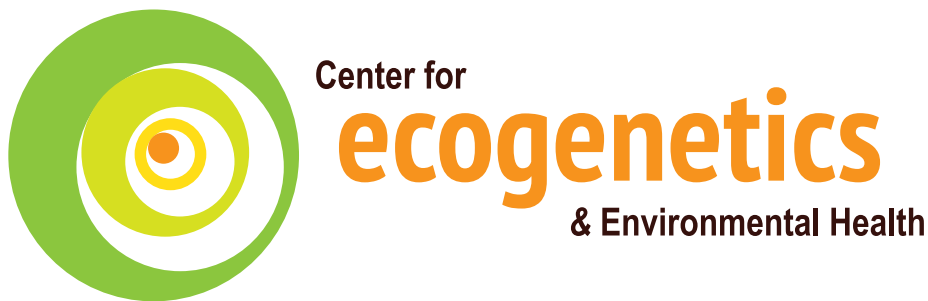
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This activity was developed by the Community Outreach and Ethics Core of the Center for Ecogenetics and Environmental Health at the University of Washington with funding from the National Institute of Environmental Health Sciences, grant # ES007033.



## Activity Instructions and Facilitator Guide

This activity is designed to promote discussion and critical thinking about the issue of seafood safety. While much of the information included in the activity is real and accurate, the people and places are, for the most part, fictional.

The activity is designed for a group of 6 or more participants. It can be used with secondary school students as well as adults. The facilitator should be familiar with the basic principles of public health and environmental health and should have read all the activity materials beforehand.

### Before the Event:

1. Make the following number of copies of the handouts:
  - a. "Setting the Scene" page - one copy for each facilitator and participant
  - b. "Perspective" pages (3 roles) - one Perspective for each participant, Since each participant will be assigned one of the 3 perspectives, divide the number of participants by 3 and make that many copies of each perspective page (1 double-sided page per participant).
  - c. "Take Away Messages about Safe Seafood" - one copy for each facilitator

### At the Event:

1. Divide participants into groups of 2 to no more than 5. You will need at least 3 groups. Ideally, the number of groups should be a multiple of three.
2. Assign one of the three "Perspectives" - Joe James, Larry and Linda Lakey, or Janelle Jackson - to each group. The group's assignment is to take on the character they are assigned and try to respond to the prompts the way they think that character would respond.
3. Distribute the handouts to each group according to the character they have been assigned. Tell them to choose both a note taker and a spokesperson. Instruct them to read Part I of the narrative, either to themselves or as a "round robin" (each person reads a few sentences then it moves to the next person), then discuss the questions for Part I as a group. Encourage each group to come to consensus around their answers to the questions. Remind them to consider the questions from the point of view of their assigned character.
4. Invite each group's spokesperson to share the following with the larger group: Who they are, what questions they were asked to discuss in Part I, and how they answered the questions. Encourage others to ask clarifying questions to make sure that the whole group understands the various perspectives and characters being presented.
5. Show the Powerpoint presentation. You may give each participant a copy of the "Setting the Scene" background document before or after the powerpoint presentation. If the facilitator does not present the Powerpoint, instruct the small groups to read the "Setting the Scene" sheet as a round robin. Or ask them to read it quietly to themselves. Remind them to study the Figures and Table on the reverse side.
6. To help the students understand the material,ask these questions to the whole group and discuss:

"Look at Figure 1. How many servings of salmon per week does the Department of Health *Healthy Fish Guide* suggest is safe to eat? How many ounces per week? Does the type of

## ***Perspectives on Environmental Health: Seafood from Puget Sound How Much Can We Safely Eat?***

salmon matter? Does it matter where the fish comes from? Does the amount that's safe to eat depend on the size of the person?"

"Now look at Table 1. How many grams of seafood per day does the average Suquamish Tribal member eat? What is meant by average? How do you calculate an average? How many grams/day do those in the 95<sup>th</sup> percentile of Suquamish Tribal members eat? How many more grams of seafood/day does a Suquamish Tribal member in the 95<sup>th</sup> percentile eat than a Suquamish Tribal member who eats the average amount? How much is that in ounces?"

