Comments on Proposed "Forest Plan Amendment, A programmatic amendment to the Siuslaw Forest Plan would be necessary to include the use of new chemicals." From Mark Swift, resident of Waldport, Oregon.

**Draft Proposed Action** 

Page 1

**Comment 1:** The goal as stated is a good one, specifically "to restore ecosystems by reducing the presence of invasive plant species populations".

**Comment 2:** The second paragraph indicates that about 2,000 acres of the Siuslaw National Forest would be treated each year under the planned amendment for invasive plant species. However, the descriptions of the proposed treatments estimate that 1,670 acres could be treated by manual methods, 1,350 acres could be treated by mechanical methods, 200 acres could be treated using biological methods and 5 acres could be treated using solarization and shading. This indicates that the Siuslaw National Forest could treat 3,225 acres of invasive plants without the use of chemical treatments at all. I would propose that these non-chemical treatments be utilized to their fullest extent possible eliminating the need for herbicides at all.

**Comment 3:** Monitoring is not addressed at all in the document. This along with prevention are extremely important to any invasive species management. There should be an extensive description of proposed monitoring efforts and efforts to obtain population data from other sources including public outreach.

**Comment 4:** Treatment Methods, Prevention: Prevention should be a primary point addressing any invasive species reduction. The discussion is good as far as it goes but does not cover the primary vectors of many of the invasive species. There should be requirements that all contractors utilizing machinery on the National Forest clean their equipment prior to entering the National Forest. There should also be educational signs and perhaps washing stations for dune buggy type equipment, bicycle events, or any other equipment that may be used on the Siuslaw National Forest through a special use permit, as a permitted event, or as an encouraged use such as planned mountain bike trails, ATV trails or play areas. Trailheads and mechanized trails should be key areas for monitoring and treatment as well as the education proposed in the draft PA.

Page 1 and 2

**Comment 5:** Manual Methods: The manual methods described are good. These should be the primary methods used. The proposal indicates that 1,670 acres could be treated using treatments using hand methods. I see no reason these could not cover more acres than proposed.

**Comment 6:** Acre limits on treatment options: It is unclear in the document if the acres identified for each treatment are a limit on what will be allowed or an estimate of what would likely be able to be accomplished, or if it is a mix of both. The descriptions alternate from "would not amount to more than" to "no more than" xx acres would be treated under the proposed treatment. If this is a limit, why would we choose to limit weed pulling to a maximum of 700 acres? Under the chemical treatment options most of the options utilize "would not amount to more than" xx acres

where as Directed Foliar Spray description indicates it "would not be used to treat more than 700 acres per year." This indicates a hard limit on Foliar Spray, but perhaps a looser limit or estimated capability limitation which could leave future applications to exceed these numbers in the other chemical application treatments including drone spraying. This needs to be clarified.

**Comment 7:** Biological Methods, Insects: This method has worked in other areas against plant infestations but must be used carefully. Unintended consequences is what we are living with concerning all the invasive species introduced either accidentally or purposefully. Insects are their own agents and will move, expand, reproduce to fill their niche. Insects as all life can adapt to other foods and may cause problems far down the road into the future.

**Comment 8:** Livestock Biocontrol: I am very skeptical about using livestock to remove invasive weeds for several reasons. First, these animals eating invasive weeds will likely excrete seeds of these weeds onto the landscape. In addition, these animals may carry seeds of weeds on their fur and feet spreading seeds from their home turf or from other weed eating project areas to the Siuslaw NF. They also will likely eat down native vegetation along with the weeds. In addition, I do not think that the Siuslaw National Forest is an appropriate area to use livestock as they can cause or exacerbate erosional problems.

**Comment 9:** Solarization and Shading: Not sure this is a biological control. I have concern with release of plastics into the environment due to weathering of the plastic sheets or the black tarps.

**Comment 10:** Native Plant Seeding and Planting: This is a very good method to reclaim an area of pulled or otherwise eliminated weed patches. It is an augment to all the methods not normally a method in and of itself. No acres given for this option in the Draft PA.

