

# Clean Water Act (CWA), NPDES, TMDL, WQS, and Many More Acronyms from H.E.L.L., etc.



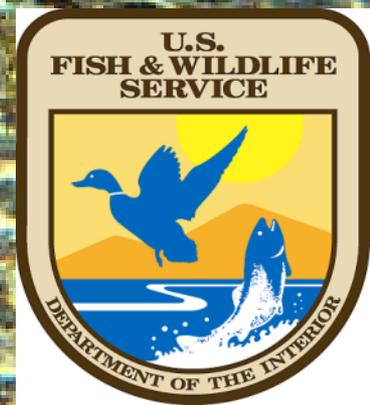
Jay Davis – U.S. Fish & Wildlife Service

ECS 3119 – Pesticides and Fish and Wildlife Resources

Skamania Lodge – Stevenson, WA

June 27 – July 1, 2011

*Photo by Andrew Hendry (NOAA)*



# Clean Water Act (CWA a.k.a. Federal Water Pollution Control Act Amendments of 1972)

- Objective- To restore and maintain the chemical, physical, and biological integrity of the Nation's waters...and where attainable, to achieve a level of water quality that provides for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water (fishable/swimmable/drinkable waters of the U.S.).
- Usually through Water Quality Standards (WQS)
  - WQS can be numeric or narrative

EPA's Water Quality Standards Academy

<http://www.epa.gov/ost/standards/academy.html>

# Water Quality Standards

- Levels that must be met in surface waters to protect public health, fish and wildlife
- Section 304(a) provides guidance to states and tribes in adopting WQS
- EPA approves (or disapproves) new and revised standards

# Components of WQS

- Designated uses (water supply, agriculture, recreation, aquatic life – existing and future uses)
- Criteria (protect those designated uses)
  - Numeric or narrative
- Antidegradation policy (maintain & protect existing uses)
- Other general policies

# Aquatic Life Criteria

Indicate a concentration of a chemical that can adversely affect aquatic life (or aquatic dependent life)

Section 304(a)(1) of the Clean Water Act requires EPA to develop criteria for water quality that accurately reflects the latest scientific knowledge. These criteria are based solely on data and scientific judgments on pollutant concentrations and environmental or human health effects. Criteria are developed for the protection of aquatic life as well as for human health and are recommendations that serve as guidance to states and tribes.

# Aquatic Life Criteria (ALC)

- ALC – are designed to protect all aquatic organisms, including plants and animals.
- 4 Types for any one chemical:
  - Saltwater acute & chronic
  - Freshwater acute and chronic
- Contain:
  - Concentration level (magnitude)
  - Period of time for averaging (duration)
  - Frequency

# ALC Example

- Generic: Freshwater aquatic life and their uses should not be affected unacceptably if the #-day average concentration of pesticide X does not exceed # ppb more than once every 3 years on the average (chronic criterion or CCC), and if the 1-hour average concentration does not exceed # ppb (acute criterion or CMC) more than once every three years on average.
- Specific: Saltwater aquatic life and their uses should not be affected unacceptably if the one-hour average concentration of atrazine does not exceed 760 ug/L more than once every three years on the average (acute criterion) and if the thirty-day average concentration of atrazine does not exceed 17 ug/L more than once every three years on the average (chronic criterion).

# Pesticides with ALC

## priority pollutants

- pentachlorophenol
- 4-4'-DDT
- endrin
- toxaphene
- dieldrin
- aldrin
- alpha & beta endosulfan
- heptachlor & heptachlor epoxide
- chlordane
- copper sulfate
- Lindane (gamma BHC/hexachlorocyclohexane)

## non-priority pollutant

- diazinon
- chlorpyrifos
- atrazine
- demeton
- malathion
- parathion
- sulfide-hydrogen sulfide
- guthion
- methoxychlor
- tributyltin (TBT)
- mirex

# Aquatic Life Criteria for Selected Pesticides

<u>Pesticide</u>	<u>acute</u>	<u>chronic (in ppb)</u>	
Diazinon			
-freshwater (FW)	0.10	0.10	(draft)
-saltwater (SW)	0.82	0.40	(draft)
Chlorpyrifos (FW)	0.083	0.041	
Chlorpyrifos (SW)	0.011	0.0056	
Malathion(FW & SW)		0.1	
Parathion (FW)	0.065	0.013	
Atrazine (FW)	1500		(draft)
Atrazine (SW)	760	17	(draft)

