Hello from the Humboldt Watershed CWMA! The HWCWMA was developed to address the invasive weed problem and subsequent decline in water quality within the entire 16,843 square mile watershed, which covers most of Northern Nevada. The primary function of HWCWMA has been to provide land managers, owners and weed control groups assistance in the areas of funding, agency and weed group coordination and cooperation.

A few months ago we wrote an article about control methods that may be used to treat noxious weeds. This month we would like to focus on several herbicides that are generally used to target specific noxious weeds species that you might be trying to control on your property.

For those who are concerned about the dangers of herbicide use, it is important to remember that these chemicals undergo stringent testing by the EPA, and they are designed to affect plant systems, not mammals. Most broadleaf herbicides are growth regulator products, meaning they accelerate cellular activity and respiration in broadleaf plants. When used according to label instructions, herbicides are very low in toxicity to fish, animals, and humans as well as the environment.

**So, in addition it is also important to know…**

**What are herbicides?**

Herbicides are chemicals used to kill weeds by interfering with the normal biological processes of plants, usually through an interaction with a crucial enzyme. Herbicides are a class of pesticides. Other common pesticide classes include insecticides and fungicides.

**Why are herbicides used on noxious weeds?**

Herbicides offer the most effective means of weed control when used in combination with other practices. Weed crews practice integrated weed management by combining the selective use of herbicides with cultural practices, including sheep grazing and revegetation, and mechanical and biological techniques, such as hand tools and exotic herbivorous insects and fungi. Mapping and monitoring is another typical practice. Encouraging the growth and reproduction of native plants is emphasized to suppress the growth and spread of weeds.

**How do herbicides work?**

Herbicides are absorbed by foliage or roots. Herbicides can be either selective or non-selective to certain types of plants. Some herbicides are systemic and move to other areas of the plant, while others are contact herbicides that affect only the tissue on which they land.

Most of the products listed below are restricted in sizes of 1 gallon or larger; some will be available in smaller containers. To purchase and apply restricted-use herbicides, a pesticide license is required. Contact the Nevada Dept. of Ag. or the University of Nevada Cooperative Extension for information on how to obtain a license. The following information is provided only as a general guide to weed control. Size of infestations, current or projected land use and site conditions will determine what herbicide or other control method will best suit your needs. Please remember to always read and follow all label instructions on the products you select and use!

***2,4-D:***

This product is sold under many names and formulations (Amine 4®, Hi-Dep®, Weedar 64®, etc). 2,4-D is a selective, broadleaf herbicide, it will last 2-4 weeks in the soil after spraying, but nearly all of its effect is on the foliage.

* Kochia, knapweeds, bull, Scotch and musk thistles, hoary cress, perennial pepperweed, poison hemlock and curly dock

***Aminopyralid:***

On the market since 2006, Aminopyralid is for use on broadleaf weeds, applied to foliage and moving down into the root system. This product can be sprayed up to the edge of water and can also be used on “seasonally dry” wetland. There are no grazing restrictions. The only brand name of this product is Milestone®. One drawback is that it is not very effective for the control of mustards or toadflax. This product has a very low use rate at a maximum rate of 7oz/acre.

* Knapweeds, Canada, bull, Scotch and musk thistles

***Aminopyralid + 2,4-D:***

New in 2008, Forefront R&P® mixture is for use in range and grass pastures, CRP lands, and permanent grass pastures. It controls a wide spectrum of broadleaf weeds and the 2,4-D aids in the burn down of plants.

***Aminopyralid + Metsulfuron:***

New in 2009, Chaparral® is for use in range and pastures, CRP lands, and permanent grass pastures. The metsulfuron will help in the control of mustards and members of the borage family (tarweeds, etc.).

***Dicamba:***

This is the active ingredient in Banvel®. It is also a selective, broadleaf herbicide and can last 2-4 months in the soil. Most of its activity is through the foliage but will provide some residual control of new seedlings. Usually provides quick burn down of plants.