**Comment 11:** Mechanical Methods: This category includes mechanized cutting and scraping but also fire and heat treatment. Prescribed fire is indiscriminate and could only be used sparingly in some areas such as near homes where many weeds occur.

**Comment 12:** Chemical Methods: This section of the Draft PA makes reference to "Table X" which is not included in the Draft Proposed Forest Plan Amendment.

**Comment 13:** Herbicide treatment methods. I feel herbicide use in any method is not good for the environment or people. However, treatment methods that involve spray of the herbicide run the risk of overspray, wind drift, unintended targets being impacted and a greater risk of reaching water bodies and streams than do methods that involve wiping, hacking and squirting, cut and daub, or injection. Direct foliar spray and spot spray may seem to be species specific but wind and weather have a greater chance of release of herbicide into water ways or onto unintended vegetation or wildlife. Aerial drone application seems especially fraught with potential disastrous consequences of extensive overspray, wind drift and accidental spillage due to drone accidents and collisions with vegetation. Drone spraying should not be allowed on the Siuslaw National Forest. Other hand spraying should be very limited with non-spray techniques the preferred method for herbicide treatments. As discussed in earlier comments, the use of herbicide should be abandoned and manual and mechanical methods utilized exclusively.

**Comment 14:** Concerns about specific herbicides proposed for addition to list of herbicides approved for use on the Siuslaw National Forest: Proposed additions to the list of herbicides approved for use on the Siuslaw National Forest under draft Forest Plan Amendment: aminopyralid, clethodim, fluazifop-p-butyl, and indaziflam.

## **Clethodim:**

Information from National Institute of Health (NIH) web site:

"Products of combustion from fires involving this material may be toxic. Avoid breathing smoke and mists. Avoid personnel and equipment contact with fallout and runoff. Minimize the amount of water used for fire fighting. Do not enter any enclosed area without full protective equipment, including self-contained breathing equipment. Contain and isolate runoff and debris for proper disposal. Decontaminate personal protective equipment and fire fighting equipment before reuse. <u>https://valent.com/data/labels/0232rev6%20select%20max.pdf</u> Hazardous Substances Data Bank (HSDB)"

"Liquid evaporates and forms vapor (fumes) which can catch fire and burn with explosive violence. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Fire hazard is greater as liquid temperature rises above 85 degrees F.: <u>https://valent.com/data/labels/0232rev6%20select%20max.pdf</u> Hazardous Substances Data Bank (HSDB)"

The above from the National Institute of Health indicate this chemical should not be applied to forest lands that could experience wildfire. Such forest fires could result in release of toxic chemicals into the air where the public may be impacted and where such chemical toxins may fall into waterways polluting drinking water and aquafers. Do not use this chemical on the Siuslaw National Forest as it may put wildland fire fighters and the public at risk.

**Fluazifop-p-butyl:** Although this chemical is not highly toxic to animals, there are some concerns that have been identified in several studies.

Information from National Institute of Health (NIH) web site. "Fluazifop-p-butyl is a slightly toxic compound. A single ingested dose can cause severe stomach and intestine disturbance. Ingestion of large quantities may cause problems in the central nervous system such as drowsiness, dizziness, loss of coordination and fatigue. Breathing small amounts of the product may cause vomiting and severe lung congestion."

Information from USDA Pesticide Product Label website. "ENVIRONMENTAL HAZARDS This product is toxic to fish and aquatic invertebrates. DO NOT apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean highwater mark. DO NOT contaminate water when disposing of equipment wash waters or rinsate. DO NOT apply when weather conditions favor drift from target area. Ground Water Advisory This chemical has properties and characteristics associated with chemicals detected in groundwater. This chemical may leach into ground water if used in areas where soils are permeable, particularly where the water table is shallow. Surface Water Advisory This product may impact surface water quality due to runoff of rainwater. This is especially true for poorly draining soils and soils with shallow ground

water. This product is classified as having high potential for reaching surface water via runoff for several months or more after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features including ponds, streams, and springs will reduce the potential loading of fluazifop-p-butyl from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall or irrigation is expected to occur within 48 hours. For terrestrial uses: DO NOT apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. DO NOT contaminate water when disposing of equipment washwater or rinsate. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas."