# States Provisions Under the CWA

## Section 303 – State Authorization

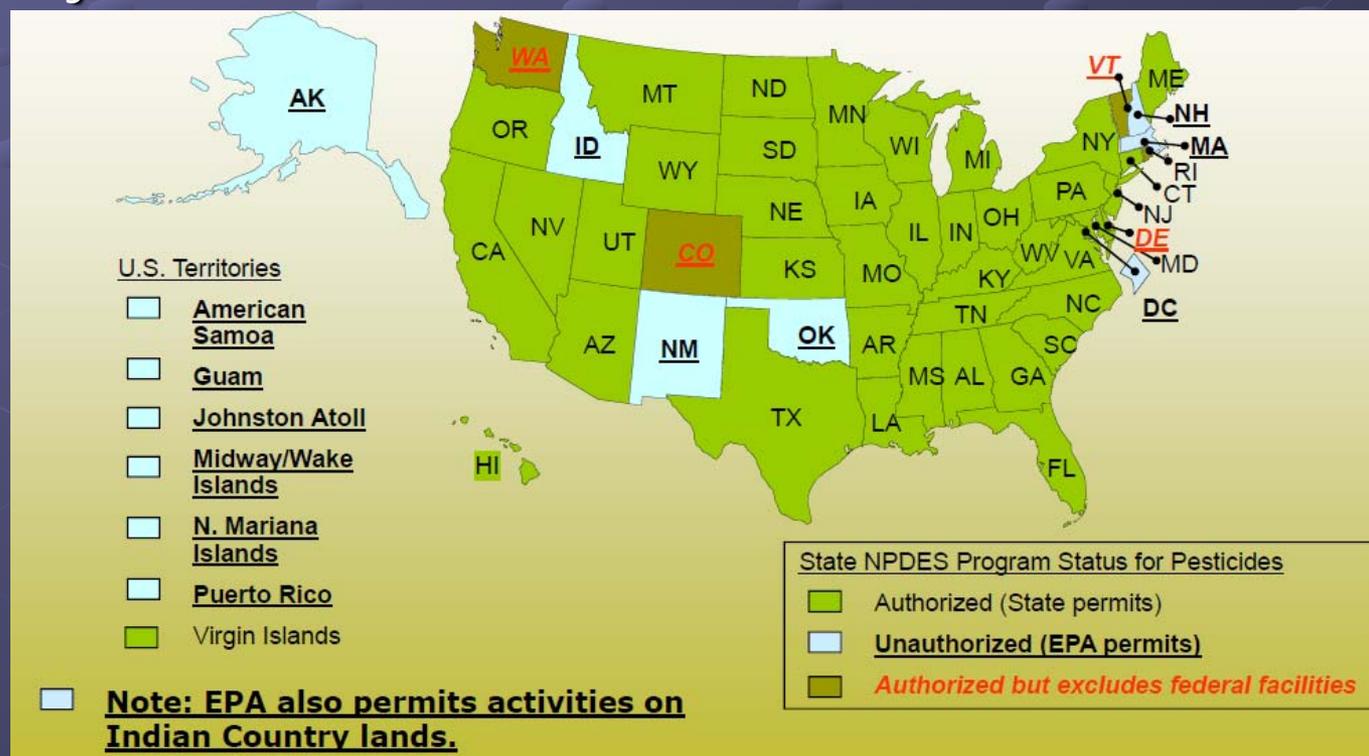
- National Pollutant Discharge Elimination System (NPDES)
- 303(d) List of Impaired and Threatened water bodies
- Total Maximum Daily Loads (TMDL)

# WQS are the foundation for water quality based limits in NPDES permits

- National Pollutant Discharge Elimination System – a point source discharger is required to obtain a permit that limits the pollutant discharged to waters of the state.
- Two type of permits (both require monitoring and reporting)
  - Individual and General
- Regulated entities are divided into two types
  - Industrial and Municipal Sources
- Other components of the NPDES include: storm water, combined sewer overflow and sewage sludge permitting.

