



# Board of Health

Tye Menser, Chair \* Maria Williams, Vice Chair \* Gary Edwards, Member  
Beth Harvey, Member \* Carolina Mejia, Member \* Lynn Nelson, Member  
Robin Vazquez, Member

**The Thurston Board of Health has responsibility and authority for public health in both incorporated and unincorporated areas of the County.**

## Agenda of Tuesday, March 14, 2023

### Summary of Timed Items

4:30 p.m.) Call Meeting to Order

#### 1) 4:30 p.m.) Call Meeting to Order

- Approval of the Agenda

#### 2) Opportunity for the Public to Address the Board of Health

4 minutes per citizen

#### 3) Proclamation

a) **Description:** International Transgender Visibility Day

**Contact:** Jamie Caldwell, Clerk of the Board

**Action:** The Board of Health will proclaim March 31st at International Transgender Visibility Day in Thurston County.



BoH-AIS-2023-03-14-CommissionersOffice-JamieCaldwell-5540.pdf  
PDF File  
160 KB

#### 4) Presentation

a) **Description:** Opioid & Fentanyl Epidemic Update

**Contact:** Jamie Caldwell, Clerk of the Board

**Action:** The Coroner, Prosecuting Attorney, and Sheriff will provide the Board of Health with an update on the opioid and fentanyl epidemic in Thurston County.



BoH-AIS-2023-03-14-CommissionersOffice-JamieCaldwell-1719.pdf  
PDF File  
96.5 KB

5)

### Department Item

a)

**Description:** Permitting Option for Temporary Food Establishments

**Contact:** Sammy Berg, Senior Environmental Health Specialist

**Action:** Move to approve the permitting options for temporary food establishments that propose to operate year-round at multiple venues, without connection to a public event, and authorize staff to implement the final policy.



BoH-AIS-2023-03-14-CommissionersOffice-JamieCaldwell-3656.pdf  
PDF File  
440 KB

6)

### Department Item

a)

**Description:** Noxious Weed Prescriptions

**Contact:** Michael Murphy, Noxious Weed Specialist II

**Action:** Move to approve the noxious weed prescriptions for eggleaf spurge, garlic mustard, hanging sedge, lesser celandine, and slenderflower, Italian and Turkish thistles.



BoH-AIS-2022-12-13-PublicWorks-AngelaCelestine-4832.pdf  
PDF File  
4.59 MB

7)

### Department Item

a)

**Description:** Alternate Health Officer Appointment

**Contact:** David Bayne, Public Health & Social Services Director

**Action:** Move to approve the resolution appointing Dr. James Miller, who is the Regional Medical Officer at the Washington State Department of Health, as the acting alternate local health officer for Thurston County for the 2023 year in the absence or incapacity of Dr. Dimyana Abdelmalek.



BoH-AIS-2023-03-14-CommissionersOffice-JamieCaldwell-0748.pdf  
PDF File  
96.5 KB

**8) Department Item**

a) **Description:** Fiscal Subcommittee

**Contact:** Jamie Caldwell, Clerk of the Board

**Action:** Move to create the Board of Health Fiscal Subcommittee



BoH-AIS-2023-03-07-  
CommissionersOffice-  
JamieCaldwell-5756.pdf  
PDF File  
96.5 KB

**9) Health Officer's Report**

Dr. Dimyana Abdelmalek will report on various items.

**10) Adjournment**

**Motion:** Move to adjourn the Board of Health meeting of March 14, 2023.

**Disability Accommodations:** Room 110 is equipped with an assistive listening system and is wheelchair accessible. To request disability accommodations call the Reasonable Accommodation Coordinator at 360-786-5440. Persons with speech or hearing disabilities may call via Washington Relay: 711 or 800-833-6388.