"To protect the environment, DO NOT allow pesticide to enter or run off into storm drains, drainage ditches, gutters or surface waters. Applying this product in calm weather when rain is not predicted for the next 24 hours will help to ensure that wind or rain does not blow or wash pesticide off the treatment area. Rinsing application equipment over the treated area will help avoid run off to water bodies or drainage systems."

"This pesticide is toxic to fish and aquatic invertebrates NON-TARGET ORGANISM ADVISORY: This product is toxic to plants and may adversely impact the forage and habitat of non-target organisms, including pollinators, in areas adjacent to the treated site. Protect the forage and habitat of non-target organisms by following label directions intended to minimize spray drift."

These reports from USDA and EPA indicate that this herbicide is of concern to humans and animals should it be consumed accidentally, that it is toxic to fish and aquatic invertebrates, and poses a hazard to leaching into watersheds and ground water. This chemical should not be utilized on the wet landscapes that abound on the Oregon Coast and the Oregon Coast Range.

**Indaziflam:** Information from beyondpesticides.org: The nervous system is the major target for toxicity in mammals. Evidence of neurotoxicity (e.g., decreased motor activity, clinical signs, and neuropathology) was observed in rats and dogs, in acute, subchronic, and chronic toxicity studies. Organs affected by indaziflam in mice and rats include the kidney, liver, thyroid, stomach, seminal vesicles, and ovaries. Adverse effects on the thyroid indicating potential endocrine disruption include increased thyroid stimulating hormone (TSH) and thyroid histopathology Indaziflam shows no evidence of carcinogenicity, according to EPA. Indaziflam is categorized as highly toxic to freshwater and estuarine/marine fish, moderately toxic to highly toxic to estuarine invertebrates, and slightly toxic to moderately toxic to freshwater invertebrates on an acute exposure basis.

(https://www.beyondpesticides.org/assets/media/documents/Indaziflam%20Fact%20Sheet%202020.pdf)

This information on Indaziflam is of great concern where drinking water and water played in at various creeks, recreation areas, and coastal parks will be in contact with the people and pets of and visiting the Central Coast, Coast Range mountains as well as the residents of communities in and around the Siuslaw National Forest along the coast as well as those inland and along the western edge of the Willamette Valley. This chemical should not be utilized on the Siuslaw National Forest.

**Aminopyralid:** "In 2008, garden crops were damaged with contaminated manure across the United Kingdom resulting in a temporary ban. Dow amended label precautions for Milestone and other similar products containing the active ingredient aminopyralid, which stated that treated plant residues or manure

from animals that have grazed on treated forage should not be used in compost or mulch to be used in growing susceptible broadleaf plants. Milestone's revised product labels state: "Do not use aminopryalid-treated plant residues, including hay or straw from treated areas, or manure from animals that have grazed forage or eaten hay harvested from treated areas within the previous 3 days, in compost or mulch that will be applied to areas where commercially grown mushrooms or susceptible broadleaf plants may be grown." Additionally, already contaminated manure should not be replanted with for at least a year. After Washington State encountered contaminated manure with aminopyralid residues in 2009 and 2010, advisories went out to dairy farmers warning them not export the manure to compost facilities or farms growing sensitive crops."

"Aminopyralid persists in soils with a half-life ranging from 32 to 533 days, with a typical time of 103 days. It is soluble in water and has moderate to high mobility with the ability to leach through soils and possibly contaminate groundwater. Aminopyralid is stable in water but in sunlight breaks down quickly with an estimated half-life of 0.6 days. This is therefore an important route of degradation for shallow water bodies with little to no suspended sediment. Aminopyralid is only moderately broken down in soil. The main mode of degradation in the environment is expected to be microbial metabolism in soils however microbial metabolism can be slow in some soils, especially at lower soil depths and appears generally to be very slow (half-lives well above a year) in aquatic systems."