# The Clean Water Act states:

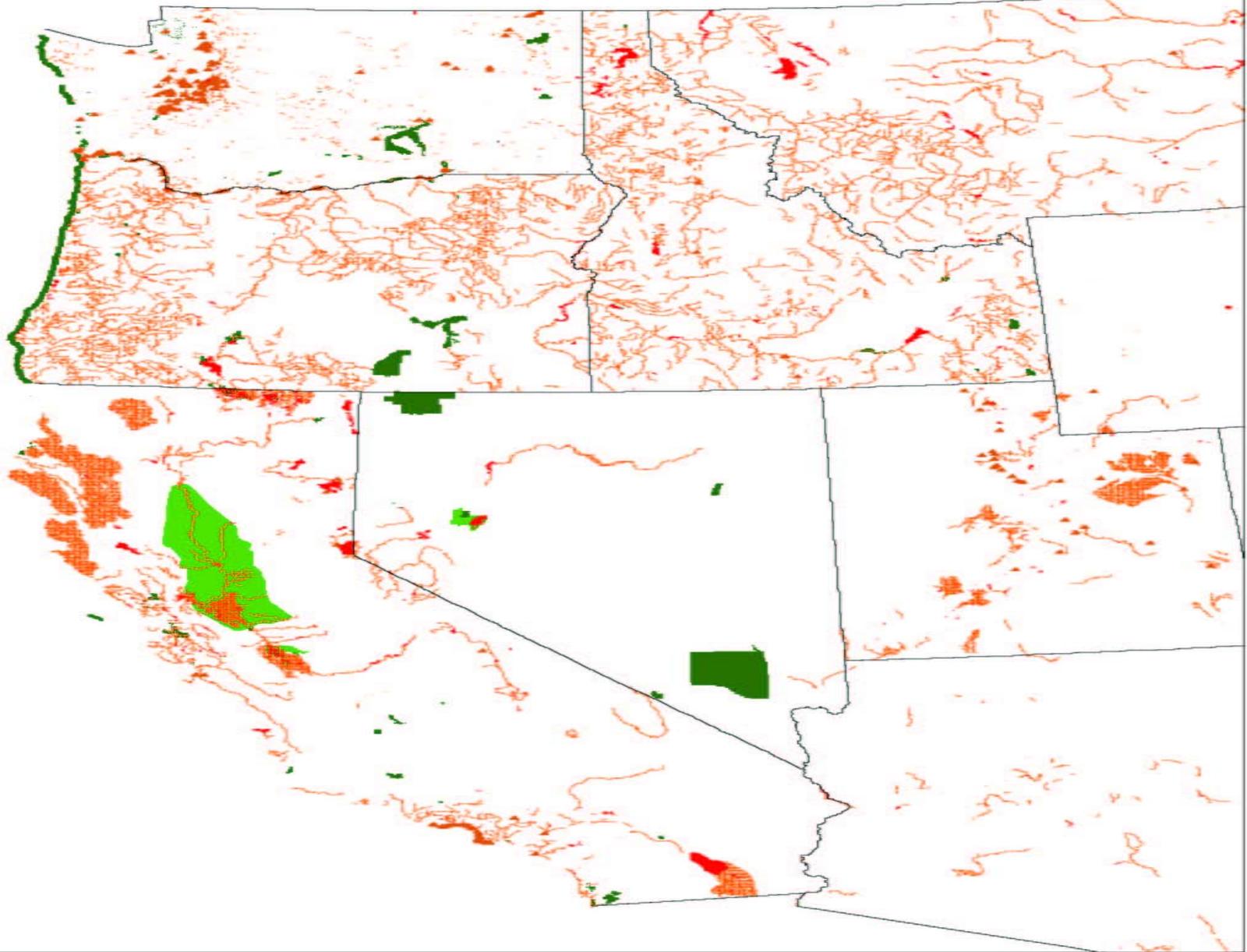
- NPDES Permits are required for all “point” sources, “discharging pollutants” into “waters of the U.S.”
- Delegated Authority:
  - CA, NV, AZ, OR & WA have delegated programs
  - EPA has primacy for ID NPDES Permits



# State Requirements

- 303(d) list - surface waters for which **beneficial uses** (drinking, recreation, aquatic habitat, and industrial uses) are **impaired by pollutants** (i.e. water quality limited waters that fall short of standards and are not expected to improve within the next 2 years)
- Parameters – Temperature, fecal coliform, toxic substances, turbidity (erosion), DO (organic waste), nutrients, sediment or tissue criteria exceedances, etc.

# Western States Impaired Water Bodies 2002



# State Requirements (cont.)

- Total Maximum Daily Loads (TMDLs) –

Waters on the 303(d) list require the development of TMDLs which identify the maximum amount of a “pollutant” to be released into a water body so as not to impair uses (i.e. meet numeric and narrative WQS) and allocate that amount among various sources. One mechanism to reduce loading is through NPDES permits.

