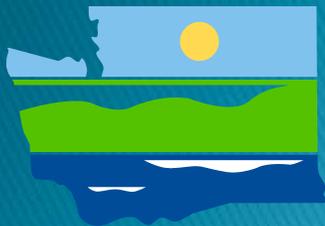


Workshop

Draft NPDES General Permit for *Zostera japonica* Management on Commercial Clam Beds in Willapa Bay



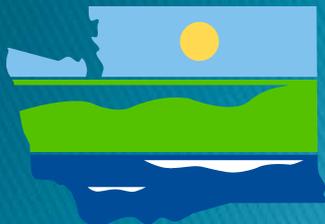
DEPARTMENT OF
ECOLOGY
State of Washington

Why is Ecology Developing a Permit

- Ecology is required to respond to a request for permit development.
- A permit is required to discharge chemicals to waters of the state.
- The legislature directed Ecology to issue permits for noxious weed management (RCW 90.48.445)



Photo: <http://www.nwcb.wa.gov/detail.asp?weed=173#photos>



DEPARTMENT OF
ECOLOGY
State of Washington

Permits Are a Balance



- ▶ Ecology pesticide permits balance competing beneficial uses.
 - Clam, oyster, and mussel rearing and spawning
 - Habitat, harvesting, commerce, navigation, boating, aesthetics
 - All beneficial uses are equal

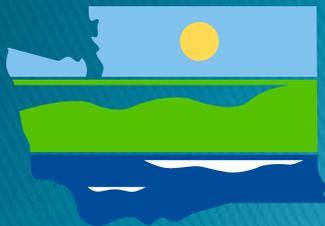
Zostera japonica Noxious Weed Listing

-*Z. Japonica* listed as a class C noxious weed statewide.

-The legislature has directed Ecology to issue permits for noxious weed management (RCW 90.48.445).



Photo: <http://www.nwcb.wa.gov/detail.asp?weed=173#photos>



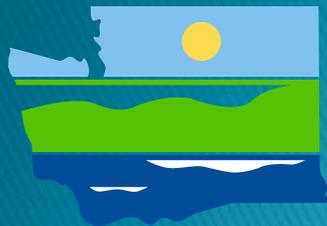
DEPARTMENT OF
ECOLOGY
State of Washington

Potential Impacts to *Zostera marina*

- Z. Marina* is affected by imazamox.
- Ecology made a State Environmental Policy Act (SEPA) determination of significance.
- Draft Environmental Impact Statement (EIS) developed and out for comment with the draft permit.



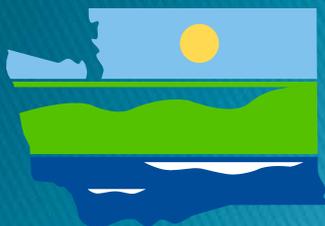
Photo: <http://www.nwcb.wa.gov/detail.asp?weed=173#photos>



DEPARTMENT OF
ECOLOGY
State of Washington

Public Comment

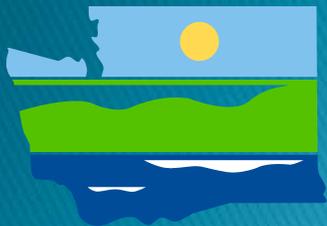
- Public Comment Period January 2, 2014 to February 15, 2014.
- Ecology will consider and respond to all comments on the Draft Permit and Draft EIS.
- Ecology will make a decision on permit issuance after reviewing all comments and the EIS.



DEPARTMENT OF
ECOLOGY
State of Washington

Imazamox

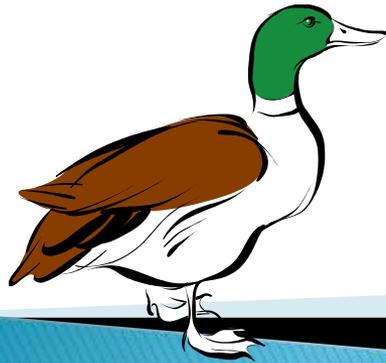
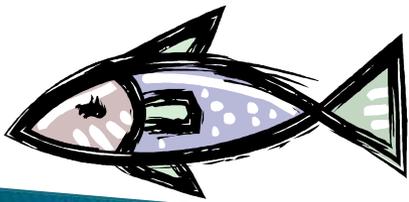
- Clearcast[®] formulation contains no surfactants or adjuvants.
- EPA toxicity category of practically non-toxic for: mammal, fish, birds and invertebrates.
- No toxic effects observed on eight species of green and blue/green algae at the maximum allowable rate of 500 ppb.



