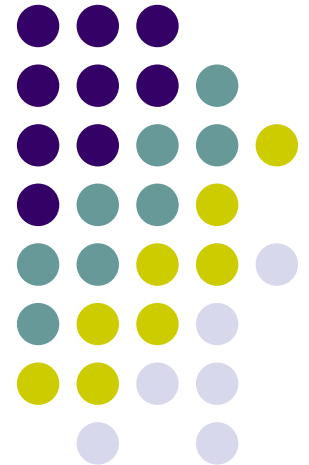
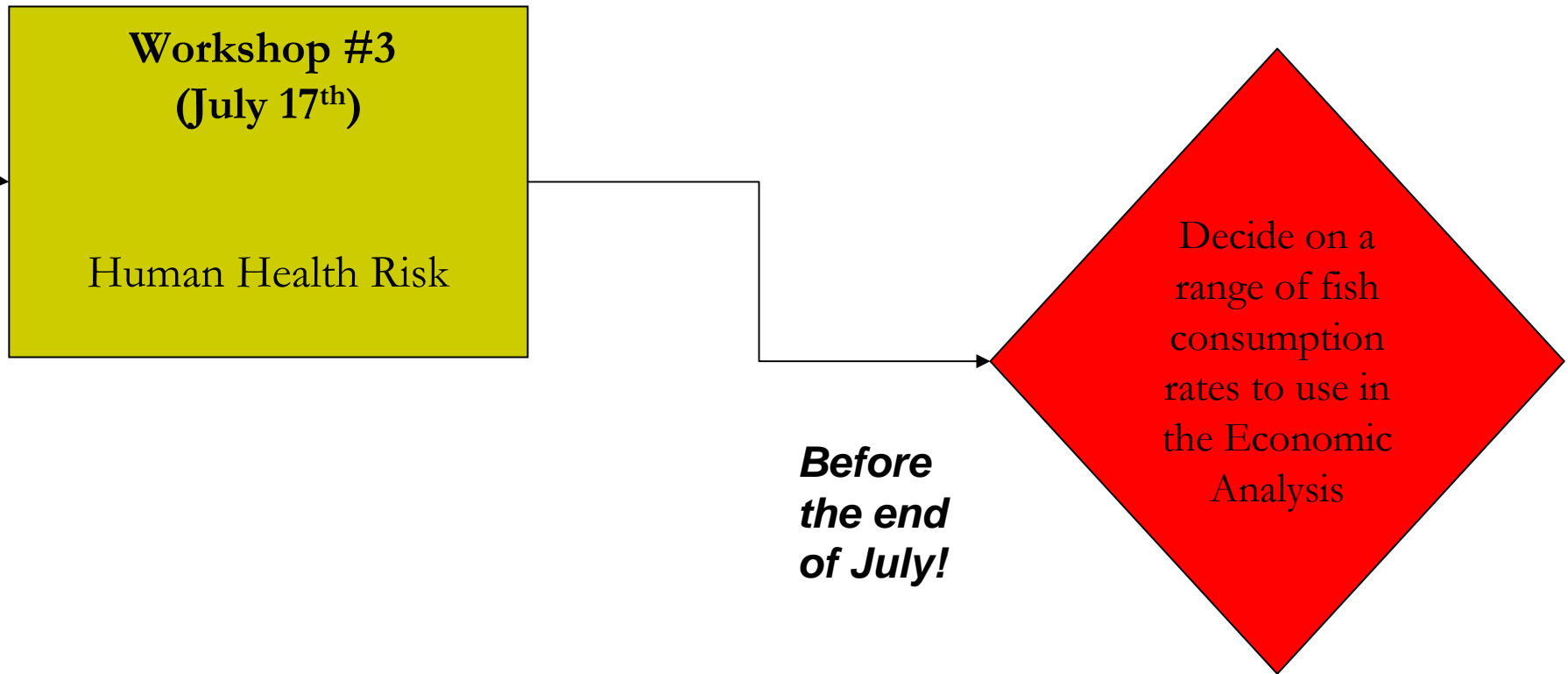


Economic Analysis

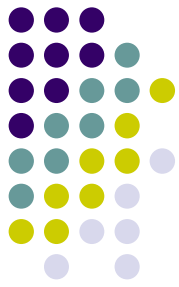
Jordan Palmeri
Oregon DEQ



Project Flow Chart



Why are we doing an economic analysis?