# Standards of Protection

ESA	CWA	FIFRA
<ul style="list-style-type: none"><li>-Preclude jeopardy</li><li>-Minimize "take"</li><li>-Conserve the species &amp; their ecosystem</li></ul>	<ul style="list-style-type: none"><li>-Protection of 95% of the taxa...</li><li>- Risk based approach</li></ul>	<ul style="list-style-type: none"><li>-No unreasonable adverse effects on the environment</li><li>- Risk based</li></ul>
<ul style="list-style-type: none"><li>-Best Scientific &amp; Commercial Data Available (benefit of the doubt to species)</li></ul>	<ul style="list-style-type: none"><li>-Promulgated standards and criteria</li></ul>	<ul style="list-style-type: none"><li>-Standard acute and chronic tox. tests &amp; environmental fate data</li></ul>
<ul style="list-style-type: none"><li>-No destruction or adverse modification of critical habitat that affects the species</li></ul>	<ul style="list-style-type: none"><li>-No toxic chemicals in toxic amounts</li></ul>	<ul style="list-style-type: none"><li>-Prevent unreasonable effects on non/off-target species/sites</li></ul>

# Headwaters Inc. & Oregon Natural Resources Council vs. Talent Irrigation District

- History – May 1996 – Talent Irrigation District applied an aquatic herbicide, Magnacide H (a.i. acrolein), to an irrigation canal.
- 92,000 juvenile steelhead trout were killed in a nearby stream - one day later due to a leaking waste gate in an irrigation canal.
- Citizens filed suit to stop the application w/out an NPDES permit

# Key Issues in the CWA vs. FIFRA Battle

- Navigable waters or Waters of the US
- Discharge
- Pollutant
- Point-Source
- FIFRA Label versus CWA Goals

# District Court of Oregon Ruling

- Irrigation Canals are **waters of the U.S.** covered under the CWA
- Acrolein is a **pollutant** since it is acutely toxic to fish and wildlife and was **discharged** from the gate (**point source**)
- However, **no permit is required** because the label, approved and regulated by EPA under FIFRA, did not require the user to acquire a NPDES permit ("further regulation by CWA was unnecessary") BUT recommended the plaintiffs to petition EPA to amend the label to require a permit.

# Appeal

- March 12, 2001 – U.S. 9<sup>th</sup> Circuit Court of Appeals ruled that aquatic applications of pesticides constitute a discharge of pollutants and thus required an NPDES permit under CWA
- Ninth Circuit decision:
  - FIFRA alone is not sufficient – FIFRA labels not protective enough given variable local conditions
  - CWA applicable to TID because they are “tributaries” to natural streams – “waters of US”
- Thus, NPDES permits are required – AK, AZ, CA, HI, ID, MT, NV, OR and WA

<http://laws.findlaw.com/9th/9935373.html>

# WHY??

- A point source pollutant was discharged into the canals which are waters of the U.S. - all hold true
- FIFRA and CWA have different purposes (in 1995 – EPA stated in a public notice that the label’s failure to include the possible need for a permit “does not relieve a producer or user of such products from the requirements of the CWA”
- Appeals court agreed with the finding, however reversed the district courts decision regarding permits.

# Implications

● Dept. of Ecology in WA state has oversight of aquatic pesticides and since 1980 has only required short term water quality modification permits which relied on SEPA & EIS processes.

● NPDES general permits were developed and issued in WA State for aquatic applications aimed at controlling:

- Fish in lakes
- Nuisance plants in lakes and rivers
- Noxious weeds in aquatic habitats
- Mosquito larva
- Burrowing shrimp
- Aquatic plants in irrigation ditches

# Implications (cont.)

## ● General Permits

- Oregon – issued 10 permits for irrigation districts in July 2002 with “good” BMPs and later revoked them in Sept. 2002 based on a Federal District Court Order (NW Environmental Advocates vs. EPA)
- California - Statewide General NPDES for Discharge of Aquatic Pesticides – May 2004
  - <http://www.swrcb.ca.gov/resdec/wqorders/2004/wqo/wqo2004-0009.pdf>
  - Requires BMPs and monitoring
  - ESA “take” is not authorized
  - Some exceptions - no significant environmental effect – hydrilla eradication

