

Use of Risk Assessment Information to Determine Treatment Buffer Widths

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Sharing An Approach

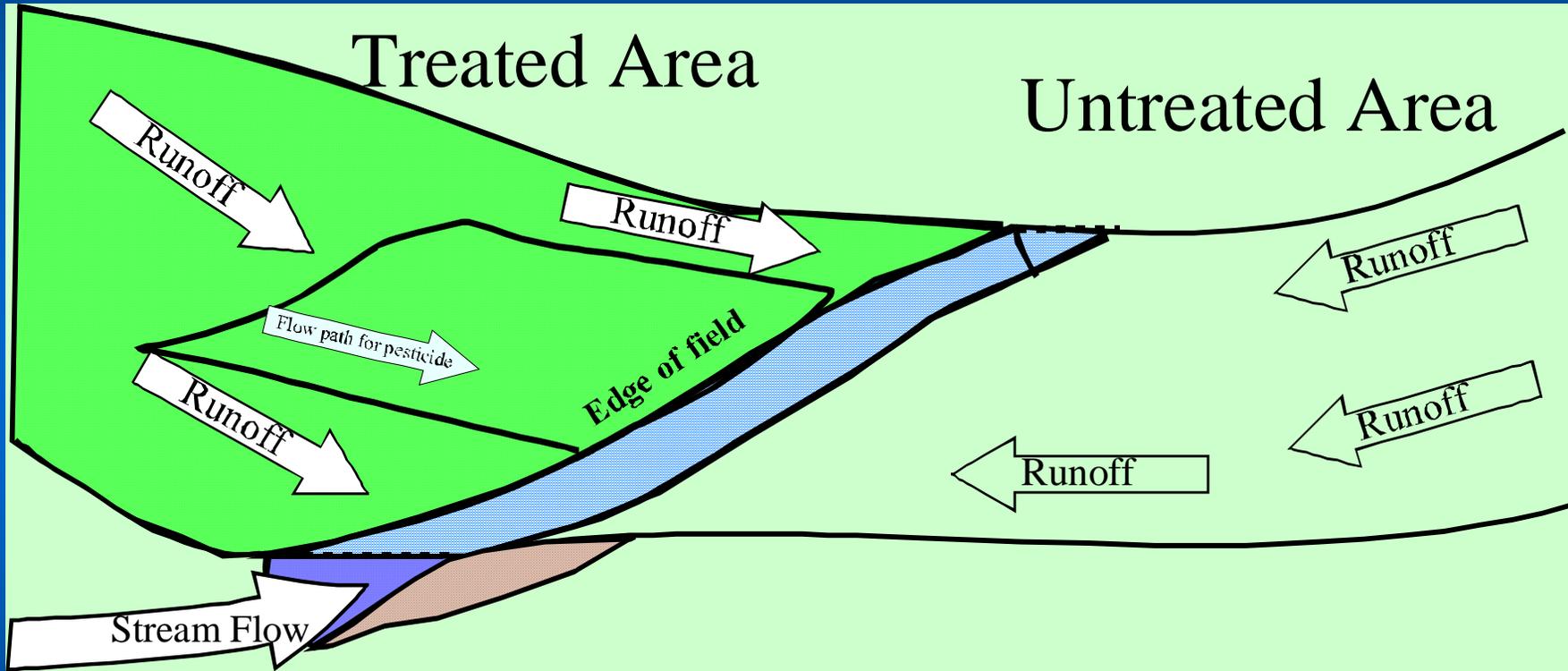
- **Scenario for Ecological Risk Assessments**
- **Levels of Concern for Aquatic Species**
- **Sample Treatment Buffers for Olympic National Forest**

R6 Forest Service Invasive Plant Program Standards

- **Minimize negative effects**
- **Use site-specific conditions to determine formulation, buffers, etc.**
- **Consider aquatic labeled herbicides where herbicide is likely to be delivered to surface waters**

GLEAMS Stream Scenario

$$\Delta \text{ (amount/day)} \div \text{Flow}_{\text{(L/day)}} = \text{Conc} \text{ (amount/L)}$$



Model used to estimate how much herbicide would get in the water.