- Required by State Law
 - Oregon Revised Statutes Chapter 183



What's required?



- **Determine Fiscal and Economic Impact to:**
 - General Public
 - Small Businesses
 - Large Businesses
 - Local government
 - State agencies
 - DEQ

How are we using the results?



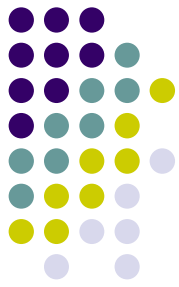
RESULTS



a range of different costs related to implementing different fish consumption rates which are associated with different sets of water quality criteria

- Using results...
 - NOT to set limits on what protecting human health is worth.....but rather
 - To understand more clearly the implementation costs to help inform what realistic implementation options exist for different sets of criteria
 - A productive implementation discussion is dependent upon the costs to implement

How are we doing it?



- Randomly selected 20 facilities
- Gathering effluent data and facility information
- Run data through a Reasonable Potential Analysis

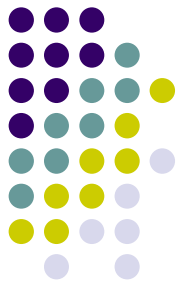


Cost estimates



- Calculate limits on individual facilities
- Calculate cost to meet those limits based on current treatment process of the facility
- Estimate state wide costs based on random sample





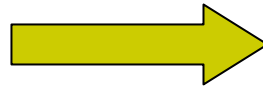
Examples of criteria –

<u>Human Health Criteria Spreadsheet</u>		Water & Organisms (ug/l)	
Fish Consumption Rate →	17.5 g/day	113 g/day	389 g/day
Compound	Criteria becomes more stringent!		
Acenaphthene	6.74E+02	1.43E+02	4.37E+01
Acrolein	1.90E+02	4.15E+01	1.28E+01
Acrylonitrile	5.13E-02	2.41E-02	9.48E-03
Aldrin	4.92E-05	7.77E-06	2.26E-06
Anthracene	8.32E+03	3.90E+03	1.54E+03
Antimony	5.55E+00	5.30E+00	4.69E+00
Arsenic	1.75E-02	5.74E-03	2.09E-03



What about non-point sources?

- Forestry
- Agriculture
- Urban areas



Use Best Management Practices (BMPs) to comply with water quality standards

Evaluating the economic impact to non-point sources is a difficult task since DEQ does not have direct regulatory authority over certain nonpoint sources.

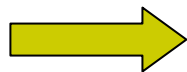
The planning team is still working out the details of this part of the analysis and it will be dependent upon available water quality data.

What about human health benefits?



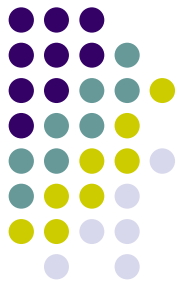
- Many different types of economic analyses
 - State law requires a cost analysis, **not** a benefit analysis
 - A cost vs. benefit analysis would not be appropriate for this process

Cost Analysis



- You can calculate impacts based existing data
- Known market costs for treating water
- We're looking at state-wide costs

Human Health Benefits Analysis



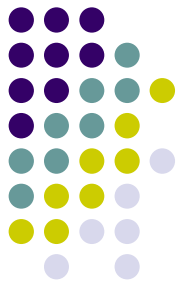
- Who is eating the fish?
- Where were the fish caught?
- How much fish are they eating
- What types fish are being eaten?
- What is the risk of eating those fish? (baseline risk assessment)
- Calculate potential load reduction at the source
 - Are these the risk driving chemicals?
 - Are they the local sources impacting local fish and local consumption?
- How will the source reductions translate to reductions in fish tissue?
- Calculate the decreased risk to human health
- Place a monetary value on the increased human health

Summary of Human Health Benefits Analysis



- Human Health benefit analysis is still on the table
- We need to wait to understand what the pollutant load reductions are before we can make a determination of whether a human health benefits analysis is appropriate
- It would be independent of the cost analysis and would be area specific

Why are we telling you all this?



- We'd like feedback on what range of fish consumption rates should be used in the economic analysis
 - We will probably choose 4 different rates for consideration
- How do you provide feedback?
 - Send written comments to: Jordan Palmeri (Oregon DEQ)

palmeri.jordan@deq.state.or.us