DEPARTMENT OF
ECOLOGY
State of Washington

Imazamox

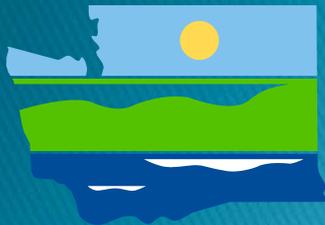
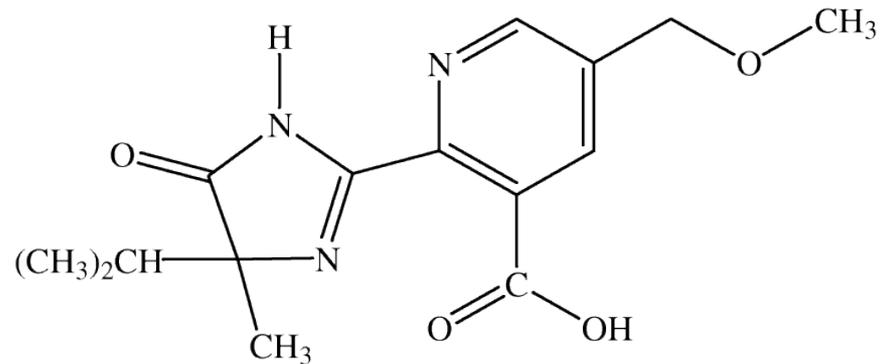
- In 2003 imazamox received an exemption from tolerance designation from the Environmental Protection Agency (EPA).
 - EPA determined that the total amount of imazamox on food will not be a hazard to public health.
- Did not accumulate in fish or rat tissue.
Fish take up and excrete imazamox to below quantifiable limit in 24hrs.



DEPARTMENT OF
ECOLOGY
State of Washington

Imazamox

- Average photolytic half life in water of 6.8 hours.
- Not expected to preferentially bind sediments.



Draft Permit Functions

Clearcast[®]

Herbicide

SePRO

SPECIMEN

GROUP 2 HERBICIDE

For the control of vegetation in and around aquatic and non-cropland sites including areas that may be grazed or cut for hay.

Active Ingredient
ammonium salt of imazamox 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-5-(methoxymethyl)-3-pyridinecarboxylic acid¹ 12.1%

Other Ingredients 87.9%

TOTAL 100.0%

¹ Equivalent to 11.4% 2[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-5-(methoxymethyl)-3-pyridinecarboxylic acid 1 gallon contains 1.0 pound of active ingredient as the free acid

Keep Out of Reach of Children
CAUTION / PRECAUCIÓN

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand this label, find someone to explain it to you in detail.)

Refer to the inside of label booklet for additional precautionary information and *Directions for Use* including *Storage and Disposal*.

NOTICE: Read entire label before using. Use only according to label directions. Before buying or using this product, read *Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies* inside label booklet.

[®]Clearcast is a registered trademark of BASF Corporation.
Manufactured for: **SePRO Corporation**
11550 N. Meridian St.,
Ste. 600, Carmel, IN 46032 U.S.A.

EPA Reg. No. 241-437-67690
FPL20121009

Discharge Management Plan

Public Notification

Application Restrictions

Monitoring

Reporting

Best Practices



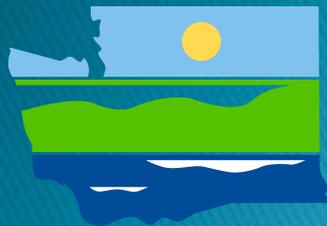
DEPARTMENT OF
ECOLOGY
State of Washington

Draft Permit Conditions

Authorizes discharge of imazamox and marker dyes to commercial clam beds to manage *Z. japonica*.