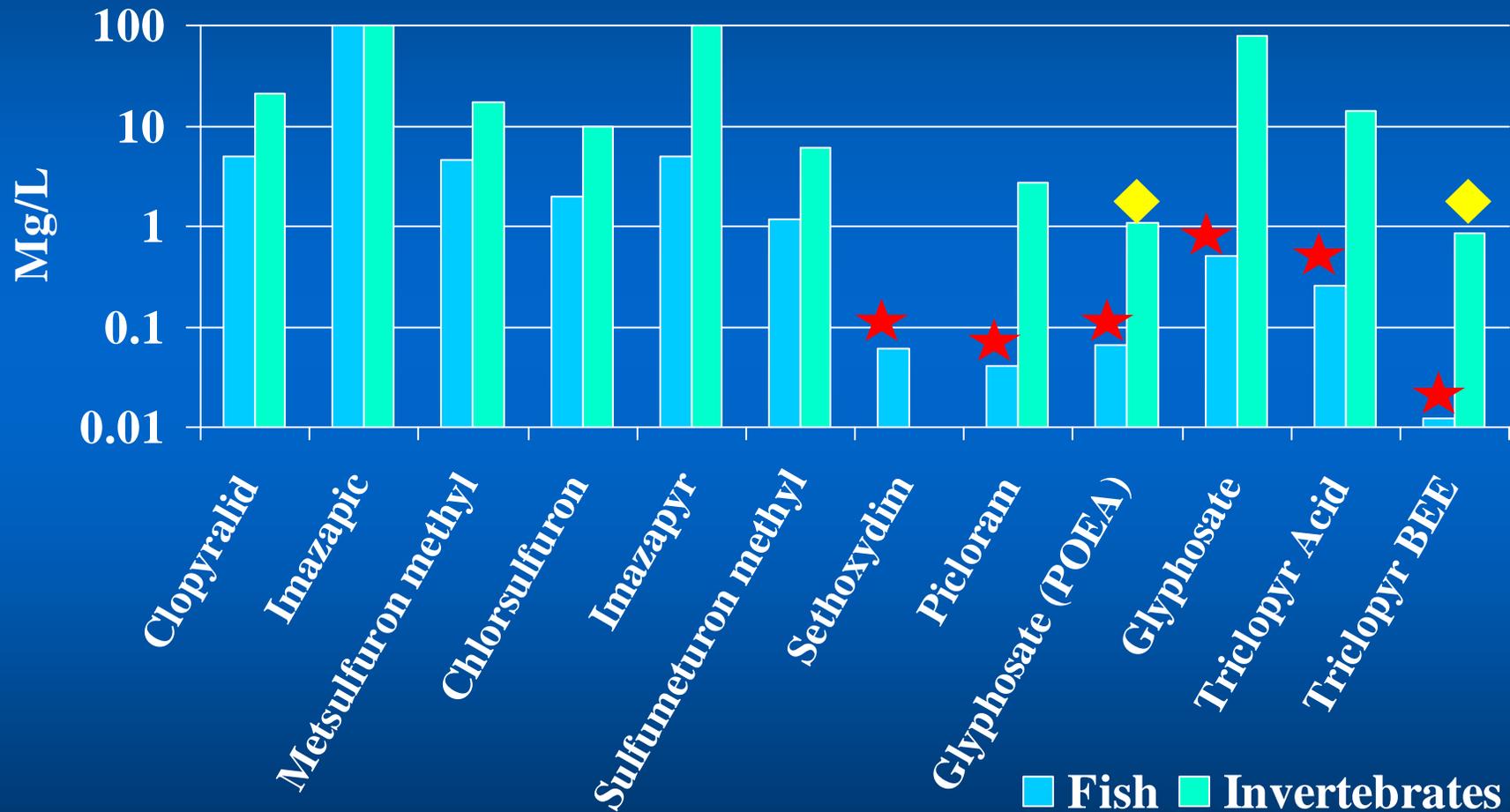
Federally Listed and Proposed Fish Species on Olympic National Forest

- **Puget Sound Steelhead Trout**
- **Puget Sound Chinook**
- **Hood Canal Summer-run Chum**
- **Coastal Puget Sound Steelhead**
- **Coastal Puget Sound Bull Trout**

Varying Levels of Risk

★ Exceeded at high and typical application rates

◆ Exceeded at typical application rate only



Risk Categories

- **Lower Risk**
 - no risk or only a plausible risk to macrophytes
- **Moderate Risk**
 - Plausible risk to algae or invertebrates, plus macrophytes
- **Higher Risk**
 - Plausible risk to fish

Buffers cannot work alone...

- **Type of herbicide and application methods**
- **Only aquatic labeled herbicides permitted where likely to enter water**
- **Project Design Features**
- **Monitoring**

What's out there?

