Pesticide Monitoring in Surface Waters of the Karuk and Hupa Ancestral Territories

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Klamath

Outline

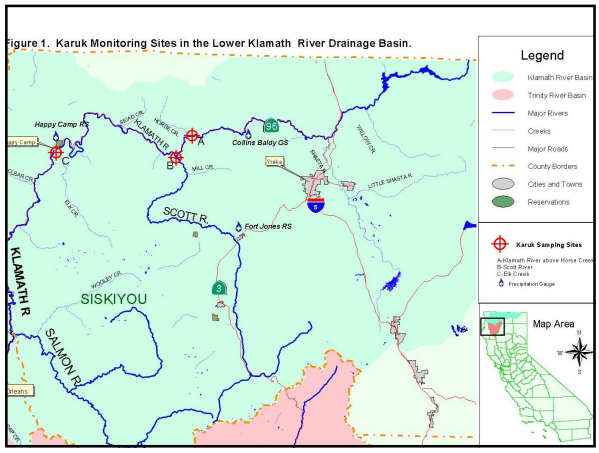
- Introduction
- Sampling Sites
- Sampling Methods
- Pesticides Analyzed
- Pesticide Use Pattern
- Results and Conclusions

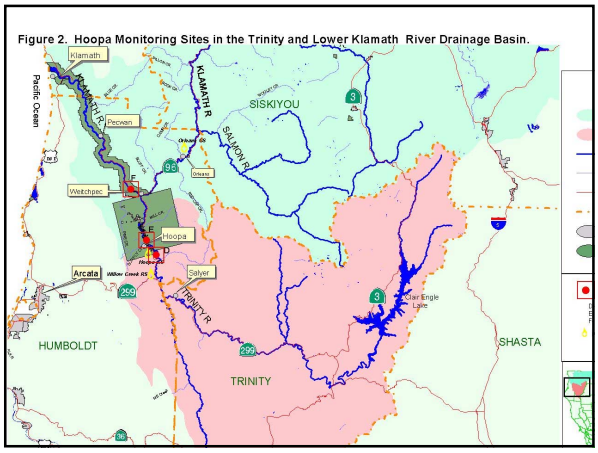
Introduction

- Tribal Consultation & Field Visits
- Site Selection
  - Likelihood of detects,
  - Ecological & human importance
- Pesticide Selection
  - Highest uses
  - Highest runoff potential

Sampling Sites

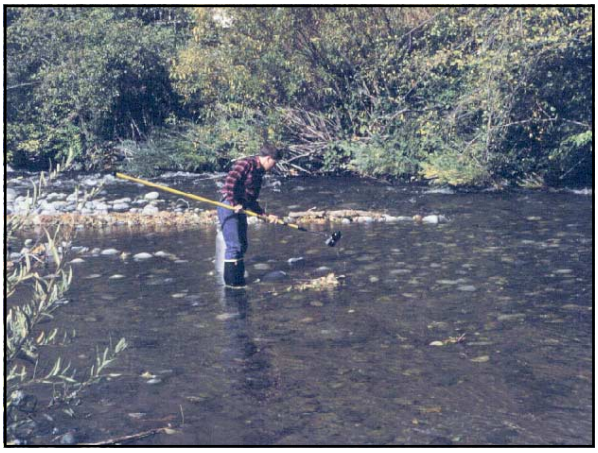
- Karuk
  - Elk Creek
  - Klamath @ Horse Creek Bridge
  - Scott River @ Hwy 96
- Hupa
  - Pine Creek
  - Supply Creek
  - Trinity River @ Tish Tang





Sampling Methods

- Equal Width Increment
- Grab
- Sample Splitting
- Water Quality Parameters
  - Temperature
  - pH
  - Dissolved Oxygen
  - Electrical Conductivity



Pesticides Analyzed

- Insecticides (19)
- Herbicides (13)

Insecticides (19)