## Board of Health AGENDA ITEM SUMMARY

**Agenda Date:** 03/14/2023

Date Created: 3/3/2023

Agenda Item #:

Created by: Jamie Caldwell, Clerk of the Board - Commissioners Office - 360-786-5440

Presenter: **Jamie Caldwell, Clerk of the Board - Commissioners Office - 360-786-5440**

**Item Title:**

International Transgender Visibility Day

**Action Needed:** Other

**Class of Item:** Department

**List of Exhibits**



03142023 International  
Trans Visibility Day  
Proclamation.pdf  
PDF File  
63.6 KB

**Recommended Action:**

The Board of Health will proclaim March 31st at International Transgender Visibility Day in Thurston County

**Item Description:**

None

Date Submitted: 3/3/2023



THURSTON COUNTY

# Proclamation

## International Transgender Visibility Day

***WHEREAS,** International Transgender Visibility Day was founded in 2009 to acknowledge and honor the successes achieved by transgender people by U.S. Based transgender activist Rachel Crandall, a licensed psychotherapist and the Executive Director of Transgender Michigan; and*

***WHEREAS,** Organizations across the world celebrate International Transgender Visibility Day as an annual day to celebrate the accomplishments and victories of transgender and gender non-conforming people while raising awareness of the work still needed to save transgender lives; and*

***WHEREAS,** International Transgender Visibility Day is intended to recognize and celebrate the work being done by transgender advocacy groups as they fight for dignity and equal rights for members of the transgender community, to build inclusive and healing spaces, and to protect and defend those who are most vulnerable; and*

***WHEREAS,** Thurston County recognizes the significant contributions made by transgender people and affirms they are vital members of our community.*

***NOW THEREFORE, BE IT RESOLVED,** the Board of Thurston County Commissioners hereby proclaims March 31<sup>st</sup> as International Transgender Visibility Day in Thurston County and urge residents to honor the lives of those lost through participation in community service and remembrance ceremonies.*

Adopted this 14<sup>th</sup> day of March 2023  
BOARD OF HEALTH

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## Board of Health AGENDA ITEM SUMMARY

**Agenda Date:** 03/14/2023

Date Created: 3/1/2023

Agenda Item #:

Created by: Jamie Caldwell, Clerk of the Board - Commissioners Office - 360-786-5440

Presenter: **Jamie Caldwell, Clerk of the Board - Commissioners Office - 360-786-5440**

**Item Title:**

Opioid & Fentanyl Epidemic Update

**Action Needed:** Other

**Class of Item:** Department

**List of Exhibits**

 File Attachment

**Recommended Action:**

The Coroner, Prosecuting Attorney, and Sheriff will provide the Board of Health with an update on the opioid and fentanyl epidemic in Thurston County.

**Item Description:**

None.

Date Submitted: 3/1/2023



# THURSTON COUNTY NARCOTICS TASK FORCE

**Commander – Lieutenant Tim Rudloff (TCSO)**

**Supervisor – Malcolm McIver (TCSO)**

Detective - Jordan Goss (TCSO)

Detective - Tyson Shenkel (TCSO)

CCS - Brett Curtright (DOC)

CCS - John Tulloch (DOC)

Special Agent - Gabe Stajduhar (HSI)

Criminal DPA - Beth McMullen (TCPO)

Civil DPA – Rick Peters (TCPO)

Legal Assistant - Chris Spradley (TNT)



# TNT AGENCY PARTICIPATION 2022

Thurston County Sheriff's Office	(4) Members - Coordinator, Commander, Sergeant and two Detectives
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Washington State Patrol	(1) Member - Detective
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Thurston County Prosecutor	(2) Members - Deputy Prosecutors, one criminal and one civil
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Washington State Department of Corrections	(2) Members - Community Corrections Specialists * US Marshall TFOs'
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Homeland Security Investigations	(1) Member - Special Agent
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Bureau of Alcohol, Tobacco and Firearms	(1) Liaison - Special Agent
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Thurston County Narcotics Task Force	(1) Employee - Office Assistant
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# TNT OPIATE SEIZURES FOR 2022

HEROIN



1,329.4 GRAMS  
or  
(2.93 POUNDS)