- **Sect. 7 ESA**
 - Buffers ranged from edge of water to 100 ft
- **WA Dept. of Ecology – Emergent Veg**
 - No buffers
- **Status of Knowledge of Best Management Practices Effectiveness (Berg, N. 2004)**

LOCATION LOCATION LOCATION

Herbicide Use Buffers — Aquatic Influence Zone
More Limits on Herbicide Selection And Application Methods

Outside Aquatic Influence Zone
Wider Range of Herbicide Selection and Methods

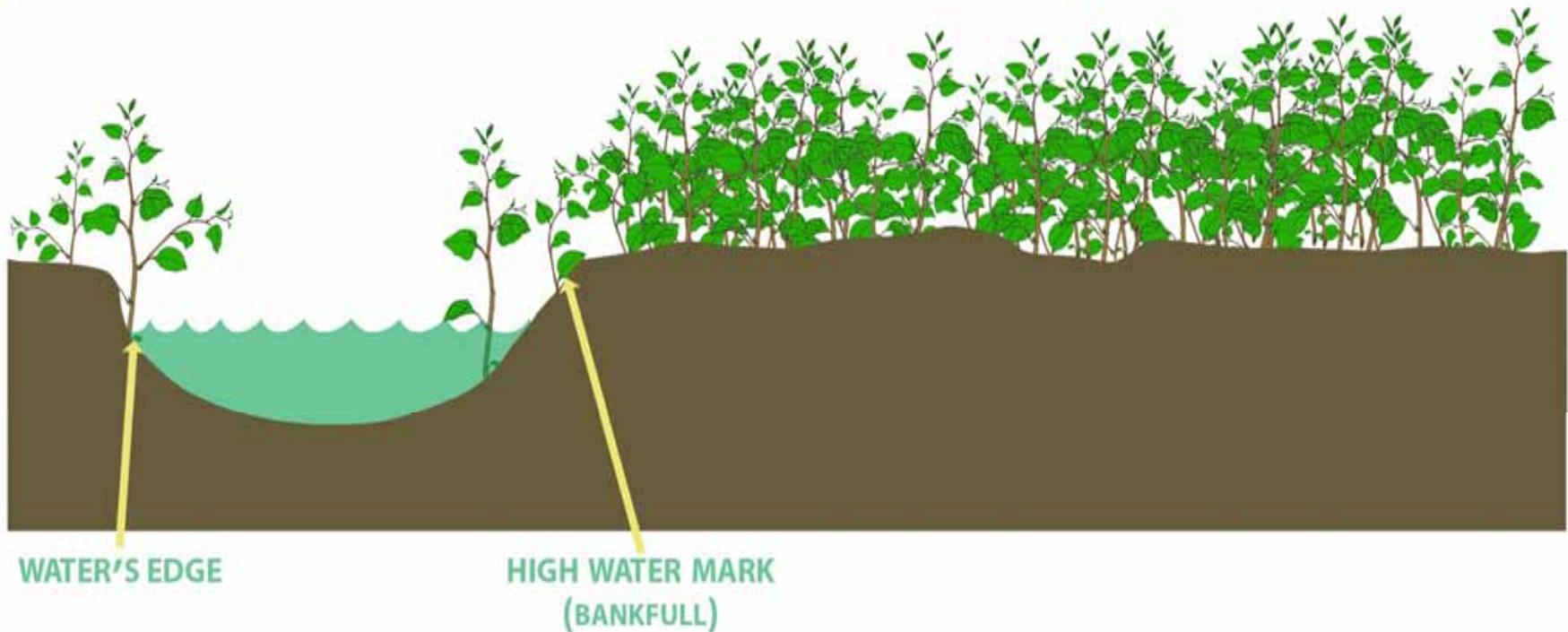




Photo 1. Knotweed infested stream bank

Sample Buffers

Herbicide	Horizontal distance in feet from bankfull		
	Broadcast	Spot	Hand/ Select
Imazapic	100	15	Bankfull
Chlorsulfuron	100	50	Bankfull
Triclopyr-BEE	None Allowed	150	150
Glyphosate (Aquatic Label)	50	<i>Edge of Water</i>	<i>No buffer</i>

Challenges

- **Site variability**
- **Identification of Bankfull**
- **Analysis tools for emergent vegetation**

Conclusion

- **There is no one-size fits all**
- **Buffers are necessary where there is risk of reaching levels of concern**
- **Need to monitor effectiveness of buffers**

