

# Pesticides, endangered salmon and us: hope for the future?

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# Outline

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- ❑ Pesticides/salmon/endangered species act lawsuit – an update
  - ❑ Body burden/human impact issues
  - ❑ Behavior change messages
  - ❑ The future
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# Washington Toxics Coalition et al. vs. EPA

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- ❑ NGOs (enviro + fishing groups) sued EPA for violating the Endangered Species Act
  - ❑ Issue is lack of consultation between EPA and fisheries agencies regarding pesticide registrations
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# WTC et al. vs. EPA

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- ❑ Listed fish – Chinook salmon, coho salmon, chum salmon, sockeye salmon, steelhead trout – cover much of the West Coast



# California Chinook



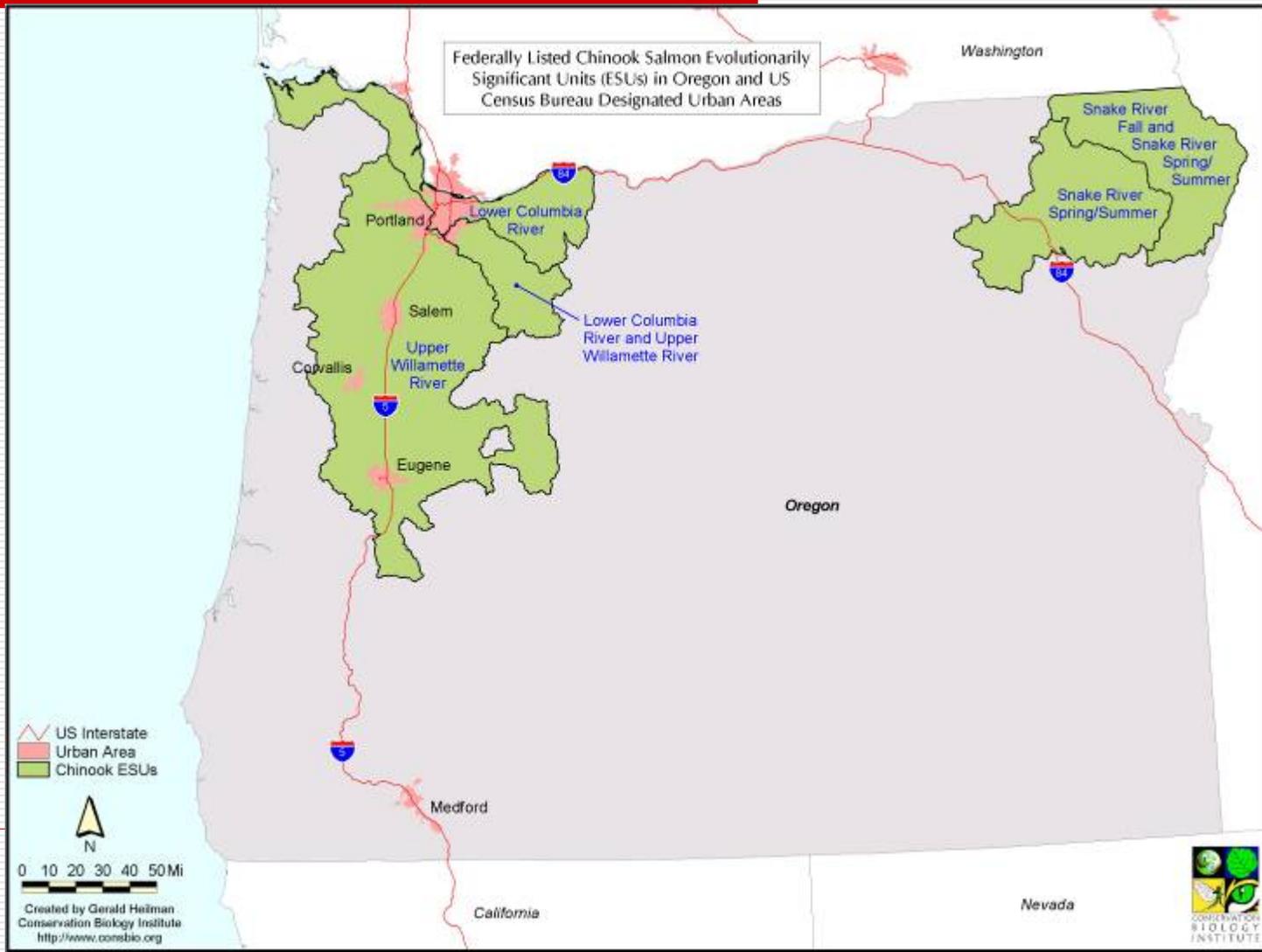
# California coho



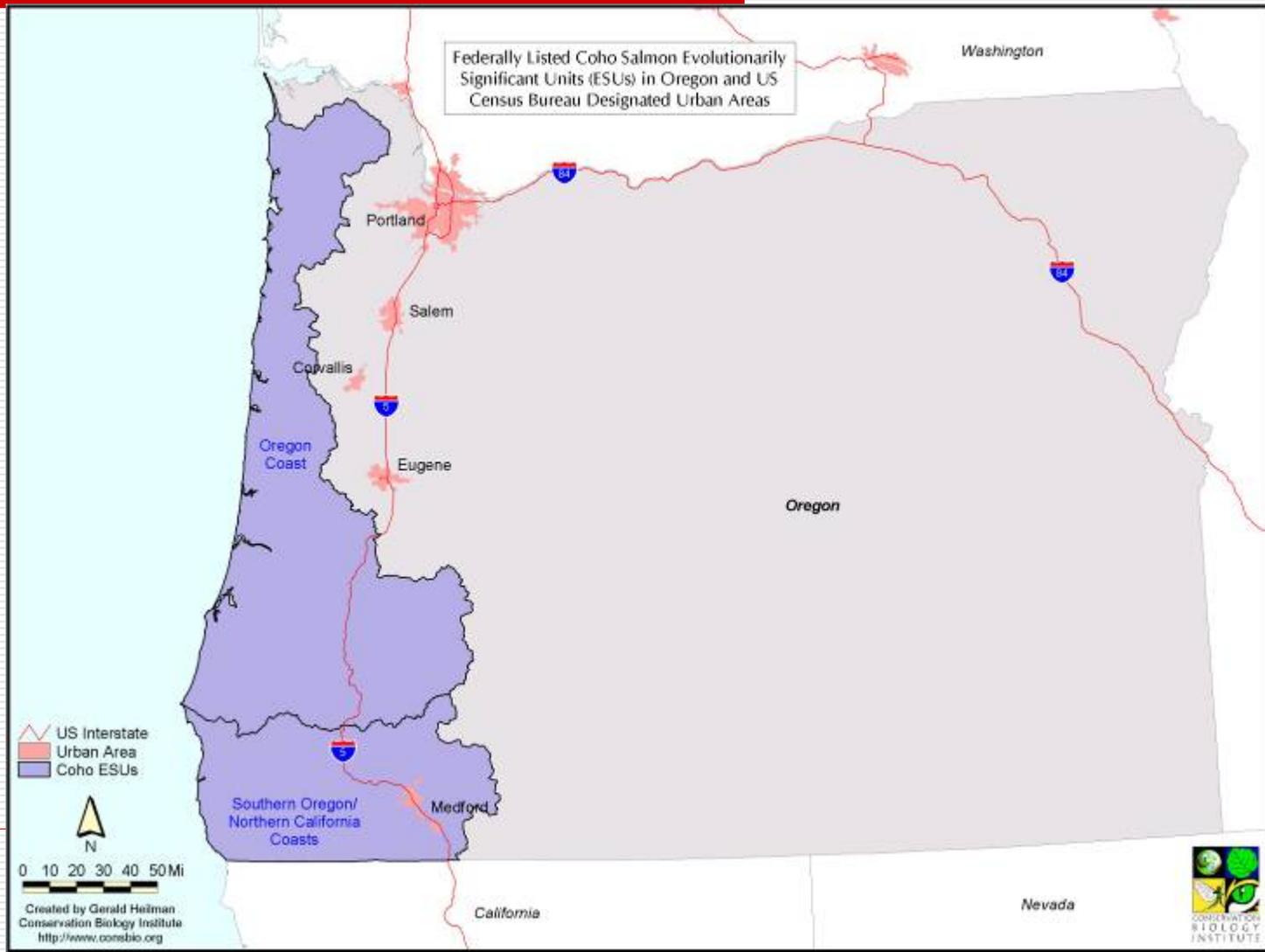