7. Ask participants to read "Part 2" on the reverse side of their handout, either to themselves or as a round robin. (Part 2 is the same for all characters). Discuss and answer the questions as a group. Make sure they understand that they are to write a Public Comment that expresses the perspective of their character. They should choose one group member who will read the Public Comment in a "formal" presentation in front of the whole group.
8. Public Comment presentation: Explain the way Public Comments actually work: Public comments can be submitted in written form or orally at a public meeting. Those who wish to give oral comments are asked to sign up to speak before the meeting begins. During the meeting, speakers are called to the microphone by name in the order they signed up. Comments have a time limit, often 5 minutes. There is no discussion between the comments. A court reporter records each comment verbatim for the public record. Before each comment begins, the person states his or her name and affiliation.
9. Call speakers to the front of the room one-by-one by their character's name. Ask them to introduce themselves and their affiliation (My name is Janelle Jackson and I live in Seahaven) (My name is Larry/Linda Lakey. I live in Seahaven and work at the Salmon River Pulp and Paper Mill) (My name is Joe James and I am a fisherman and a tribal member).
10. After the Public Comments, invite the whole group to discuss the comments and the different perspectives they represent. Invite the group to suggest what Ecology might do with the feedback about their proposed FCR of 157 grams/day. Then summarize the material on the "Take-Away Messages About Safe Seafood" handout as appropriate to the group.
11. Close with a discussion of how this activity might be relevant to the participants' real lives. Do they struggle with knowing how to make healthy eating choices in the face of pollution? Are they aware of any mixed messages they hear from the media and experts regarding seafood consumption? Do they take part in activities that cause water pollution? Are there ways they can help reduce water pollution? Ask what they have learned from this activity.



## Setting the Scene: Background Information about Seafood Safety and Puget Sound

- Perch, rockfish, flounder, sole, salmon, and trout live in Puget Sound.
- Local shellfish include crab, clams, cockles, mussels, oysters, and shrimp.
- Industry and manufacturing have operated on Puget Sound for more than 160 years, contaminating the Sound and rivers with industrial waste. These industries include fishing, marine, aerospace, paper, biotechnology, electronics, telecommunication, transportation, and military.
- Agricultural farmers and residential homeowners are responsible for pollution, too. Rain and snow flow over fields, lawns and roads, washing fertilizers, chemicals, oil, and litter into the Sound.
- Some toxic chemicals found in Puget Sound are polychlorinated biphenyls (PCBs,) polycyclic aromatic hydrocarbons (PAHs), oil, phthalates, mercury, cadmium, arsenic and lead.
  - Being exposed to PAHs for a long time can cause cataracts, jaundice, liver and kidney damage.
  - Exposure to PCBs and PAHs can cause cancer.
  - Mercury exposure can cause neurological symptoms including Parkinson's disease. Mercury can harm the growing brain and nervous system of fetuses, infants and children, and can also increase the risk of heart attack.
  - Phthalates are endocrine-disrupting chemicals that affect hormone levels and can cause birth defects.
- When people eat fish and shellfish from Puget Sound, they are exposed to the toxic chemicals that have collected in these animals.
  - Rockfish and Chinook salmon have high amounts of PCBs and mercury.
  - In the Duwamish River, perch, sole, flounder, rockfish and all shellfish are so contaminated with PCBs that the Washington State Department of Health (DOH) has issued a fish advisory that warns everyone -- men, women and children -- not eat any resident fish, crab or shellfish from the Duwamish River.
- On the other hand...eating fish and shellfish is healthy. Seafood is a high-protein food that is low in saturated fat and contains omega-3 fatty acids, B and D vitamins, and essential trace minerals.
  - The American Heart Association recommends eating at least 2 meals of fish per week.



