



# **Benefits of a Higher Fish Consumption Rate**

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**Presented by:**

**Kristin Lee, ECONorthwest**

**Sarah Kruse, Ecotrust**



Context:

## Excerpt from FIIAC's Charge

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“...Provide information about the economic benefits of an increased fish consumption rate...”



# Context:

## **Economic Effects**

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When evaluating fiscal impacts, DEQ considers the “economic effect of the proposed action on the public.” (ORS 183.335(2)(b)(E))

Economic effects can be *positive* (benefits) or *negative* (costs).

# Status of FIIAC's Benefits Work

- No benefits analysis was commissioned.
- FIIAC was presented with information useful to considering benefits from FIIAC members, Oregon Environmental Council, and DEQ.
- Questions on benefits were submitted to SAIC
- Draft summary of benefits information prepared (see handout)

# Economic Perspective

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- Outdated Approach: Environmental protection comes *only* at an economic cost.
- New Approach: Environmental protection entails *both* costs and benefits, and there are multiple ways that a healthy environment provides economic value.

One example: individuals attracted to an area's high quality of life can also attract businesses (jobs, etc.) to an area.



# Key Considerations

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Costs can be easier to quantify than benefits, but that doesn't imply costs are more important, more precise, or necessarily a larger value.

- Costs and benefits can be distributed differently across the public, business, and society at large and have different impacts on different groups.
- When either costs or benefits are “external” to the decision, the economic signals are distorted.

# Examples of Economic Benefits

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**Human Health:**            Reduced Mortality Risks  
                                      Reduced Illness Risks

## **Amenities**

**Ecological Benefits:** Marketable products  
                                      Non-market goods and services  
                                      Ecosystem goods and services  
                                      “Non-use” values

## **Reduced Materials Damage**



**Avoided costs and other benefits can affect the economic well-being of individuals, households, firms, and society at large.**