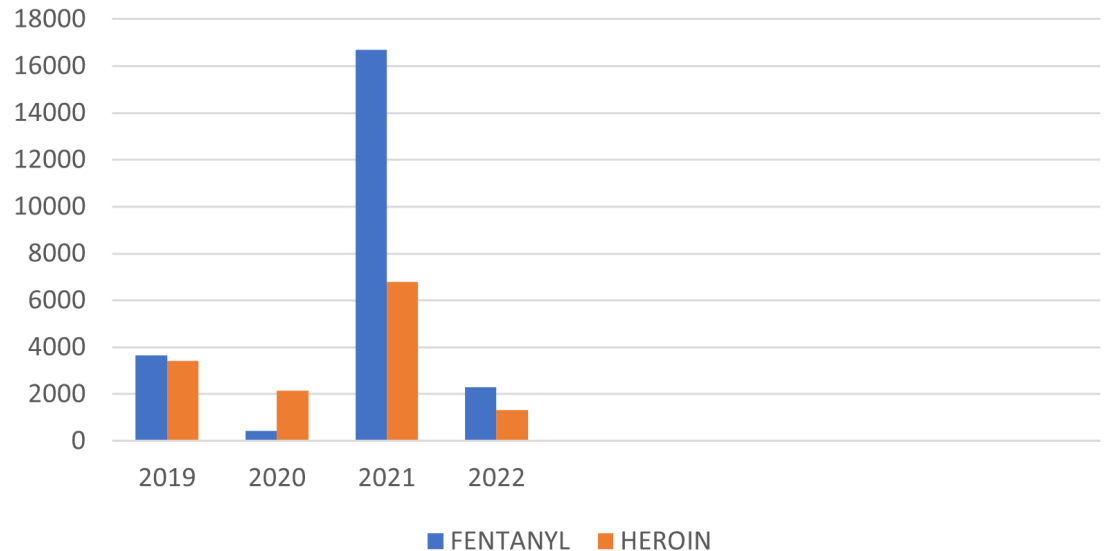
FENTANYL



2,282 GRAMS  
or  
(5.03 POUNDS)

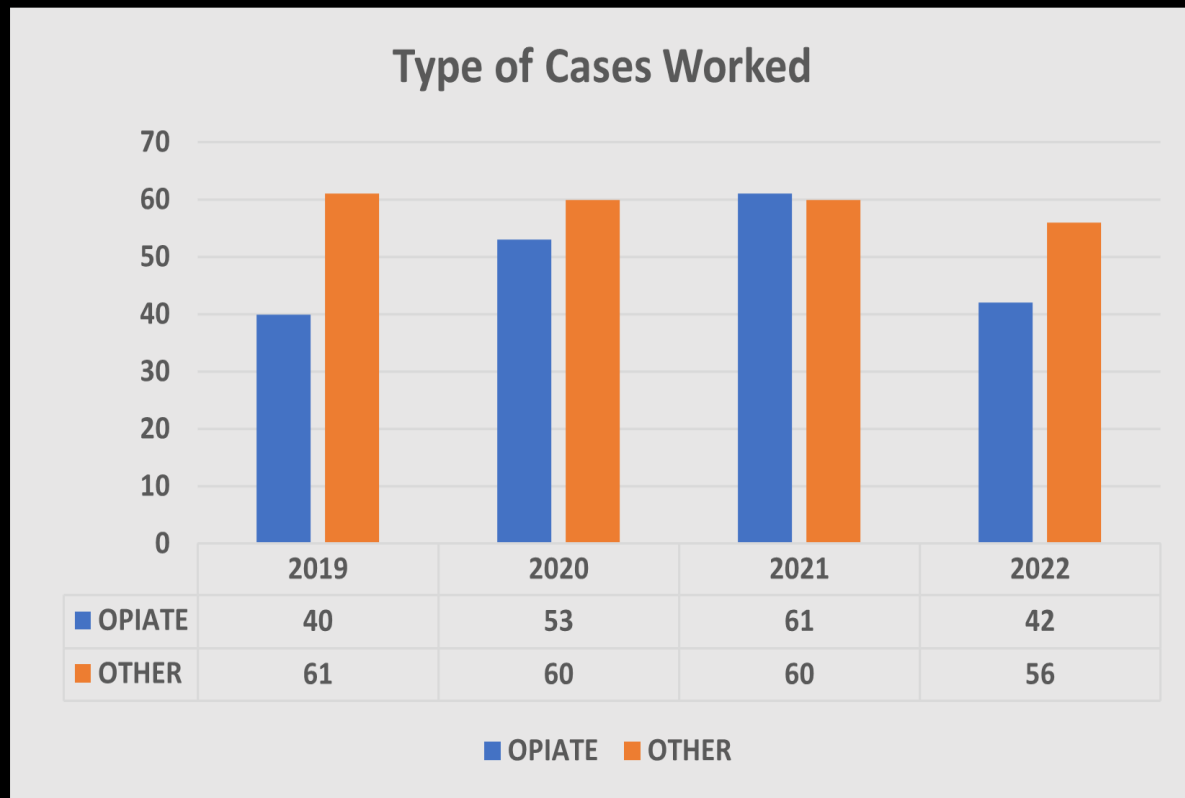
- Opiates seizures are not only related to the desired focus of TNT investigations. Other factors include allocated funds to purchase drug evidence and availability of viable confidential informants.
- Downward trend examples of this effect occurred in 2020 with the loss of the Federal Byrne JAG grant and again in 2022 when our confidential informant pool dwindled due to simple drug possession laws being eliminated.