Commercial clam bed:

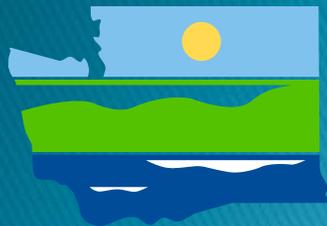
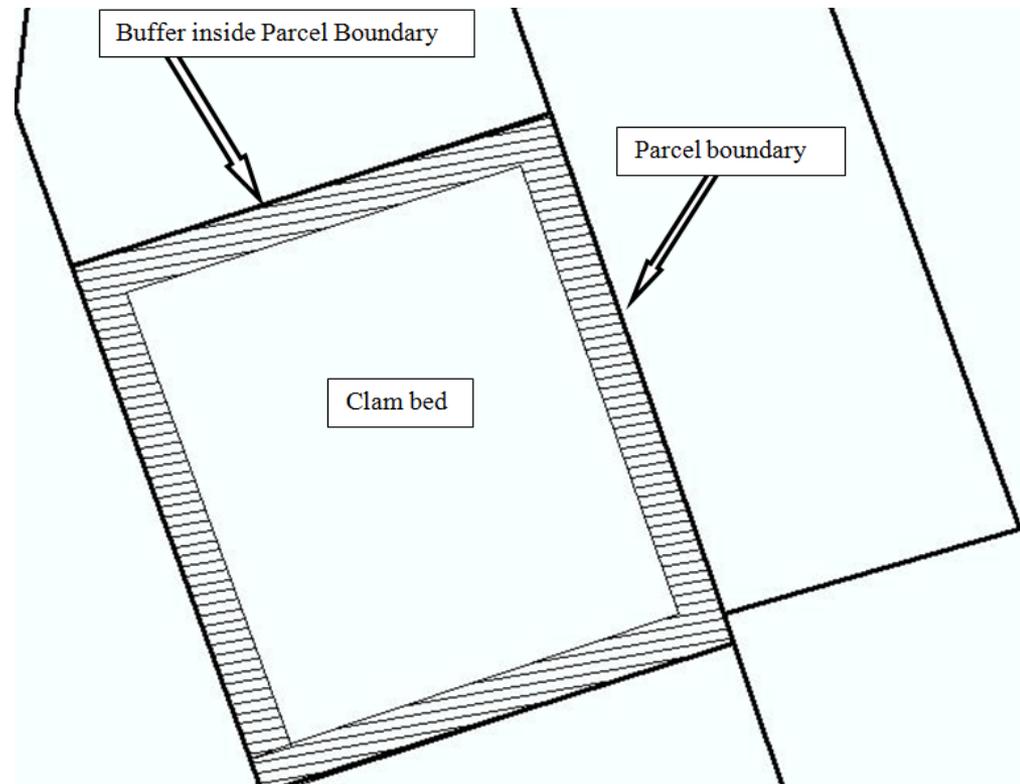
Marine or estuarine areas where clams are raised and harvested for commercial sale under a current Washington State business license.



DEPARTMENT OF
ECOLOGY
State of Washington

Draft Permit Conditions

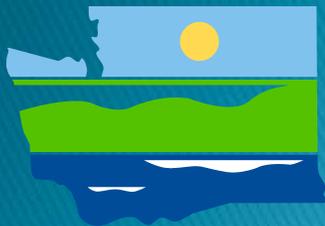
-Difficulties:
How to determine appropriate buffer for permit without having a permit in place?



DEPARTMENT OF
ECOLOGY
State of Washington

Draft Permit Conditions

- The proposed permit would be issued for a duration of 5 years.
- The application of aquatic herbicides and marker dyes is prohibited after the third year.
- Based on study and monitoring results, Ecology will make a determination to modify the permit to allow continued application of aquatic herbicides or terminate the permit after the third year.