Figure 1: Washington State Department of Health's Healthy Fish Guide Wallet Card

**Fishing for the Safest Seafood?** Look for this symbol.

**SAFE TO EAT 2-3 MEALS PER WEEK** OR **SAFE TO EAT 1 MEAL PER WEEK** **AVOID DUE TO MERCURY**

**Follow this advice to reduce your exposure to mercury, PCBs, and other toxics:**

**Women who are or may become PREGNANT, NURSING MOTHERS, and CHILDREN should NOT eat:**

- ♥ Anchovies
- Butterfish
- Catfish
- Clams
- Cod (Pacific) (Atlantic)
- Crab (Blue, King, Snow) (US, CAN) (imported King)
- Crab-Imitation
- Crayfish (imported farmed)
- Flounder/Sole (Pacific) (Atlantic)
- ♥ Herring
- ♥ Mackerel (canned)
- ♥ Oysters
- Pollock/Fish sticks
- ♥ Salmon (fresh, canned)
- ♥ Chinook (King) (coastal, AK)
- ♥ Chum (Keta)
- ♥ Coho (Silver)
- ♥ Farmed \*
- ♥ Pink (Humpy)
- ♥ Sockeye (Red)
- ♥ Sardines
- Scallops
- Shrimp/Prawns (US, CAN) (imported)
- Squid/Calamari
- Tilapia (US, Central/South America) (China, Taiwan)
- ♥ Trout
- Tuna (canned light)
- ♥ Black sea bass
- Chilean sea bass
- ♥ Chinook salmon (Puget Sound)
- Croaker
- Halibut (Pacific) (Atlantic)
- Lobster (US, CAN) (imported Spiny Caribbean)
- Mahi mahi (imported longline)
- Monkfish
- Rockfish/Red snapper (trawl-caught)
- ♥ Sablefish/Black cod (fresh, canned white) (WA, OR, CA troll/pole) (longline - except Hawaii)
- ♥ Tuna, Albacore (fresh, canned white)

A seafood serving or "meal" is about the size and thickness of your hand, or 1 oz. for every 20 lbs. of body weight.

160 lb. Adult = 8 oz. 80 lb. Child = 4 oz.

♥ Highest in healthy omega-3 fatty acids

ORANGE TEXT: Overfished, farmed, or caught using methods harmful to marine life and/or environment

\* For environmental and health information, visit [www.doh.wa.gov/fish/farmedsalmon](http://www.doh.wa.gov/fish/farmedsalmon)

Fish not listed? Call DOH: 1-877-485-7316

Table 1: Summary of Fish Consumption Surveys\*\*

Population Surveyed	Date Survey Taken	Average Per Day	* 95th Percentile
US Population	1980s	6.5 grams	No Info Available
Recreational Fishermen in Washington State	1991	54 grams	No Info Available
Tulalip Tribal Members	1996	72 grams	244 grams
Asian & Pacific Islanders	1999	117 grams	306 grams
Suquamish Tribal Members	2000	214 grams	489 grams

\*One in twenty survey respondents eats this much.

Figure 2: Serving sizes in grams and ounces



\*\*Source of Table 1: WA Department of Ecology Fish Consumption Rates Technical Support Document, Pub # 11-09-050, September 2011.