Organophosphates

azinphos-methyl, chlorpyrifos, DDVP, diazinon, dimethoate, ethoprop, fonofos,

malathion, methidathion, methyl parathion,

phosalone, phosmet, phorate

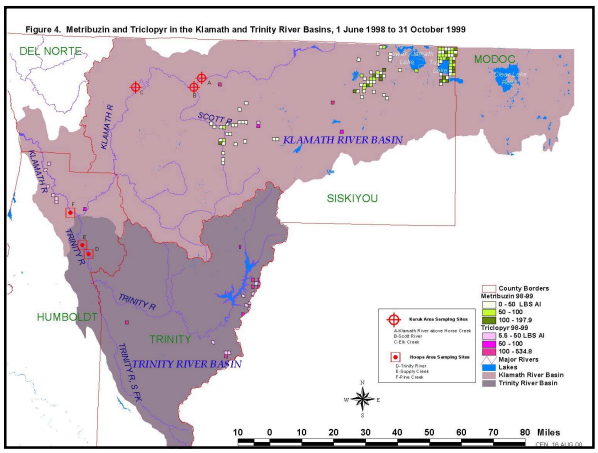
Carbamates

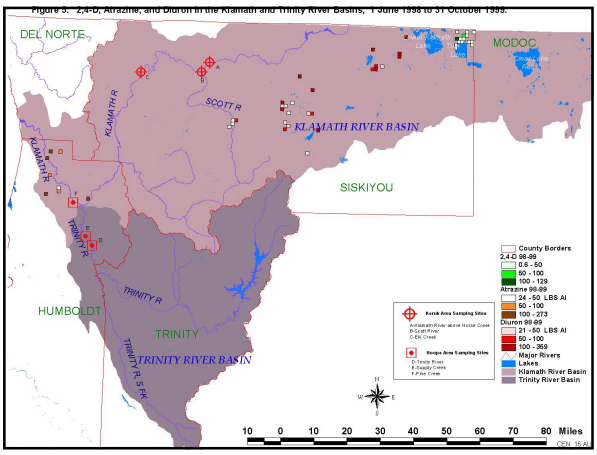
aldicarb, carbaryl, carbofuran, methiocarb,

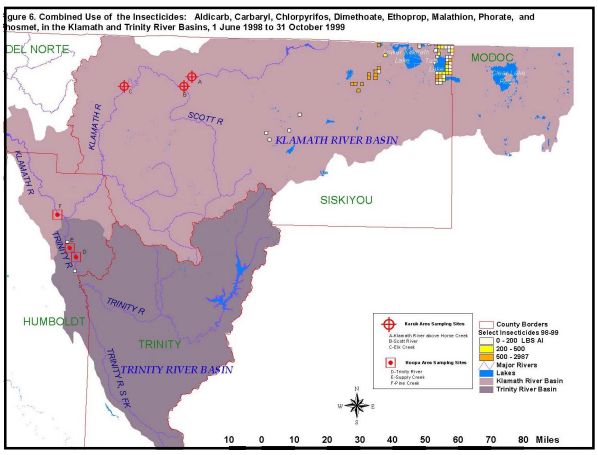
methomyl, oxamyl

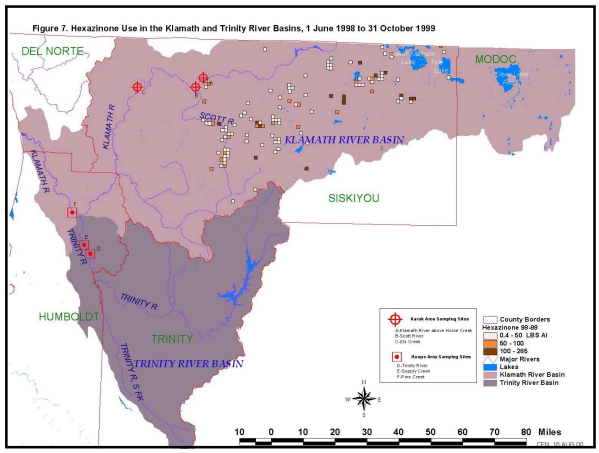
Herbicides (13)

- Phenoxys
  - 2,4-D, MCPA, triclopyr
- Triazines, Uracil, Ureas
  - atrazine, bromacil, diuron, cyanazine, hexazinone, metribuzin, prometon, prometryn, simazine
- Mics.
  - glyphosate









Sampling Frequency

- Dry Conditions
  - September 1998
- Storm Runoff Events
  - October 1998, 1999
- Irrigation Runoff (End of Heaviest Use Period)
  - June 1999

Results & Conclusions

- 108 + 48 water samples analyzed
- 4 sampling periods
- 40,631 pounds AI applied
- Rainfalls
  - Hupa 70.45 inches
  - Karuk 30.08 inches
- 32 insecticides & herbicides analyzed
- No Herbicides or Insecticides Detected
  - Detection levels at 0.04 to 2.0 ppb

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