## Above quotes from:

## https://www.beyondpesticides.org/assets/media/documents/infoservices/pesticidesandyou/documents/aminopyralid.pdf

The above indicates that aminopyralid is a very long-lasting herbicide that is highly mobile leaching though soils into groundwater. It has not been found to be highly impactful to humans or other animals directly but as a long lasting herbicide that is highly mobile it is a potential threat to threatened and endangered plants or plants on which threatened or endangered animals (such as the Oregon Silverspot Butterfly) rely. This herbicide should not be utilized on the Siuslaw National Forest. In addition, if the treated plant material is eaten by animals such as elk or deer, the elk or deer or other animals could spread the herbicide through their fecal material to areas where it is not desired.

**Comment 15:** Other herbicides often utilized in forestry also have terrible effects on the environment, wildlife and pose hazards to the public. The table of approved and proposed herbicides was not included in the draft for us to comment on. These additional comments are included as these chemicals included in the absent "Table X" and referred to in the Forest Supervisor's accompanying letter have potentially harmful effects on humans, animals, environments, and water sources.

List of herbicides already approved for use on the Siuslaw National Forest as identified in the letter from the Forest Supervisor: chlorsulfuron, clopyralid, glyphosate, imazapic, imazapyr, metsulfuron methyl, picloram, sethoxydim, sulfometuron methyl, and triclopyr.

**Chlorsulfuron:** "Chlorsulfuron is likely to be persistent and highly mobile in the environment. It may be transported to nontarget areas by runoff and/or spray drift. Degradation by hydrolysis appears to be the most significant mechanism for degradation of chlorsulfuron, but is only significant in acidic environments

(23 day half-life at pH = 5); it is stable to hydrolysis at neutral to high pH. Degradation half-lives in soil environments range from 14 to 320 days."

"Because chlorsulfuron is an herbicide and may therefore harm non-target plants exposed via drift, the Agency requires that chlorsulfuron be applied in a manner that minimizes spray drift. Strict use restrictions to minimize spray drift will be placed on the labels for all chlorsulfuron products."

The above is from the EPA Pesticide Fact Sheet, for chlorsulfuron. Again, a long-lasting herbicide with potential for damage to sensitive non-target plants. This chemical should not be used in any spray application method and due to long lasting potency in the wet forest of the Siuslaw National Forest, it should not be used at all.

**Clopyralid:** This herbicide is known to persist in duff, compost, and animal feces. When used in family yards, clippings treated with clopyralid used in compost and later used in gardens killed the vegetables they were meant to feed. (info from Wikipedia). It has been banned for domestic use in many states. What effect on the general environment of forest use was not apparently studied. However, dead plants killed by the herbicide would become compost on the forest floor risking potentially sensitive or rare plants or plants rare species rely on such as the Silverspot Butterfly.

These chemicals pose threats to the environment, endangering aquatic riparian and sea shore wildlife and plant communities. They also endanger the health of the people living in or adjacent to the National Forest, visitors to the forest and adjacent shorelines and parks and the people who work in the National Forest as Forest Service employees or permittees, as well as those just passing through the Siuslaw National Forest.

**Glyphosate:** "In a July 2023 <u>study in Chemosphere</u>, researchers from the University of California, Berkeley, conducted a systematic review of mechanistic studies on glyphosate and glyphosate-based formulations to evaluate them for the 10 key characteristics of cancer hazard identification. Their analysis revealed "strong evidence" for <u>five of the key characteristics of</u> <u>carcinogenicity</u>, and their in-depth review of evidence on genotoxicity and endocrine disruption revealed "strong and consistent positive findings." The findings "strengthen the mechanistic evidence that glyphosate is a *probable* human carcinogen and provide biological plausibility for previously reported cancer associations in humans, such as non-Hodgkin lymphoma."

A pooled study of three case-control studies published in March 2023 in <u>Leukemia and Lymphoma</u> journal found a statistically significant increased risk and confirmed an association between Non-Hodgkin Lymphoma (NHL), including sub type hairy cell leukemia, and exposure to certain herbicides including glyphosate.

A February 2020 paper in <u>Environmental Health</u> presents a comprehensive review of chronic exposure animal carcinogenicity studies of glyphosate. It reports toxicologically plausible pathways for why glyphosate may cause various cancers in rodents.