## **Perspective #1: Joe James, Part 1**

- You are taking on the role of Joe James, a member of an American Indian tribe in Puget Sound. Federally recognized tribes have the right to harvest fish and shellfish in their historic fishing areas.
- In 1974, the Boldt Decision reaffirmed the right of tribes in Washington to harvest up to 50% of the harvestable number of salmon in their usual and accustomed fishing areas. Harvesting and eating seafood is a cornerstone of Puget Sound tribal culture and cultural practices.
- But fish consumption by tribal members is suppressed. This means tribal members eat less fish than their ancestors ate, and many eat less than they would like to eat.
- First the tribes were driven from their land and had no fishing rights. When fishing rights were restored, habitat was destroyed and fish populations declined. Now as attempts are being made to protect and restore fish populations, tribal members can't harvest in some traditional fishing grounds because the fish is not safe to eat. Meanwhile, tribes have high rates of obesity and diabetes that they might not have if they were able to eat their traditional foods.
- Along with other members of your tribe, you make your living harvesting salmon from your tribal fishing grounds at the mouth of the Salmon River on Puget Sound.
- Your tribe sells the salmon to a grocery chain under contract. The fish sold in the stores are labeled "Wild Tribal-Caught Salmon". You don't sell everything you catch and bring home enough to provide your family with a diet rich in seafood. You eat one or two meals of fresh seafood every day.
- You have seen the WA Dept. of Health (DOH) *Healthy Fish Guide* that includes information about many types of fish and shellfish, including Puget Sound and Washington coastal salmon. DOH recommends that people in Washington include fish in their diet. The Healthy Fish Guide tells how much of different species you can eat and be safe.
- You are also aware of the DOH fish advisories posted on rivers and beaches where some seafood is not safe to eat. You follow the posted fish advisories, but you don't use the Healthy Fish Guide because the amount of fish it says you should eat is too restrictive.



### **Discussion Questions:**

1. Your diet includes a large amount of seafood and you eat far more than the recommended amount. Are you worried about being exposed and exposing your family to unsafe chemicals? If you are, what can you do?
2. You and your fellow tribal members cannot get the quantity or quality of seafood that your ancestors did. Is this fair? Do you think the government's obligation is (1) to warn people about the health risks of eating seafood, or (2) to clean up the water and sediment to make seafood safer and more available to tribes? Why? What are some ways the US government could do this?

## **Perspective #1: Joe James, Part 2**

- The Department of Ecology (Ecology) is using the information in Table 1 to recommend a new Fish Consumption Rate (FCR) for Washington State. **The FCR is the official estimate of how much fish people eat and it dictates the levels of pollution that are allowed.**
- The FCR will be used as part of a formula that establishes the state Surface Water Quality Standards, which dictate emission standards (how much pollution can be released into the water).
- The FCR is also used in the formula that sets the Sediment Management Standards for cleaning up contaminated sediment at the bottom of rivers, lakes, and Puget Sound. The FCR is an important factor in water quality.
- Setting a new FCR is contentious. When the FCR is low, Water Quality and Sediment Management Standards are less strict and ,more pollution can be released into the water. When the FCR is high, Water Quality and Sediment Management standards are more strict and less pollution can be released.
- Washington State currently uses two different FCRs, 6.5 grams/day to calculate Water Quality Standards and 54 grams/day to calculate Sediment Management Standards. Ecology believes these FCRs are outdated and inaccurate. The agency also feels that protecting the “average” consumer of seafood in a population is not sufficient and that those who eat more than the average amount of seafood should also be protected from health risks.
- Ecology’s review of the data suggests that people should be able to eat between 157 and 278 grams of seafood per day (11-18 pounds per month) and still be protected. Based on this, **Ecology is proposing that the Washington FCR be increased to 157 grams/day.**
- Industries are protesting, saying that it would be too expensive to comply with the new emissions standards that would result from the new higher FCR.
- Many Tribal representatives are concerned that the proposed FCR is still too low because many Tribal members eat more fish than 157 grams/day and they should be equally protected.
- Ecology is seeking public comments about their proposed FCR of 157 grams/day.

### **Discussion Questions:**

1. Consider how a FCR of 157 grams/day would affect you as a fisherman and tribal member and whether you agree with Ecology’s proposed FCR.
2. As a group, write out one public comment telling Ecology what you think about their proposed FCR. Pick a spokesperson from your group who will stand up and deliver your public comment. You will have 1 minute to deliver your group’s public comment.