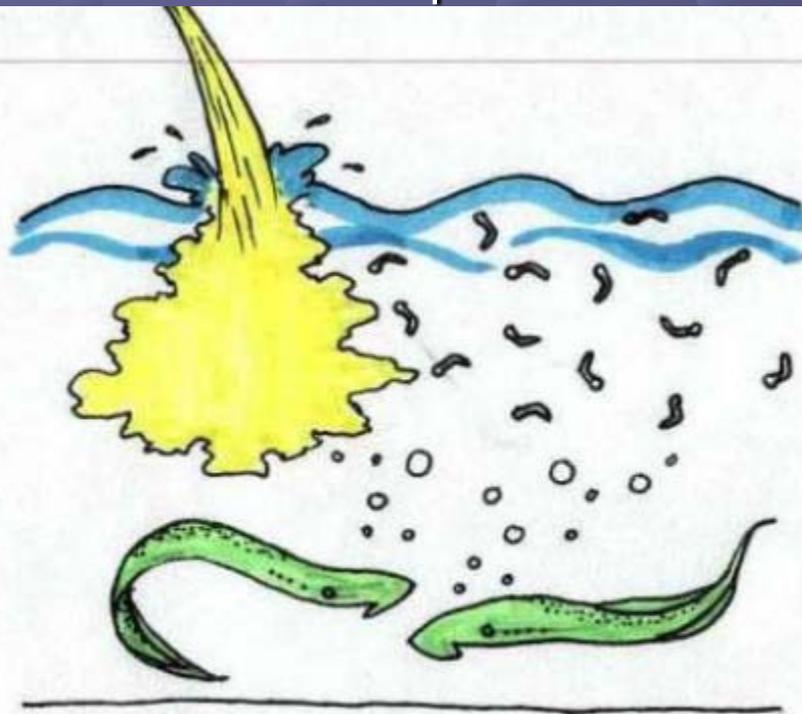
# EPA Interim Statement & Guidance

- EPA has stated in a July 2003 Memo to Regional Administrators that:
- ... despite a federal appeals court ruling that permits are necessary, applying pesticides, if done according to the product's EPA-approved labeling, should be considered exempt from a requirement for a permit under the federal Clean Water Act because it does not constitute a "discharge of a pollutant".
- The memo was issued in response to the U.S. 2<sup>nd</sup> Circuit Court of Appeals ruling that highlighted the need for EPA to articulate a clear interpretation whether permits are required if applications comply with FIFRA requirements (i.e. the label – intended use).

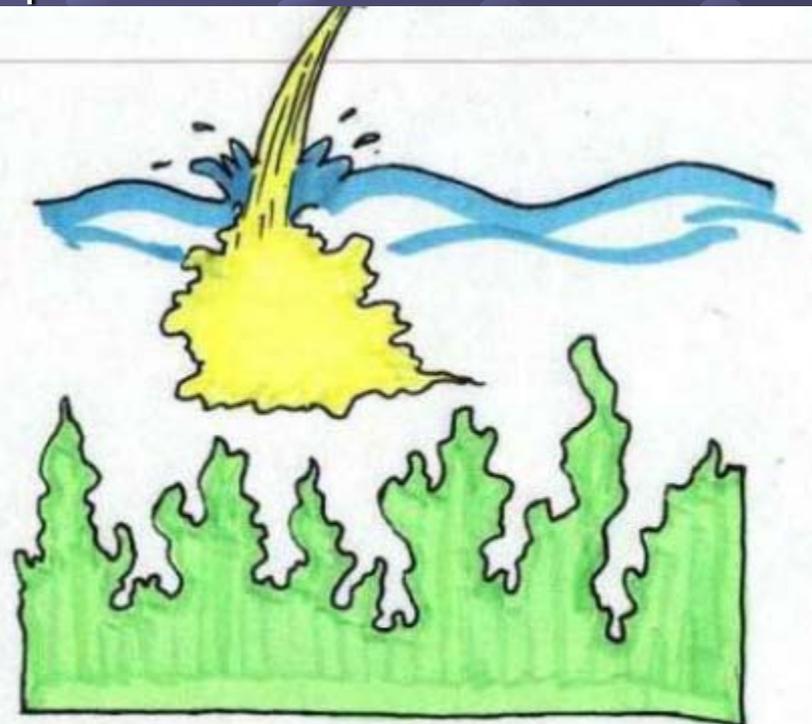
# Basis for EPA's Position

● Not a "discharge" of pollutants into waters of the U.S. under these 2 circumstances:

- 1) "the application of pesticides directly to waters of the U.S. are to control pests such as mosquito larvae and aquatic weeds"