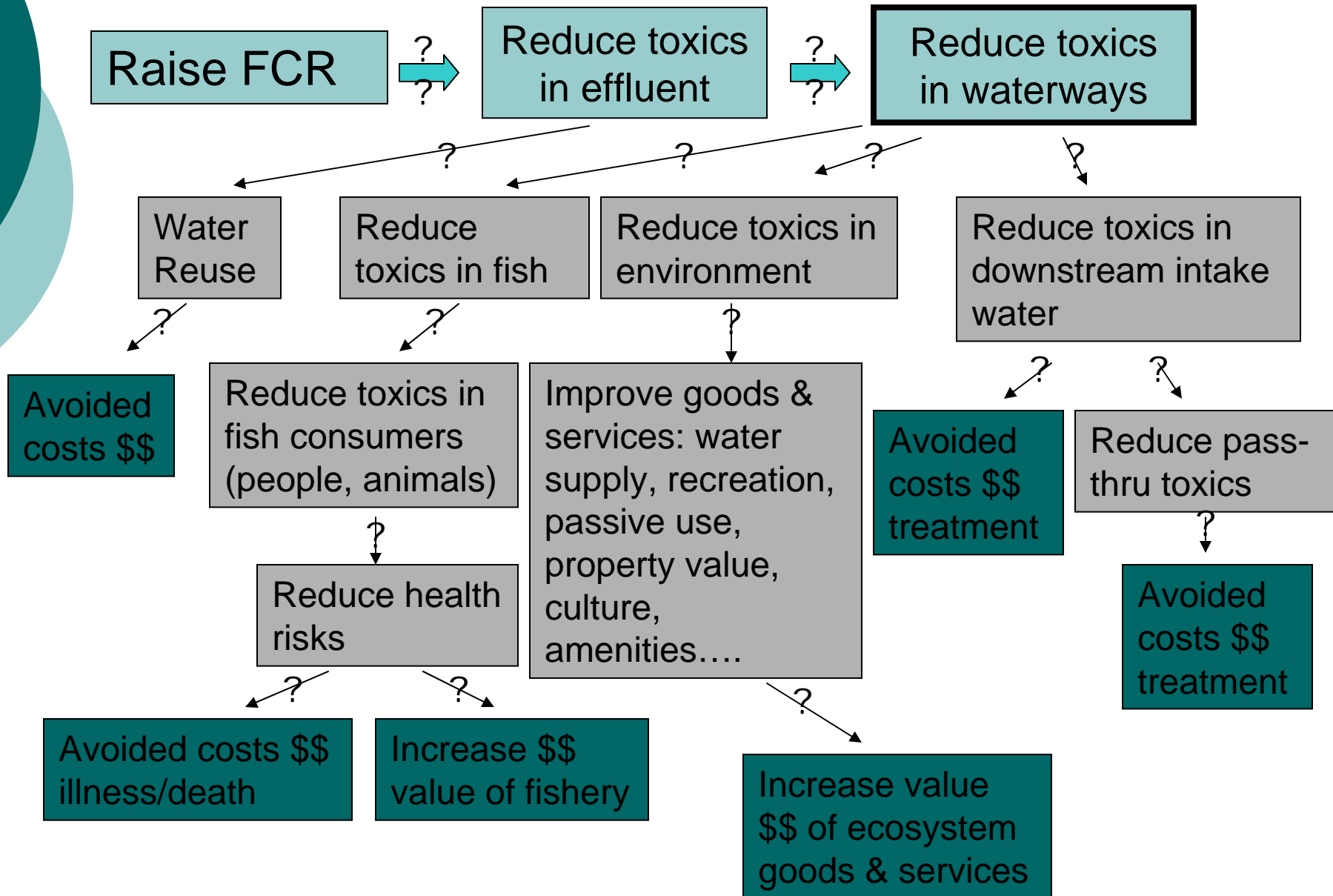


# Conducting a Benefits Analysis

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- Ecologists, engineers, economists, etc. work together to link...
  - direct actions
    - to
  - ecological effects
    - to
  - other effects
    - to
  - economic outcomes (\$)

# Conceptual Model of Some Benefit Pathways





# Examples: Potential Benefits from Higher FCR

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## ○ Human Health:

- Reduced Cancer Risks
- Reduced Risks of Illness
- Reduced Costs of Treating Disease
  
- Example: Cost avoidance is one measure of economic benefit. Environmentally-attributable disease (not specific to fish) costs Oregonians \$1.57 billion/ yr (Oregon Environmental Council Report). Any reduction in these costs from a higher FCR would be an economic benefit.



# Examples: Potential Economic Benefits

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- Potential Benefits for Industrial, Commercial, Municipal Uses:
  - Cleaner intake water for industries downstream
  - Avoided costs of treatment
  - Cleaner effluent
  - More valuable effluent, water reuse?
  - Commercial fisheries



# Examples: Potential Economic Benefits

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- Potential Benefits to Other Water Users
  - Recreation—fishing, swimming, birding
  - Cultural—Tribal value, northwest culture
  - Amenity value, property values
- Potential Ecosystem Goods & Services Benefits
  - Higher quality water supply
  - Greater resiliency as ecosystem conditions change
- Potential “passive use” or “non-use” benefits
  - Property values
  - Existence values, bequest values



# Implementation Alternatives & Potential Benefits

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- All else equal, a strategy that achieves the same pollutant reduction at lower cost will have higher net benefits.
- Some alternative approaches may produce additional benefits.
- The distribution of costs and benefits across parties may differ across implementation strategies.
- The FIIAC has not examined specific costs and benefits of alternative strategies, but some may produce higher net benefits than end-of-pipe treatment alone.



## Summary & Caveats

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- No benefits study has been commissioned.
- The amount and type of benefits are dependent on the extent that a higher FCR actually reduces pollutant levels.
- Strategies that reduce pollutant levels more quickly will have higher benefits.

# More Summary & Caveats

- Strategies that achieve more pollutant reductions will have higher benefits.
- Strategies with a greater certainty of achieving pollutant reductions will have more benefits.
- Only with consideration of both benefits and costs can the economic effects be known and can optimal economic outcomes be achieved.