## **Perspective #2: Larry and Linda Lakey, Part 1**

- You are taking on the role of Larry and Linda Lakey, a couple who both work for the Salmon River Pulp and Paper Mill, the largest employer in Seahaven. You have two middle-school aged children and own a home in Seahaven.
- You are proud of the work you do and of your company. Paper from the Salmon River mill is shipped throughout the U.S. and Canada, and across the Pacific Ocean to Asia. You are also grateful to have family-wage jobs and benefits that have allowed you to enjoy a middle-class lifestyle, own a home, and save money for college for your kids.
- Since you both have worked at the mill for years, you know a lot about how the mill operates, and about making paper in general. Like most pulp and paper mills, the Salmon River mill is located on the river because it takes a lot of water to make paper. You are aware that processing wood and making paper requires chemicals, and that some of those chemicals and their byproducts get into the air and water.
- Paper making uses sulfur to create wood pulp and chlorine for bleaching, as well as ammonia, mercury, benzene and chloroform. Sulfur forms sulfur dioxide and is released into the air; sulfur dioxide can cause acid rain. Chlorine forms dioxins which are released into the water. Dioxins are highly toxic. They accumulate in the food chain in the fatty tissue of animals and cause cancer as well as reproductive, developmental, immune and hormonal effects. Humans are exposed to dioxins through food, including fish and shellfish.
- There have been news reports that toxic chemicals are showing up in fish and shellfish in Puget Sound and Washington rivers. These reports claim that many of the toxic chemicals come from past and present manufacturing and industry. It makes you uncomfortable when news reports blame industries like yours for the contaminants in water and seafood. You believe industry is meeting a need; there is a demand for paper, and making it requires chemicals. You believe that your plant uses the cleanest technology available - as long as it's economically feasible. This problem of chemicals in fish is not only industry's responsibility.
- If we need to limit how much seafood we eat to stay healthy, that's a small price to pay for all the benefits your family and community get from the paper plant. You are also concerned that if stricter regulations for emissions are put in place, it could be so expensive for the mill that it would close and you both could lose your jobs, putting your and your children's futures in jeopardy.



### **Discussion Questions:**

1. You are well aware of that sulfur and chlorine are used to make paper and are present where you work. Are you concerned about long-term health risks from being exposed to these chemicals on the job? Do you think you could eventually get cancer from being exposed to dioxin-forming chlorine? Why or why not? If you are concerned, what can you do?
2. Do you eat seafood? Do you serve it to your kids? If you do, will news reports about dangerous chemicals in local seafood make you re-evaluate how much seafood you eat?

## **Perspective #2: Larry and Linda Lakey, Part 2**

- The Department of Ecology (Ecology) is using the information in Table 1 to recommend a new Fish Consumption Rate (FCR) for Washington State. **The FCR is the official estimate of how much fish people eat and it dictates the levels of pollution that are allowed.**
- The FCR will be used as part of a formula that establishes the state Surface Water Quality Standards, which dictate emission standards (how much pollution can be released into the water).
- The FCR is also used in the formula that sets the Sediment Management Standards for cleaning up contaminated sediment at the bottom of rivers, lakes, and Puget Sound. The FCR is an important factor in water quality.
- Setting a new FCR is contentious. When the FCR is low, Water Quality and Sediment Management Standards are less strict and ,more pollution can be released into the water. When the FCR is high, Water Quality and Sediment Management standards are more strict and less pollution can be released.
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- Ecology’s review of the data suggests that people should be able to eat between 157 and 278 grams of seafood per day (11-18 pounds per month) and still be protected. Based on this, **Ecology is proposing that the Washington FCR be increased to 157 grams/day.**
- Industries are protesting, saying that it would be too expensive to comply with the new emissions standards that would result from the new higher FCR.
- Many Tribal representatives are concerned that the proposed FCR is still too low because many Tribal members eat more fish than 157 grams/day and they should be equally protected.
- Ecology is seeking public comments about their proposed FCR of 157 grams/day.

### **Discussion Questions:**

1. Consider how an FCR of 157 grams/day would affect your family as employees of the Salmon River Pulp and Paper Mill and as residents of Seahaven. Do you support Ecology’s proposed FCR?
2. As a group, write out one public comment telling Ecology what you think about their proposed FCR. Pick a spokesperson from your group who will stand up and deliver your public comment. You will have 1 minute to deliver your group’s public comment.