***Dicamba + 2,4-D:***

This is a combination often recommended to landowners with noxious weeds in a pasture or lawn setting. Some of the trade names include Weedmaster®, Range Star®, and Outlaw®. It controls a wide variety of broadleaf weeds.

* Bur buttercup, puncturevine and leafy spurge

***Clopyralid:***

This is a broadleaf herbicide for use in pastures and non-crop areas. Transline® is recommended when weeds are growing among conifers.

***Clopyralid + 2,4-D:***

A mix for pasture and rangeland, Curtail® is very good for use on thistles and other broadleaf weeds.

* Knapweeds, Canada, bull, musk and Scotch thistles

***Clopyralid + Triclopyr:***

Redeem R&P® Another herbicide for pastures, rangeland, and non-crop areas.

* Knapweeds, fiddleneck, Canada, bull, musk and Scotch thistles

***Chlorsulfuron:***

This is aselective broadleaf herbicide for use in non-crop settings. Telar® is a trade name for this chemical. Now available in a smaller amount.

* Mustards (perennial pepperweed and hoary cress), fiddleneck, Canada thistle and perennial pepperweed

***Metsulfuron:***

Another broadleaf herbicide used for weed and brush control in pastures, rangeland, and non-crop areas, the trade name is Escort®.

***Metsulfuron + 2,4-D, + Dicamba:***

Trade name is Cimarron Max® or an alternative is to buy the Dicamba + 2,4-D mix (Weedmaster®, Outlaw®, etc.) and add metsulfuron (Escort®). This is an excellent mix for a wide variety of weeds and brush. For use in pasture, rangeland, and CRP areas. In adverse conditions it can yellow or temporarily stunt grasses.

* Mustards (perennial pepperweed and hoary cress) and fiddleneck

***Picloram:***

Tordon® is the trade name for this herbicide and it is a long lasting herbicide for broadleaf plants. A license is required to purchase this product in any amount. It is a selective herbicide that will remain in the soil controlling broadleaf plants an average of 2-3 years depending on soil type. Picloram has both foliar and root activity.

* Knapweeds, Canada, bull, musk and Scotch thistles and leafy spurge

***Glyphosate:***

Most commonly known as Roundup®, this active ingredient can be found in many herbicides. Glyphosate only works on foliage and has no soil activity. Particular caution should be used when applying glyphosate as it is non-selective (works on grasses and broadleaf plants); leaving bare ground for new weeds to get established unless reseeding is done.

* Perennial pepperweed, hoary cress, tamarisk and curly dock

As always, please notify the HWCWMA if you see any noxious weeds growing within the Humboldt River Watershed. We have an opportunity to stop invasive species from spreading if we act quickly and our [staff](http://www.kingcounty.gov/environment/animalsAndPlants/noxious-weeds/program-information/who-we-are.aspx) can provide the property owner or appropriate public agency with site-specific treatment options for these plants. The HWCWMA also maps and monitors heavily infested sites in the watershed which allows the HWCWMA the ability to provide educational and financial assistance to land owners and groups in their management efforts, ultimately improving all of the qualities of the land and water in our watershed.

The HWCWMA has also developed a website to serve as a clearinghouse for information on invasive weeds in the Humboldt Watershed. Our website (http://www.humboldtweedfree.org) contains fact sheets for state listed noxious weeds in Nevada, Board of Director’s information, funding partner’s links, and many more features including a detailed project proposal packet that you can print, fill out and mail back to us at your convenience. We are looking to expand our project area outside of the Humboldt River and always welcome new funding opportunities.

If you have any questions, please feel free to contact Andi Porreca, HWCWMA Coordinator at (775) 762-2636 or email her at aporreca@humboldtweedfree.org. You may also speak with Rhonda Heguy, HWCWMA Administrator at (775) 738-3085, email: hwcwma@gmail.com.