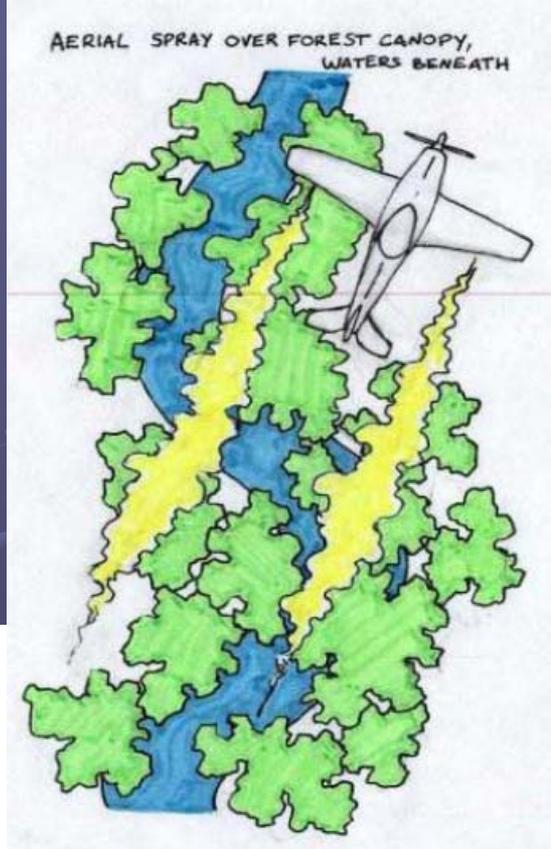
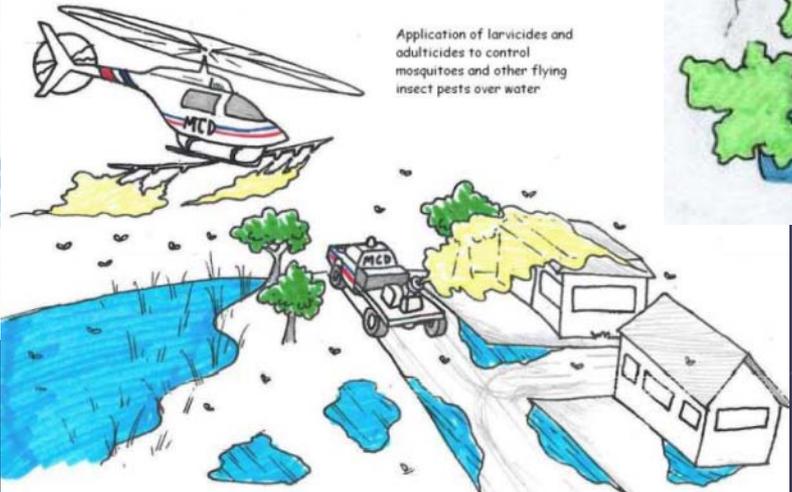
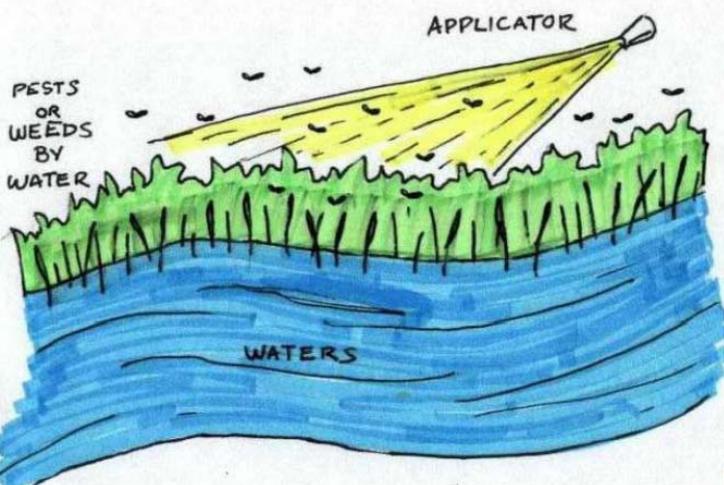