## **Perspective #3: Janelle Jackson, Part 1**

- You are taking on the role of Janelle Jackson. You live in the small town of Seahaven, located where the Salmon River enters Puget Sound. You enjoy walking on the riverfront and beach in Seahaven.
- For several years now, you have followed a pescatarian diet, eating vegetarian foods plus fish and seafood. You eat fish because you enjoy it and also because you know that seafood is very healthy, full of protein and high in healthy omega-3 fatty acids. The American Heart Association recommends eating at least 2 meals of fish or seafood every week.
- But you have read that some types of fish and shellfish are safer than others, and that toxic chemicals in the water are showing up in these animals in Puget Sound and Washington rivers. You know that many of the toxic chemicals come from past and present manufacturing and industry.
- You feel conflicted because it's important to you that the seafood you enjoy be safe to eat. Eating a healthy diet is even more important right now because you are trying to get pregnant. You worry because you know that pregnant women need the proper nutrients for a healthy fetus to develop, and you've heard that pregnant and nursing women and growing children are more at risk if they eat fish that contains toxic chemicals.
- Not eating fish and seafood isn't a good option because you would need to find other sources of healthy protein. DOH offers a Healthy Fish Guide that tells how much of which types of seafood you can eat and be safe. You carry it in your wallet and consult it at the grocery store.
- You enjoy taking long walks along the Salmon River near your home. You've noticed the river doesn't look very clean. The Department of Health is responsible for issuing fish consumption advisories for rivers, lakes, Puget Sound, and other water bodies across the state where the fish and shellfish aren't safe to eat. Although there are no signs posted where you walk along the river, you wonder how safe it is to eat fish from the river.
- To complicate matters, the grocery store where you shop has a contract with local tribes to buy salmon harvested from their traditional fishing grounds. The fish is labeled "Wild Tribal-Caught Salmon". In a conversation with the butcher, you learn this salmon is from the Salmon River. When you express concern about how dirty the river appears to be, the butcher tells you the grocery chain has no concerns about selling fish from the Salmon River.



### **Discussion Questions:**

1. With the publicity about toxic chemicals in fish, how many times per week do you decide to eat fish and shellfish?
2. You have bought the Wild Tribal-Caught Salmon in the past. Now that you know it is from the Salmon River, what are the pros and cons of continuing to buy and eat Wild Tribal-Caught Salmon? What alternatives do you have?
3. With the information you have about toxic chemicals in fish, do you feel comfortable that you can make good decisions about eating seafood? Why or why not?



## **Perspective #3: Janelle Jackson, Part 2**

- The Department of Ecology (Ecology) is using the information in Table 1 to recommend a new Fish Consumption Rate (FCR) for Washington State. **The FCR is the official estimate of how much fish people eat and it dictates the levels of pollution that are allowed.**
- The FCR will be used as part of a formula that establishes the state Surface Water Quality Standards, which dictate emission standards (how much pollution can be released into the water).
- The FCR is also used in the formula that sets the Sediment Management Standards for cleaning up contaminated sediment at the bottom of rivers, lakes, and Puget Sound. The FCR is an important factor in water quality.
- Setting a new FCR is contentious. When the FCR is low, Water Quality and Sediment Management Standards are less strict and ,more pollution can be released into the water. When the FCR is high, Water Quality and Sediment Management standards are more strict and less pollution can be released.
- Washington State currently uses two different FCRs, 6.5 grams/day to calculate Water Quality Standards and 54 grams/day to calculate Sediment Management Standards. Ecology believes these FCRs are outdated and inaccurate. The agency also feels that protecting the “average” consumer of seafood in a population is not sufficient and that those who eat more than the average amount of seafood should also be protected from health risks.
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- Industries are protesting, saying that it would be too expensive to comply with the new emissions standards that would result from the new higher FCR.
- Many Tribal representatives are concerned that the proposed FCR is still too low because many Tribal members eat more fish than 157 grams/day and they should be equally protected.
- Ecology is seeking public comments about their proposed FCR of 157 grams/day.