Draft Permit Conditions

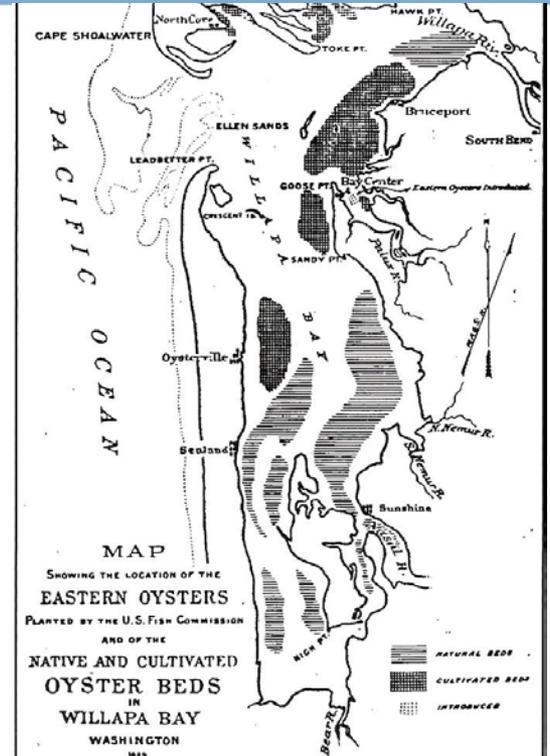
Geographic Area Covered

Draft permit applies to commercial clam beds in Willapa Bay, WA.

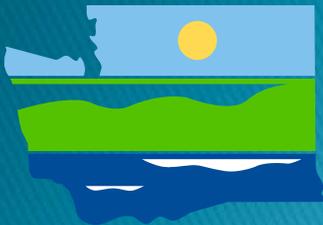
Exclusions

This permit does not apply to:

- Tribal Lands
- Federal lands



1894 Fish Commission map of Willapa Bay showing productive oyster growing areas.
http://www.pacificcohistory.org/sw2005_3.htm



DEPARTMENT OF
ECOLOGY
State of Washington

Who Must Apply for Coverage

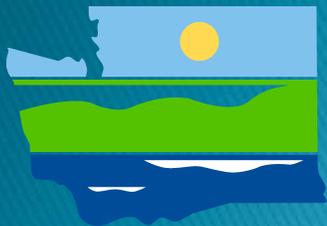
Permittee

A pesticide applicator with an aquatic license is the Permittee.

Sponsor

The individual or entity with the legal authority to make the decision to apply herbicide for that property.

A Permittee must have a sponsor for each permit coverage.

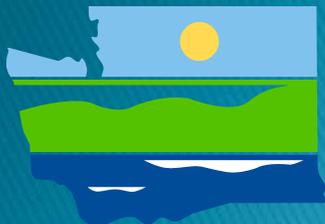


Application Restrictions



The Permit Restricts:

- Application of imazamox from April 15 through June 30.
- Pesticide application the four days before and after imazamox application.
- Application of imazamox to commercial clam beds where *Z. japonica* meets or exceeds the action threshold(s) set in the discharge management plan (DMP).

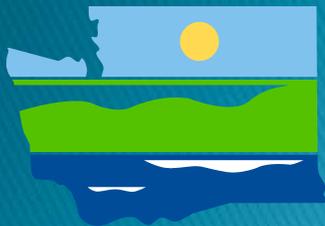


DEPARTMENT OF
ECOLOGY
State of Washington

Application Restrictions

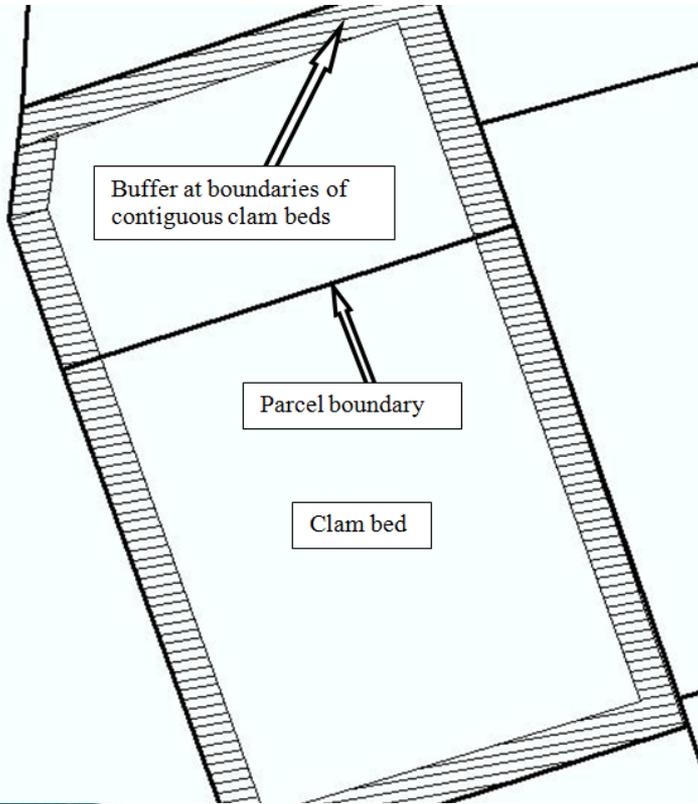
The Permit Restricts:

- Commercial clam beds to one treatment per year.
- Treatments to exposed beds with one hour of dry time.
- Aerial application of imazamox.
- Application of imazamox into any drainage that contains *Z. marina*.