In April 2019, the U.S.Agency for Toxic Substances and Disease Registry issued its draft <u>toxicological profile for glyphosate</u>, reporting an increased cancer risk from glyphosate exposures. <u>Emails released via court proceedings</u> show officials at EPA and Monsanto tried to hinder the ATSDR report. (The ATSDR profile is now final, and raises concerns about cancer.)

A March 2019 study published in the <u>International Journal of Epidemiology</u> analyzed data from more than 30,000 farmers and agricultural workers from studies done in France, Norway and the U.S., and reported links between glyphosate and diffuse large B-cell lymphoma."

Above quote from <a href="https://usrtk.org/pesticides/glyphosate-health-concerns/">https://usrtk.org/pesticides/glyphosate-health-concerns/</a>. Due to the potential carcinogenic qualities of glyphosate it should not be utilized on the Siulaw National Forest in any manner.

**Imazapic**: Based on field dissipation studies, imazapic is moderately persistent in soils with a DT50 (time required for concentration in soil to reach 50% of initial measured concentration) of 7 to 150 days depending upon soil type and climatic conditions. (Weed Control Methods Handbook, The Nature Conservancy, Tu et al.)

• GHS Classification TreeHazard Statement CodesH400: Environmental Hazards

H400: Very toxic to aquatic life [Warning Hazardous to the aquatic environment, acute hazard]

• GHS Classification TreeHazard Statement CodesH400: Environmental Hazards

H410: Very toxic to aquatic life with long lasting effects [Warning Hazardous to the aquatic environment, long-term hazard]

• GHS Classification TreeHazard ClassesEnvironmental Hazards

Hazardous to the aquatic environment, acute hazard

• GHS Classification TreeHazard ClassesEnvironmental Hazards

Hazardous to the aquatic environment, long-term hazard

Table above from National Institute of Health, Imazapic analysis page: <u>https://pubchem.ncbi.nlm.nih.gov/compound/91770</u>

ENVIRONMENTAL HAZARDS For terrestrial use only. DO NOT apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. DO NOT contaminate water when cleaning equipment or disposing of equipment washwaters or rinsate. This chemical demonstrates the properties and characteristics associated with chemicals detected in ground water. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination. This product may contaminate water through drift of spray in wind. This product has a high potential for runoff for

several months or more after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. A level, well maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential for contamination of water from rainfall runoff. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours. (From EPA mandatory labeling

https://www3.epa.gov/pesticides/chem\_search/ppls/071368-00118-20220406.pdf)

This herbicide should not be used on the water rich landscape of the Siuslaw National Forest. It is long lasting and very hazardous to aquatic ecosystems.

**Imazapyr:** Caution should be used when applying imazapyr, as a few reports to TNC from the field indicate that imazapyr might be exuded from the roots of target species. Some legume species, such as mesquite, may actively exude imazapyr (J. Vollmer pers. comm.). Imazapyr herbicide can be mobile within roots and transferred between intertwined root systems (root grafts) of many different plants and/or to several species. Movement of imazapyr via root grafts or by exudates (which is a defense mechanism of those plants) may therefore adversely affect the surrounding vegetation. This movement of herbicide may also be compounded when imazapyr is incorrectly overapplied. Movement of soil particles that contains imazapyr can also potentially cause unintended damage to desirable species. Imazapyr is effective for creating openings for wildlife use. It can be applied pre-emergent, but is most effective when applied as a post-emergent herbicide. Care should be taken in applying it around non-target species, as it is readily adsorbed through foliage and roots, and therefore, could be injurious by drift, runoff, or leaching from the roots of treated plants. To avoid injury to desirable trees, do not apply imazapyr within twice the drip line (tree canopy). (From https://www.invasive.org/gist/products/handbook/17.Imazapyr.pdf)

The ability to transfer from one root to roots of another plant, potentially a non-target, desirable or even endangered plant is troubling. Spraying or even wiping on a plant outside of twice the drip line of any desirable tree would seem impractical on the Siuslaw National Forest.