## OPIATE 4 YEAR TREND SEIZURES FOR TNT



# TNT OPIATE CASE WORK PRIORITIZED

Since 2019, TNT's opiate cases in relation to all other combined types of drug cases worked has been steadily above a 60% ratio.






## LOOKING AHEAD

- As the parent agency of the drug task force, the Sheriff's Office will continue to pursue logical ideas to help combat the opioid epidemic. Examples being implemented include:

- 1) Adopting an overdose death investigation check list to improve the potential to pursue illegal drug homicide cases related to opiate crisis.
- 2) Promote partnerships with local, State and Federal Law Enforcement Agencies in pursuit of bringing additional Law Enforcement staffing to TNT. This is vastly important with the understanding that TNT is the only investigative body primarily dedicated to combatting the influx of opiates into our Thurston County communities. The City Police Departments within Thurston County are critically needed to join the fight and share the burden.
- 3) Continue supporting governmental, public, and private based entities which provide opiate addiction treatment and recovery services. The Sheriff's Office recognizes that "enforcement action" is only one part of the fight. Provider based services play a vital role in the opioid epidemic. Individual opiate treatment and recovery options, as it relates to causation of an enforcement action, is always the goal of the Sheriff's Office.
- 4) Actively participate in known public or private forums that will welcome members of the Sheriff's Office in an effort to spread awareness and education on the opioid epidemic. We acknowledge the public health danger of opiates and in particular, of fentanyl. This single opiate drug is, and has been increasing in popularity with opiate addicts over the last several years. It has driven unintentional drug overdose death rates up dramatically within Thurston County.