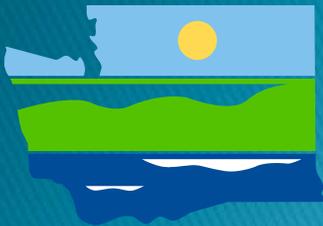
DEPARTMENT OF
ECOLOGY
State of Washington

Treatment Buffers



10m (32.8 ft) buffer inside the property line where treatment will not occur.

Where Permittees with contiguous clam beds agree, a buffer is not required on the connecting parcel boundaries.

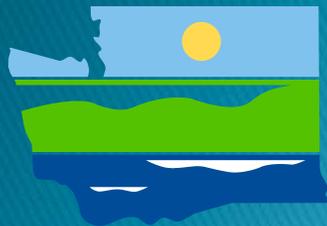


DEPARTMENT OF
ECOLOGY
State of Washington

Monitoring

If treatment does not occur up to the buffer, monitoring consists of recording the date, amount of active ingredient, acreage and the location treated.

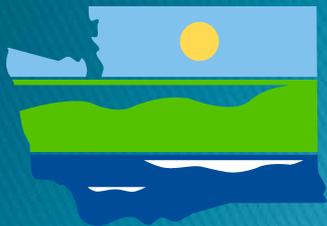
If treatment occurs up to the 10m buffer, the Permittee must measure the distance into the buffer that *Zostera spp.* are absent due to treatment.



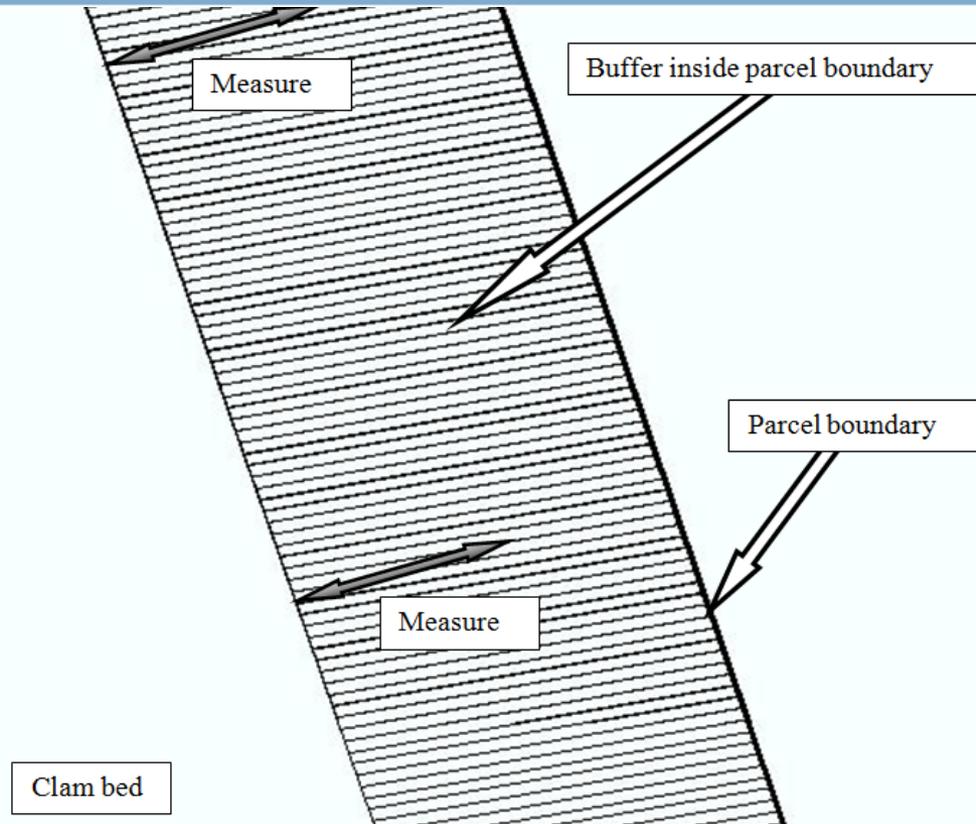
Monitoring

30 days after treatment, the Permittee must measure the width of dead eelgrass (*Zostera spp.*) in the buffer.