### **Discussion Questions:**

1. Consider how a FCR of 157 grams/day would affect you as a woman of childbearing age, pregnant mother, and mother of a young child. Do you agree with Ecology’s proposed FCR?
2. As a group, write out one public comment telling Ecology what you think about their proposed FCR. Pick a spokesperson from your group who will stand up and deliver your public comment. You will have 1 minute to deliver your group’s public comment.



## Take-Away Messages About Safe Seafood

1. The health benefits of eating seafood outweigh the risks if you choose fish and shellfish that are low in contaminants. As the Healthy Fish Guide says, “Eat Fish, Be Smart, Choose Wisely”. The American Heart Association recommends eating at least two fish meals per week.
2. The WA DOH provides the Healthy Fish Guide at: <http://www.doh.wa.gov/CommunityandEnvironment/Food/Fish/HealthyFishGuide.aspx> (Search “WA DOH fish”). For information about local fish advisories, see [www.doh.wa.gov/fish](http://www.doh.wa.gov/fish).
3. More about the Fish Consumption Rate (FCR):
  - FCRs are used to set regulation standards for clean water and for cleaning up contaminated sediment.
  - FCRs are controversial because they affect the rules for how much pollution industrial and municipal plants are allowed to discharge into lakes, river, and the Sound.
  - Ecology Director Ted Sturdevant says that “Washington’s fish consumption rates for years have not reflected actual consumption.” (FCRs are 6.5 grams/day for Surface Water Quality Standards and 54 grams/day for Sediment Management Standards).
  - Ecology estimates people need to be able to eat 157-267 grams/day or 11-18 pounds of seafood/month and be safe from contaminants.
  - Business and local government interests reacted with alarm at Ecology’s estimate.
4. Oregon Fish Consumption Rate:
  - 2004 - FCR was set at 17.5g/day for Water Quality Standard
  - 2010 - EPA rejected this rate as too low
  - 2010 - Oregon adopted the FCR 175 grams/day, the highest in the US
5. Idaho Fish Consumption Rate:
  - 2010 - new FCR of 17.5 g/day
  - 2012 - new FCR under review by EPA
6. Ethical Issues:
  - Native Americans were driven from their land and had no fishing rights. When fishing rights were restored, habitat was destroyed and fish populations declined. Now as fish populations are being restored, tribal members can’t harvest in some traditional fishing grounds because the fish is not safe to eat. Injustice is heaped on injustice.
  - Higher fish consumers tend to be from vulnerable populations. Some are non-English speakers or illiterate and can’t read fish advisory signs. Some are subsistence fisherman and can’t afford to buy their food. Some of these vulnerable populations also have high rates of obesity and diabetes.
  - The Washington State FCR, 6.5 grams/day, used for Surface Water Quality Standards, is based on a survey of all US residents, including people who don’t eat fish.
    - Including non-fish eaters makes the FCR artificially low.
    - “It makes no sense to direct standards to people who aren’t eating fish. It’s like directing an anti-smoking campaign at nonsmokers.” [Catherine O’Neill, law professor & faculty fellow at Center for Indian Law & Policy, Seattle University].

***Perspectives on Environmental Health: Seafood from Puget Sound How Much Can We Safely Eat?***

7. Action steps we can take:

- Prevent non-point pollution by:
  - Not dumping anything into storm drains;
  - Washing the car at the carwash where water is recycled, or on the grass to filter the soap and dirt before water reaches the storm drain;
  - Using less lawn fertilizer;
  - Disposing of leftover prescription medications through the 'Take It Back' network or at your pharmacy. Don't flush them down the drain or toilet!
- Take hazardous household waste to the Wastemobile where it will be disposed of safely. See <http://www.lhwmp.org/home/hhw/disposal-locations.aspx>.
- Tell government agencies to keep the water clean by responding to public comment periods (Google 'WA public comment' to learn which agencies are asking for public comments)