**Metsulfuron methyl:** ENVIRONMENTAL HAZARDS Metsulfuron Methyl is known to leach through soil into groundwater under certain conditions as a result of label use. Metsulfuron Methyl may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow. Surface Water Advisory This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having high potential for reaching surface water via runoff for several weeks or more after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features including ponds, streams, and springs will reduce the potential loading of this product from runoff water and sediment. Runoff of this product will be greatly reduced by avoiding applications when rainfall or irrigation is expected to occur within 48 hours. Windblown Soil Particles Advisory This product has the potential to move off-site due to wind erosion. Soils that are subject to wind erosion usually have a high silt and/or

fine to very fine sand fractions and low organic matter content. Other factors which can affect the movement of windblown soil include the intensity and direction of prevailing winds, vegetative cover, site slope, rainfall, and drainage patterns. Avoid applying this product if prevailing local conditions may be expected to result in off-site movement. Non-target Organism Advisory This product is toxic to plants and may adversely impact the forage and habitat of non-target organisms, including pollinators, in areas adjacent to the treated area. Protect the forage and habitat of non-target organisms by minimizing spray drift. For further guidance and instructions on how to minimize spray drift, refer to the Spray Drift Management section of this label. Groundwater Advisory. (From EPA required Label, https://www3.epa.gov/pesticides/chem\_search/ppls/000279-09593-20191126.pdf)

This product seems to be able to travel through leaching and runoff and through wind transport. It seems ill-suited for the wet Siuslaw National Forest and ill-suited for use on the dunes. It should not be used on the Siuslaw National Forest.

## Picloram: How can picloram affect my health?

Picloram is a potential health hazard. Continued exposure to drinking water that has levels of picloram above its MCL can cause adverse health effects such as:

- Weakness;
- Diarrhea;
- Weight loss;
- Liver damage; and
- Damage to central nervous system.

The most recent research finds no evidence that picloram is carcinogenic in humans. (From Oregon Health Authority)

The water solubility and mobility of picloram through soil is high. So far, picloram has been found in the groundwater of at least 10 states. Incidents of water contamination have been reported from the Squaw Creek area of Wyoming, at Turtle Mountain Indian Reservation in North Dakota, at commercial greenhouses in Kimbal, NE, repeatedly in West Virginia (where hearings were held on this issue in 1983), and in Ontario, Canada. As little as 1 part-per-billion in water was found to be enough to permanently damage plants. Also, because of its high persistence, picloram continues to appear in soil leachate for a long period of time, sometimes as long as several years. Picloram is considered by EPA to be moderately toxic to fish, although most studies have found it to be relatively non-toxic to birds, aquatic invertebrates, and bees. EPA's Registration Standard on picloram stated, "that low concentrations will adversely affect the rate of yolk sac absorption and growth of [lake trout] fry." (From web site

https://www.beyondpesticides.org/assets/media/documents/pesticides/factsheets/Picloram.pdf)

Due to the long lasting nature of this herbicide, the potential for harm and leaching into the water table, this herbicide should not be used on the Siuslaw National Forest.

**Sethoxydim:** Aquatic Species: Sethoxydim is moderately to slightly toxic to aquatic species (EXTOXNET 1996). The LC50 for bluegill sunfish and rainbow trout are 100 mg/L and 32 mg/L, respectively (EXTOXNET 1996). The LC50 for Daphnia is 1.5 mg/L (EXTOXNET 1996). (https://www.invasive.org/gist/products/handbook/19.Sethoxydim.pdf)

Potential environmental effects

Aquatic toxicity: there is a high probability that the product not acutely harmful to fish, Acutely harmful to aquatic invertebrates, Very toxic (acute effect) to aquatic plants.

From https://www.uky.edu/Ag/Tobacco/GAP/MSDS/Herbicide/Poast.pdf

This herbicide may have toxicity to aquatic organisms and plants and should not be used on the Siuslaw National Forest.