# California steelhead



# Oregon Chinook

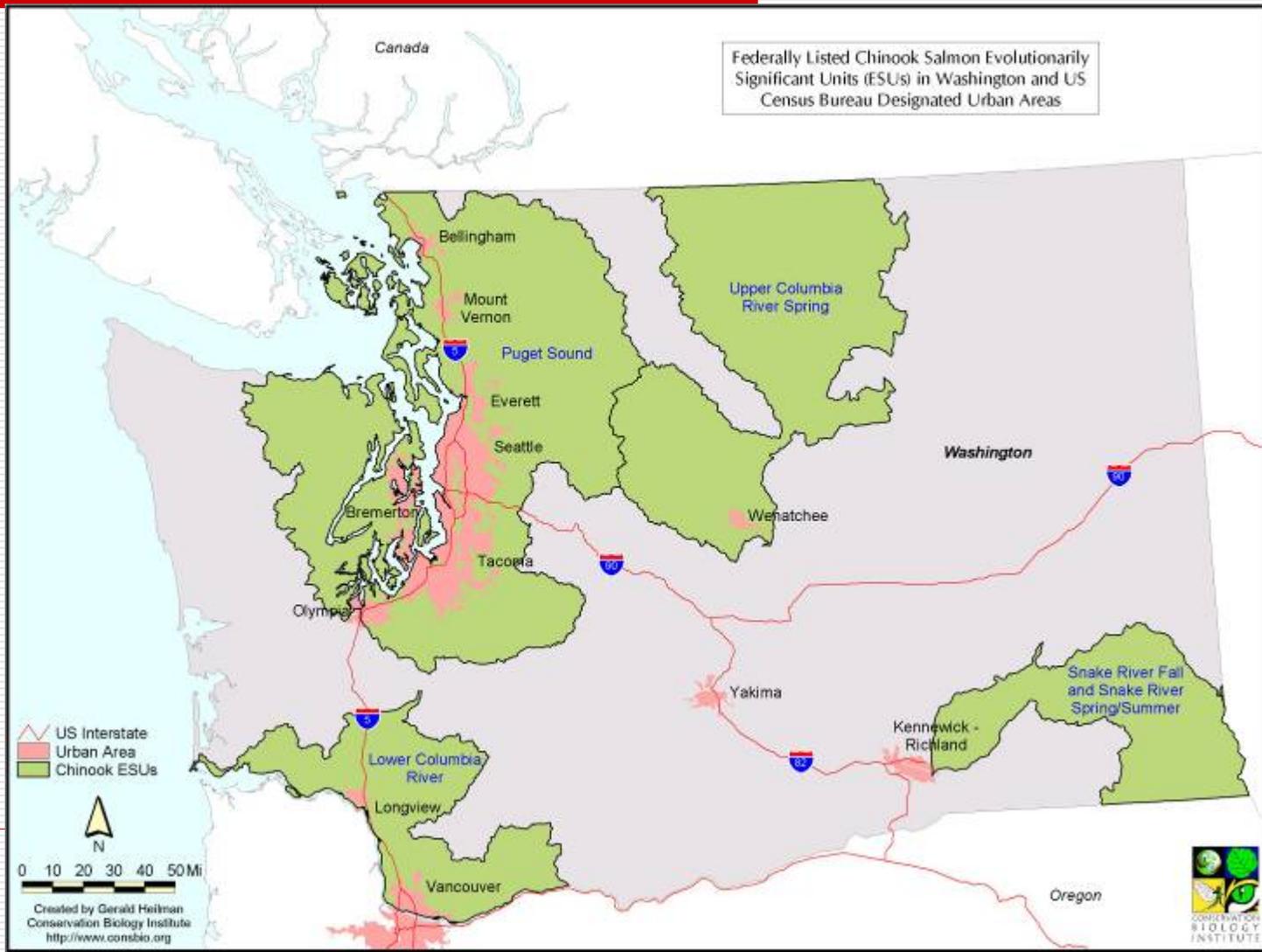


# Oregon coho

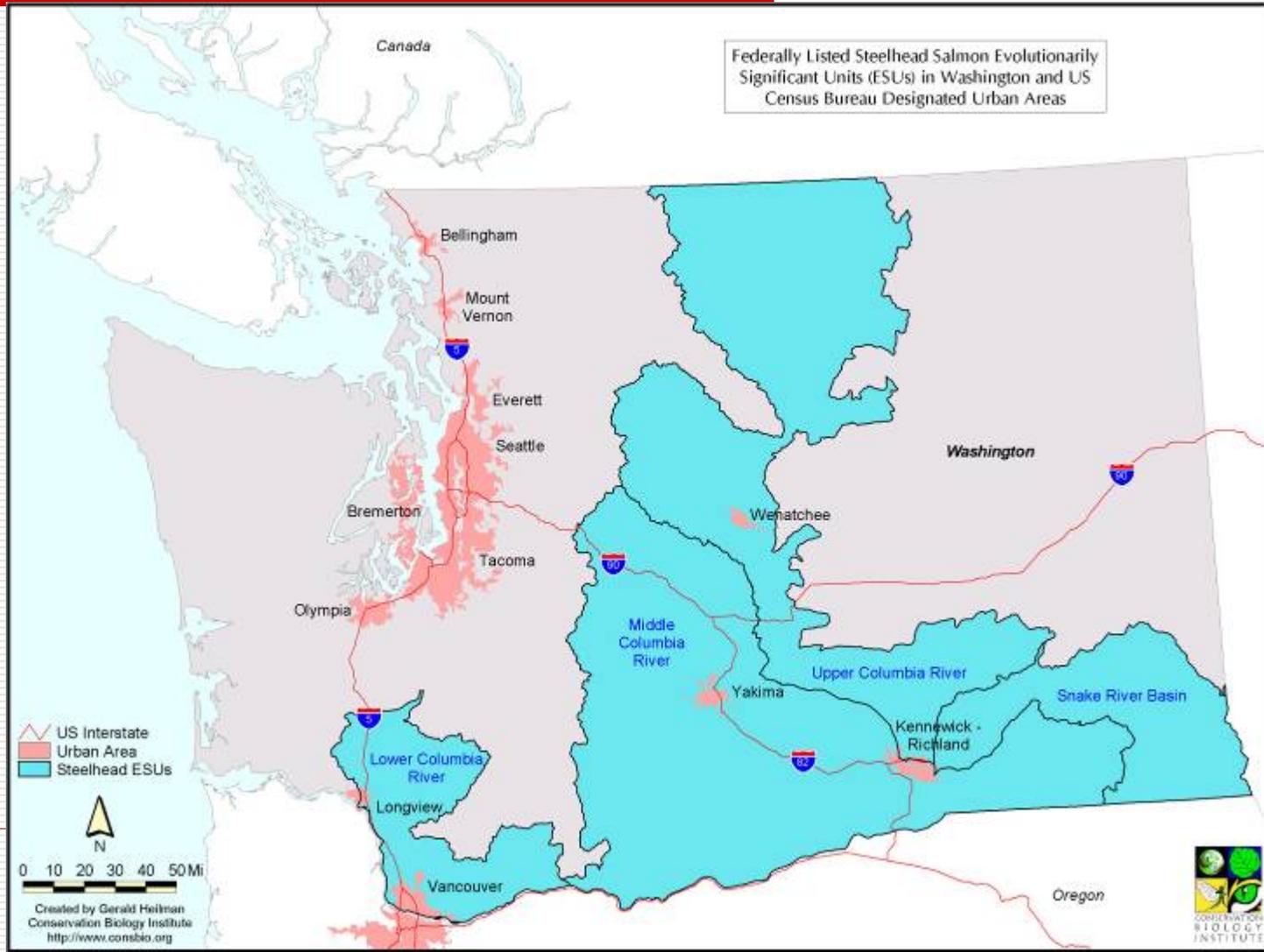




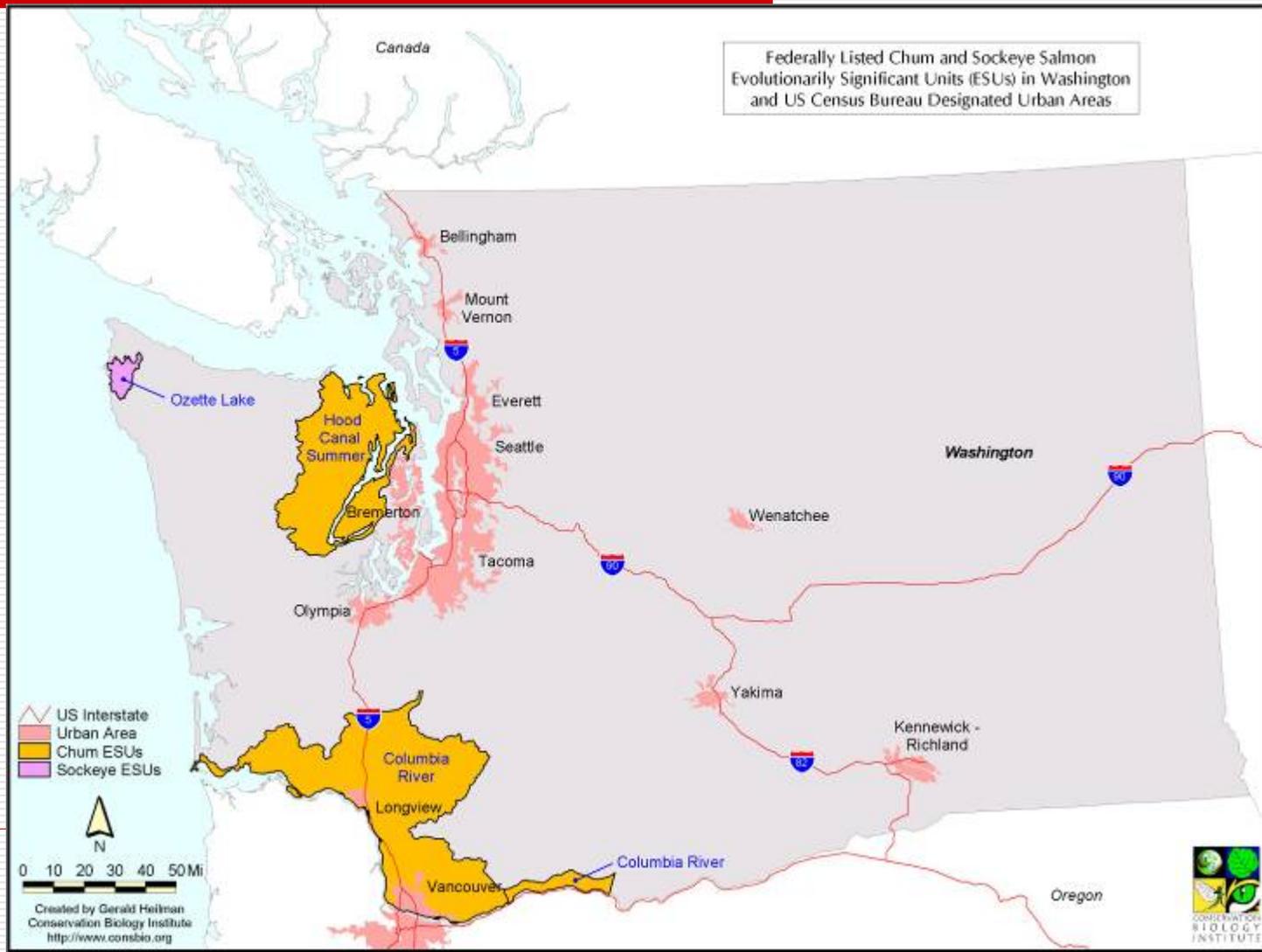
# Washington Chinook



# Washington steelhead



# Washington chum & sockeye



# WTC et al. vs. EPA

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- 54 pesticides included in case:
  - Acephate, alachlor, atrazine, azinphos-methyl, bensulide, bentazon, bromoxynil, captan, carbaryl, carbofuran, chlorothalonil, chlorpyrifos, coumaphos, 2,4-D, diazinon, dicamba, dichlobenil, 1,3-dichloropropene, diflubenzuron, dimethoate, disulfoton, diuron, ...
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# WTC et al. vs. EPA