INSECTICIDES AND OTHER AGENTS TO CONTROL  
ANIMAL PESTS SUCH AS MOSQUITO LARVAE  
AND LAMPREY



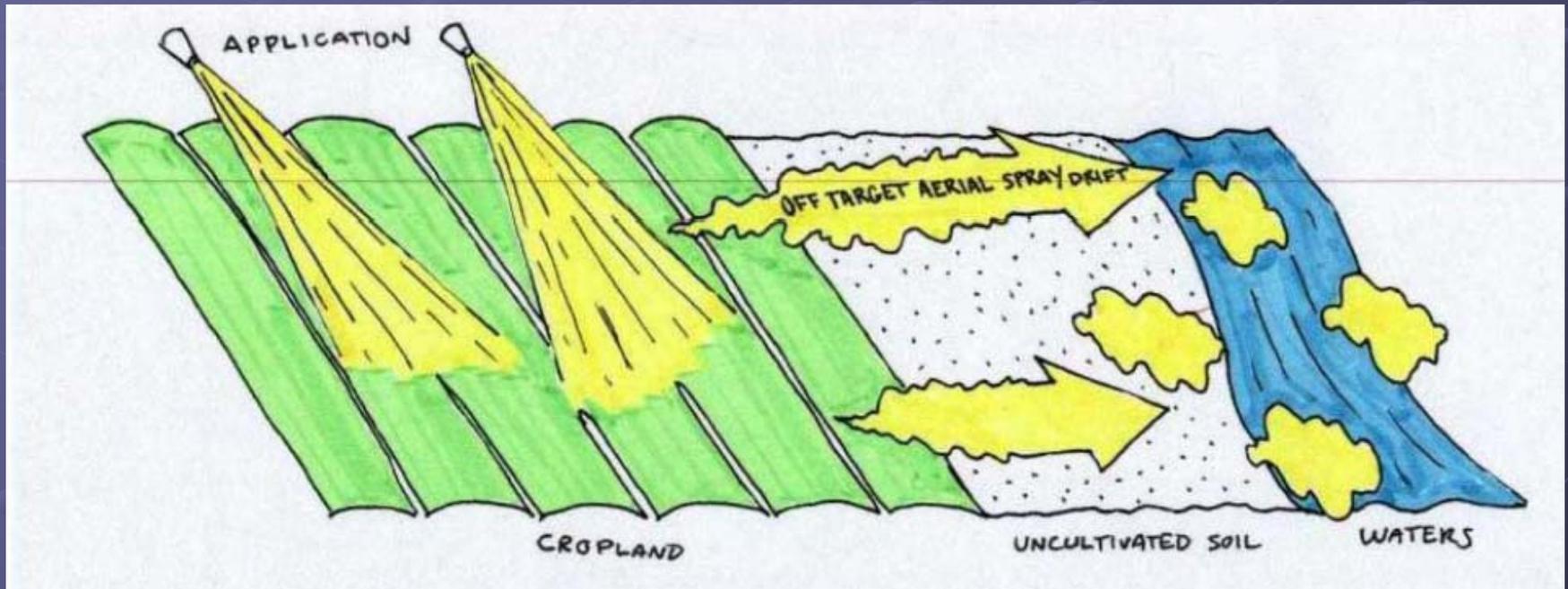
HERBICIDES TO CONTROL AQUATIC WEEDS  
AND ALGAE

- 2) "the application of pesticides to control pests that are present over (and near) waters of the U.S. that result in a portion of the pesticide being deposited to water bodies" (i.e. aerial applications to a forest where water may be present below the tree canopy)



- Also, not a "pollutant" as defined in the CWA if properly applied in accordance with FIFRA label (neither a chemical waste or biological material)

# Not Included in EPA's Stance: Off-Target Spray Drift



# League of Wilderness Defenders vs. Forsgren

- In 2002 the U.S. 9<sup>th</sup> Circuit Court of Appeals in this case ruled against a district court saying that the Forest Service violated the CWA by engaging in un-permitted discharges (the aerial spraying, using a “discrete conveyance”, of the bacterial pesticide – Bt – directly over forests and water bodies to control the outbreak of a moth) since it was a silvicultural point source release (thus needing a permit) and not an agricultural non-point source (don’t need permits) such a run-off.

# EPA's Response Memo of Sept. 3, 2003

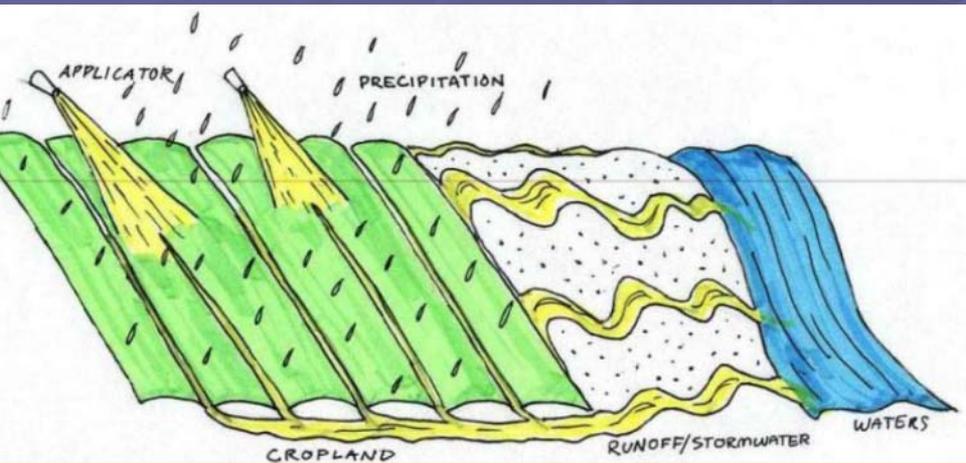
- Believes that the courts "misinterpreted" the regulations because pest control is not one of the 4 point source activities associated with silvicultural operations (permit needed).
- Recommends that outside the 9<sup>th</sup> Circuit Court's jurisdiction users don't acquiesce to the court's decision.
- Will continue to follow its interpretation of the statute NOT requiring permits for silvicultural and fire control operations.
- Recommends within 9<sup>th</sup> Circuit Court's jurisdiction to consider permitting on a case-by-case basis.