For situations where no eelgrass is naturally present within the buffer, no measurements must be taken.



Monitoring

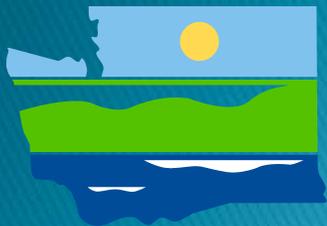


DEPARTMENT OF
ECOLOGY
State of Washington

Monitoring

The number of measurements taken will depend on the size of the commercial clam bed treated.

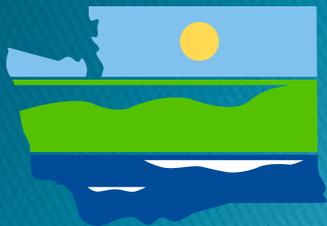
Treatment Acreage	Up to 5 Acres	5.1 to 10 Acres	10.1 to 20 Acres	20+ Acres
# Measurements per Parcel Edge	3	5	8	10



Buffer Width Validation Study

Need: Confirm that the proposed 10m property line buffer will be appropriate.

- This is a research study that is not a condition of the permit.
- The study was developed with assistance from scientists at WDFW, DNR, UW, WSU and shellfish growers.
- Study design was validated by Dr. Grue at the UW.

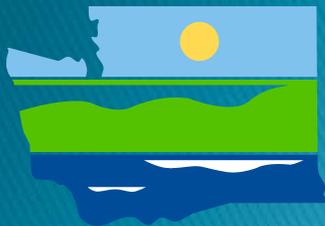


DEPARTMENT OF
ECOLOGY
State of Washington

Buffer Width Validation Study

Purpose of Study

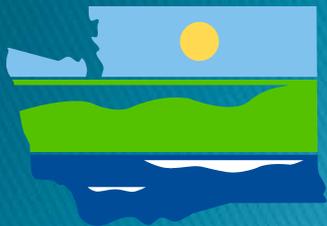
- Determine the appropriate buffer width for preventing off property impacts to *Z. marina* after treatment of commercial clam beds with imazamox.
- The concentration of imazamox in sediment within treated sites.