**Sulfometuron methy: Amphibians**: Toxicity tests were conducted on African clawed frogs (Xenopus laevis) using products containing 85% and 98.5% sulfometuron methyl (Fort et al. 1999). After 96-hours of exposure, 50 percent of the frogs exposed to sulfometuron methyl concentrations as low as 4.2 mg/L using product containing 85% sulfometuron methyl exhibited malformations. In chronic toxicity tests with this same species, malformations were observed in frogs exposed to concentrations as low as 1 mg/L, with no effects observed at 0.1 mg/L containing 85% sulfometuron methyl. The Median Effective Concentration (EC50; 4.2 mg./L) was selected as the amphibian acute TRV and the NOAEL (0.1 mg/L) was selected as the chronic TRV.

**Aquatic Invertebrates**: Sulfometuron methyl is considered to have slight toxicity to aquatic invertebrates. In 48-hour aquatic toxicity tests, acute toxicity was observed in aquatic invertebrates exposed to concentrations as low as 802 mg/L using a 93% sulfometuron methyl product (i.e., Oust) (Naqvi and Hawkins 1989). In 21-day chronic tests, adverse effects were observed in concentrations of 24 mg/L, with no effect levels at 6.1 mg/L using a 99.1% sulfometuron methyl product (USEPA 2003b, MRID 41672806). (Sulfometuron Methyl Ecological Risk Assessment, Final Report Sulfometuron Methyl Ecological Risk Assessment, Final Report Bureau of Land Management).

Although this study did not find impacts to mammals or birds the impacts to amphibians and aquatic invertebrates is highly troubling as they are the canary in the coal mine of the forest water system. This, as well as all the other chemicals listed above should not be sprayed on the forest lands that flow into the important water sources of the Central Oregon Coast.

**Triclopyr:** Dow Chemical in their own warning label indicates this product is "<u>highly toxic to fish</u>, aquatic plants and aquatic invertebrates and is not labelled for application to water surfaces. Keep out of wetlands, lakes, ponds, streams, rivers and wildlife habitats at the edge of bodies of water. Do not contaminate water by cleaning of equipment or disposal of wastes. The use of this chemical

may result in contamination of groundwater particularly in areas where soils are permeable (e.g., sandy soil) and/or where the depth to the water table is shallow." The chemical has been determined toxic to ducks and rainbow trout. It has a half life of 30 to 90 days indicating it could easily be washed into creeks and rivers during rain runoff with its toxic nature intact. It has also been shown that <u>"Long-term exposures to birds (acid form) may affect eggshell thickness."</u> (Triclopyr General Fact Sheet, National Pesticide Information Center). With rare species such as Northern Spotted Owl and Marbled Murrelet living in the Central Coast Range it is dangerous to apply herbicides that could damage their ability to reproduce due to eggshell thinning, just as DDT damaged so many bird populations until it was banned.

**Clopyralid:** This herbicide is known to persist in duff, compost, and animal feces. When used in family yards, clippings treated with clopyralid used in compost and later used in gardens killed the vegetables they were meant to feed. (info from Wikipedia). It has been banned for domestic use in many states. What effect on the general environment of forest use was not apparently studied. However, dead plants killed by the herbicide would become compost on the forest floor risking potentially sensitive or rare plants or plants rare species rely on such as the Silverspot Butterfly.

**Comment 16:** The last paragraph of the draft proposed action states "All herbicides would be applied by a licensed applicator according to the label directions and would help move the Forest towards the desired condition of having more chemicals available for treatment in sensitive areas." This is an odd statement. It sounds like the desired condition is to have more chemicals available for use. Of course that is not a desired condition. The desired condition is to eradicate the invasive weed populations and restore the health of the forest and have healthy native plant populations. I am sure this is just a wording mistake.

These chemicals pose threats to the environment, endangering aquatic riparian and sea shore wildlife and plant communities. They also endanger the health of the people living in or adjacent to the National Forest, visitors to the forest and adjacent shorelines and parks and the people who work in the National Forest as Forest Service employees or permittees, as well as those just passing through the Siuslaw National Forest. I feel the Siuslaw National Forest should concentrate on manual and mechanical treatments and avoid herbicide treatments entirely.

I hope you will agree that use of these chemicals is a risk that should not be taken for the sake of ourselves, our children and our neighbors and visitors as well as the natural environment and the wild denizens of the grand Oregon Coast Range and the ocean that come together in this very special place.

Thank you for your consideration, Mark Swift