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- 54 pesticides (continued):
  - ... ethoprop, fenamiphos, fenbutatin-oxide, iprodione, lindane, linuron, malathion, methamidophos, methidathion, methomyl, methyl parathion, metolachlor, metribuzin, molinate, naled, norflurazon, oryzalin, oxyfluorfen, paraquat dichloride, pebulate, pendimethalin, ...
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# WTC et al. vs. EPA

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- ❑ 54 pesticides (continued):
  - ❑ ... phorate, phosmet, prometryn, propargite, simazine, tebuthiuron, terbacil, thiobencarb, thiodicarb, triclopyr TEA, triclopyr BEE, trifluralin.
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# WTC et al. vs. EPA

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- ❑ Federal judge found (in July 2002) that EPA had violated the Endangered Species Act.
  - ❑ Federal judge required EPA to consult with NMFS (NOAA Fisheries) and FWS on potential effects of the 54 pesticides on listed salmon and steelhead in 26 watersheds (“ESUs”) throughout West Coast.
  - ❑ EPA said it would take until 2007 to do so.
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# WTC et al. vs. EPA

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- ❑ Federal judge in 2003 ordered interim buffer zones and retail warnings, until consultations are completed.
  - ❑ Buffer zones: 20 yards ground, 100 yards aerial, for all salmon-bearing waters.
  - ❑ Retail, point-of-sale warning required for seven pesticides found in urban areas: carbaryl, 2,4-D, diazinon, diuron, malathion, triclopyr BEE, trifluralin.
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# WTC et al. vs. EPA

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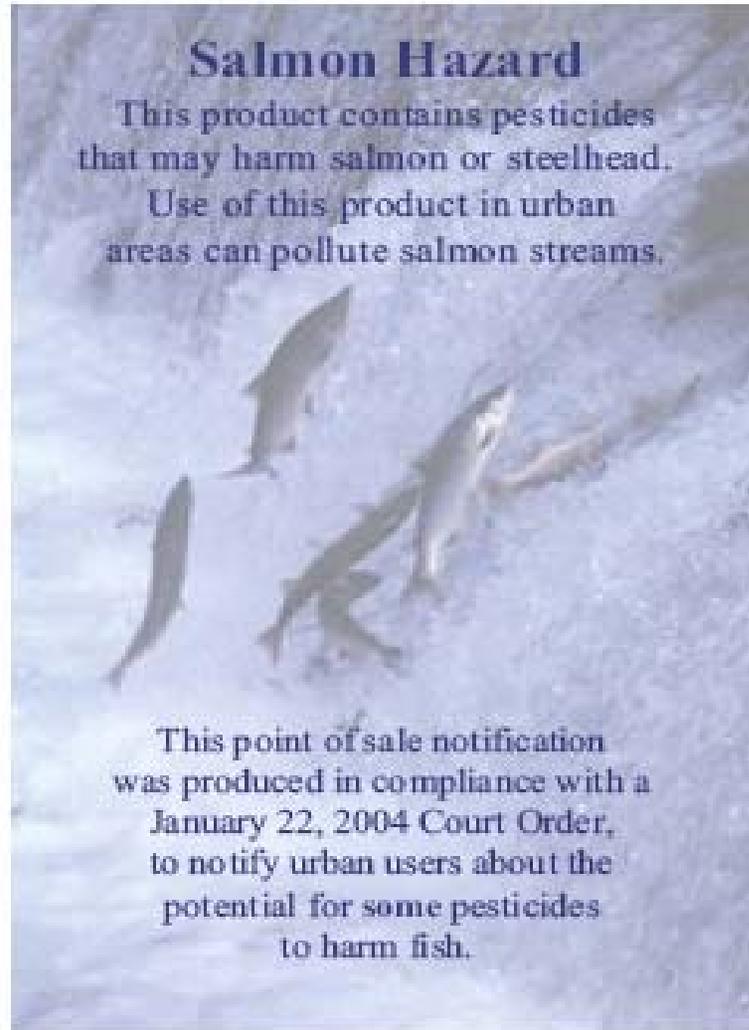
- Retail warning – we had suggested this...