# Recent & Pending Actions

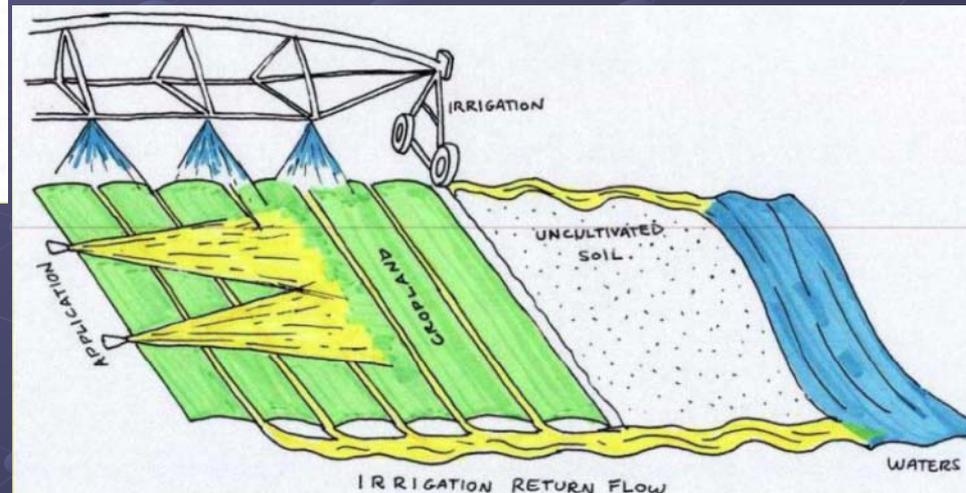
- February 2005 – EPA issued a proposed rule and interpretive statement on application of pesticides to waters of the U.S. in compliance with FIFRA in the Federal Register (follow-up to 8/13/03 release). Rule went final November of 2006, but the 6<sup>th</sup> Circuit Court of Appeals vacated the rule in January 2009.
- Motion Filed to Stay Court Decision in Aquatic Pesticide Application Case: The EPA has decided not to file a petition to seek rehearing in the decision that vacated EPA's Aquatic Pesticides Rule. In this decision, the Court held that CWA permits are required for both chemical & biological pesticide applications that are made in and over, including near, waters of the U.S. that leave a residue or excess pesticide in water.
- Because the EPA recognizes the significant implications of this vacatur on April 9, 2009 they filed a Motion for Stay of the Mandate for a period of two years (until April 2011). EPA estimates that the ruling will affect approximately 365,000 pesticide applicators that perform 5.6 million pesticide applications annually (500 a.i. and ~3700 products).

# Recent & Pending Actions (cont.)

The Stay will allow EPA time to develop, propose, and issue a final NPDES general permit for pesticide applications covered under the decision that will authorize these discharges to waters of the U.S. consistent with the requirements of the CWA. Exemptions:



Agricultural Runoff/Stormwater



Irrigation Return Flow

The draft Pesticide General Permit (PGP) was posted in the Federal Register on June 4, 2010. Final PGP is expected to be issued in Dec. 2010 with time for outreach until permits are required on April 10, 2011.

([www.epa.gov/npdes/pesticides](http://www.epa.gov/npdes/pesticides))

# So.....

- Since the draft permit was issued EPA has conducted outreach, held meetings and webinars, and accepted comments on the draft PGP.
- On March 3, 2011 EPA requested an extension until October 31, 2011 for issuance of the final PGP to: 1.) allow time to engage in ESA consultation and 2.) complete the development of a database to streamline requests for coverage under the general permit. It also allows time for authorized states to finish developing their state permits and to provide additional outreach to stakeholders on pesticide permit requirements.
- Interestingly, on March 2, 2011 a bill, H.R. 872 (Reducing Regulatory Burdens Act of 2011), was introduced to eliminate duplicative permit requirements for pesticide applications. It passed the House on 3/31/11.
  - Amends both CWA and FIFRA to basically say: a permit is not required for the discharge of a registered pesticide from a point source into navigable U.S. waters or the resultant residue of a pesticide from such application.

Stay Tuned ..... Questions?