DEPARTMENT OF
ECOLOGY
State of Washington

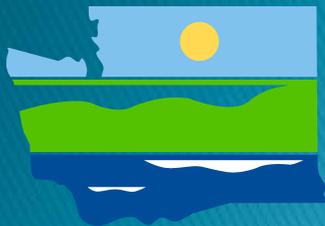
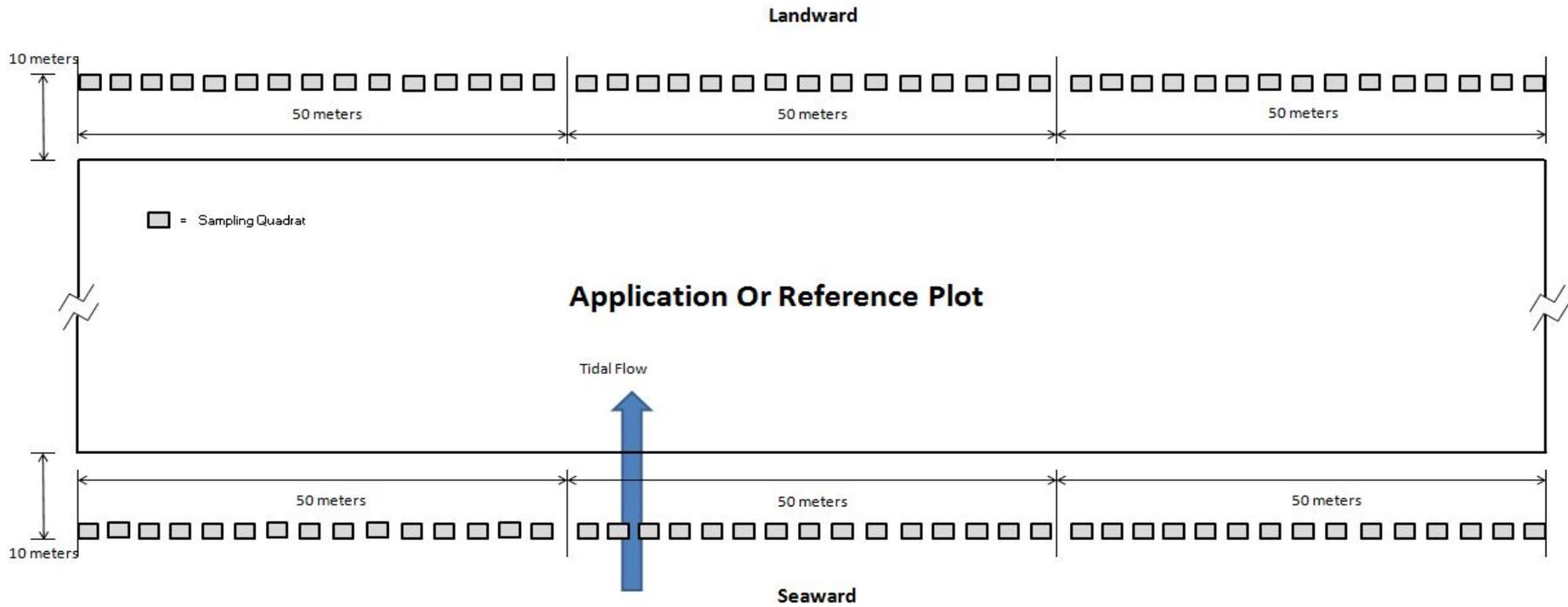
Buffer Width Validation Study

- Two sampling events
- Three treatment sites and three reference sites.
- Sediment samples taken for imazamox residue testing at three treatment sites.



DEPARTMENT OF
ECOLOGY
State of Washington

Buffer Width Validation Study



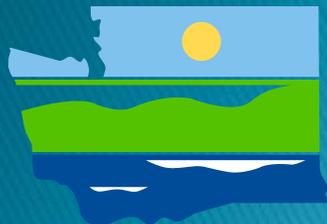
Buffer Width Validation Study

Data Evaluation:

Ecology will form a committee of state natural resource scientists to help evaluate study results.

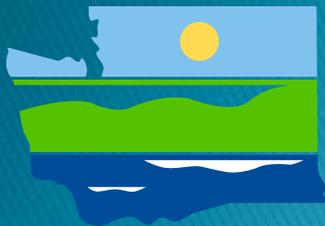
Data Analysis:

With a measured reduction in stem density greater than 20% Ecology will determine that ecologically significant changes in measured *Z. marina* populations in Willapa Bay are due to imazamox treatment.



What Happens After Year Three

- The application of aquatic herbicides and marker dyes is prohibited after the third year.
- After year three Ecology will reopen the permit to incorporate the results of the buffer validation study.



DEPARTMENT OF
ECOLOGY
State of Washington

Submitting Comments

Ecology will accept comment through February 15, 2014.

Submit comments by e-mail to:

nathan.lubliner@ecy.wa.gov

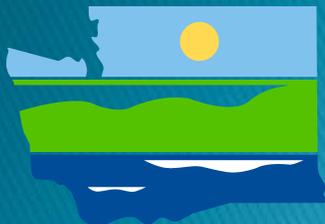
Submit written comments to:

Nathan Lubliner

Washington State Department of Ecology

P.O. Box 47696

Olympia, WA 98504-7696

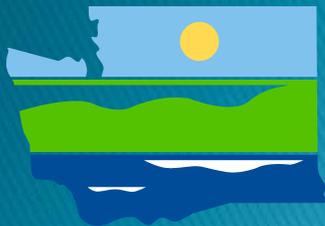


DEPARTMENT OF
ECOLOGY
State of Washington

Questions?

Contact Information

Nathan Lubliner
Washington State Department of Ecology
Water Quality Program
nathan.lubliner@ecy.wa.gov
360-407-6563



DEPARTMENT OF
ECOLOGY
State of Washington