# WTC et al. vs. EPA

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- ❑ Retail warning -- we got this...
- ❑ Compliance in stores has been dismal



# WTC et al. vs. EPA

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## □ Current status:

- EPA determined that 16 of the original list had “no effect” on listed salmon across all watersheds
  - EPA reviewed the remaining 38, and determined “no effect,” “may affect, but not likely to adversely affect,” or “may affect [likely to adversely affect]” for each listed species in each watershed
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# WTC et al. vs. EPA

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- Current status (continued):
    - Consultations are ongoing for the “may affect” pesticides
    - Buffer zones are in effect in watersheds where consultations are still underway
    - Retail sales warning is still required where “may affect” consultations apply, although it has been almost universally ignored.
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# WTC et al. vs. EPA

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- Current status (continued):
    - No consultations on the “may affect” pesticides have been completed.
    - EPA has agreed to re-review its “may affect but not likely to adversely affect” determinations.
    - EPA has tried to get around much of the consultation requirement through a July, 2004 rule change
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# Human impact/body burden

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- University of Washington study (Lu et al., 2001):
    - Tested 96 Seattle-area children for organophosphate metabolites in urine
    - Found at least one OP metabolite in 95 of 96 kids
    - Found higher levels associated with garden use of OPs
    - “We recommend that OP pesticide use be avoided in areas where children are likely to play.”
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# Human impact/body burden

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- University of Washington follow-up study (Curl et al., 2003):
    - Tested 18 kids with organic diets and 21 kids with conventional diets for OP metabolites in urine
    - Found mean levels 9x higher in kids with conventional diets
    - "Consumption of organic produce represents a relatively simple means for parents to reduce their children's exposure to pesticides."
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# Human impact/body burden

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- Ontario College of Family Physicians (Sanborn et al., 2004) report:
    - Found consistent evidence of health risks to patients with exposure to pesticides
    - Children are particularly vulnerable
    - “Avoid exposure to pesticides whenever and wherever possible.”
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# Behavior change messages

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- Raise awareness
- Promote childrens' health
- Promote IPM and natural yard care



Funded by the Local Hazardous Waste Management Program in King County and the Department of Ecology

# Behavior change messages

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# Behavior change messages

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# Behavior change messages

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**Make a healthy,  
beautiful yard...  
without working  
too hard!**

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# The Future

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- ❑ Childrens' health issues
  - ❑ Organic produce/organic gardening
  - ❑ IPM implementation/natural yards
  - ❑ De-registrations/sales' restrictions
  - ❑ Prohibitions for aesthetic-only uses
  - ❑ Newer, safer products/alternatives
  - ❑ Precautionary Principle
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# References

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## □ WTC et al. vs. EPA:

- <http://www.epa.gov/oppfead1/endorsement/wtc/index.html>
- <http://www.earthjustice.org/backgrounder/display.html?ID=86>

## □ Maps:

- <http://www.earthjustice.org/backgrounder/display.html?ID=87>
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# References

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- OP/childrens' health studies:
    - Lu et al. (2001) "Biological monitoring survey of organophosphorus pesticide exposure among preschool children in the Seattle metropolitan area." *Environ. Health Perspectives* 109(3): 299-303.
    - Curl et al. (2003) "Organophosphorus pesticide exposure of urban and suburban pre-school children with organic and conventional diets." *Environ. Health Perspectives* 111(3):377-382.
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# References (cont'd)

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## □ Health review:

- Sanborn et al. (2004). *Pesticides Literature Review*. Toronto: Ontario College of Family Physicians.
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# Contact

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