Thurston  
County  
Coroner's  
Office

# OVERDOSE DEATHS IN THURSTON COUNTY

# WHAT IS FENTANYL?

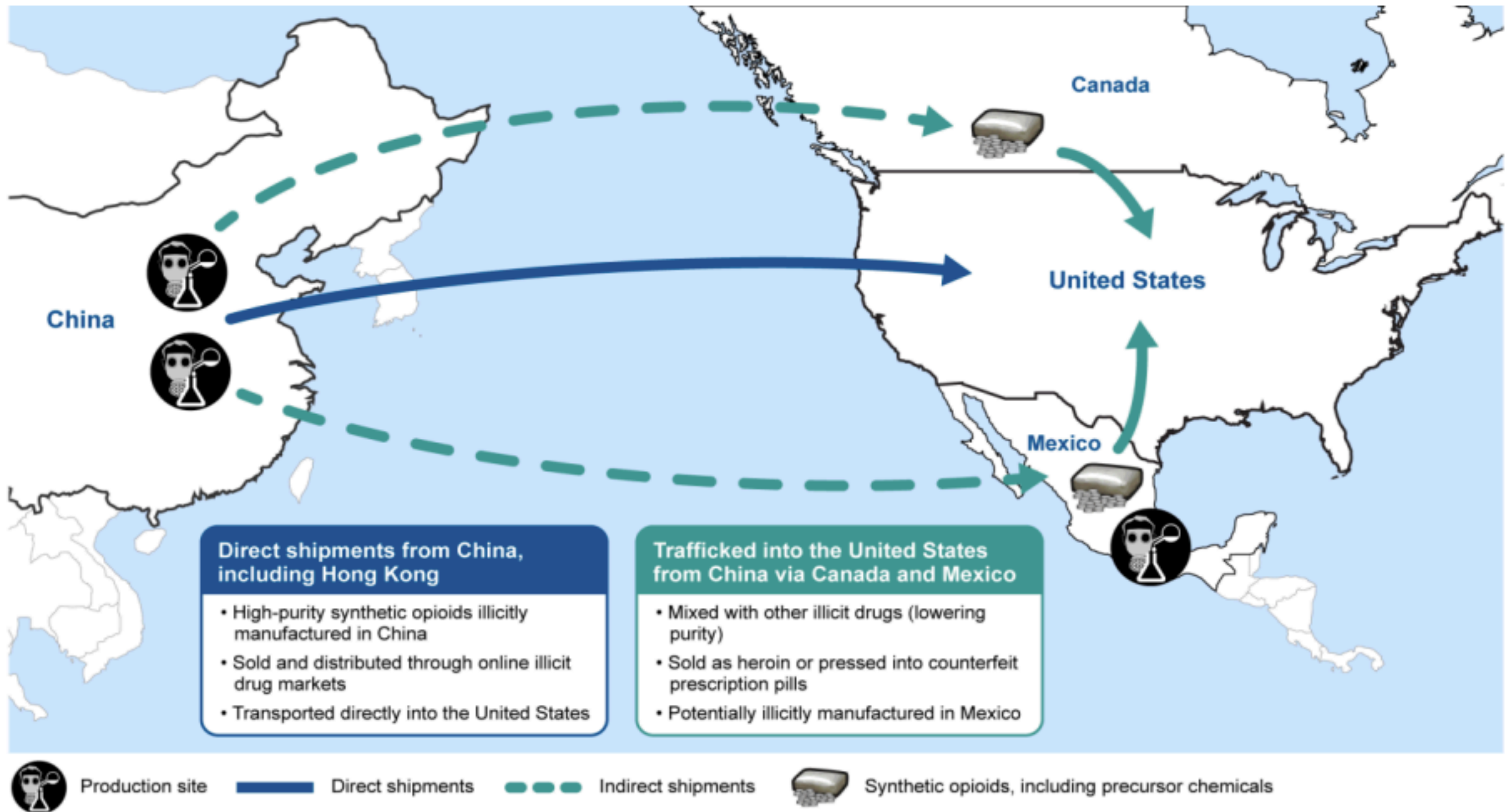
- Synthetic Opioid: 50x-100x more powerful than morphine
- Present in numerous drugs: meth, cocaine, ecstasy, counterfeit pills
- Cheap, more addictive
- Many users don't know they are purchasing fentanyl – which often results in overdose deaths.



~MANUFACTURING~

HOW THE DRUG MAKES ITS WAY INTO  
OUR COMMUNITIES

**Figure 1: Illicit Synthetic Opioid Flows from China**



# COUNTERFEIT DRUGS

## OXYCODONE



**REAL**

**FAKE**

## ADDERALL



**REAL**

**FAKE**

SOURCE: DEA





# Counterfeit Xanax

**REAL**



**FAKE**





# ~COMMON DRUGS OF ABUSE~



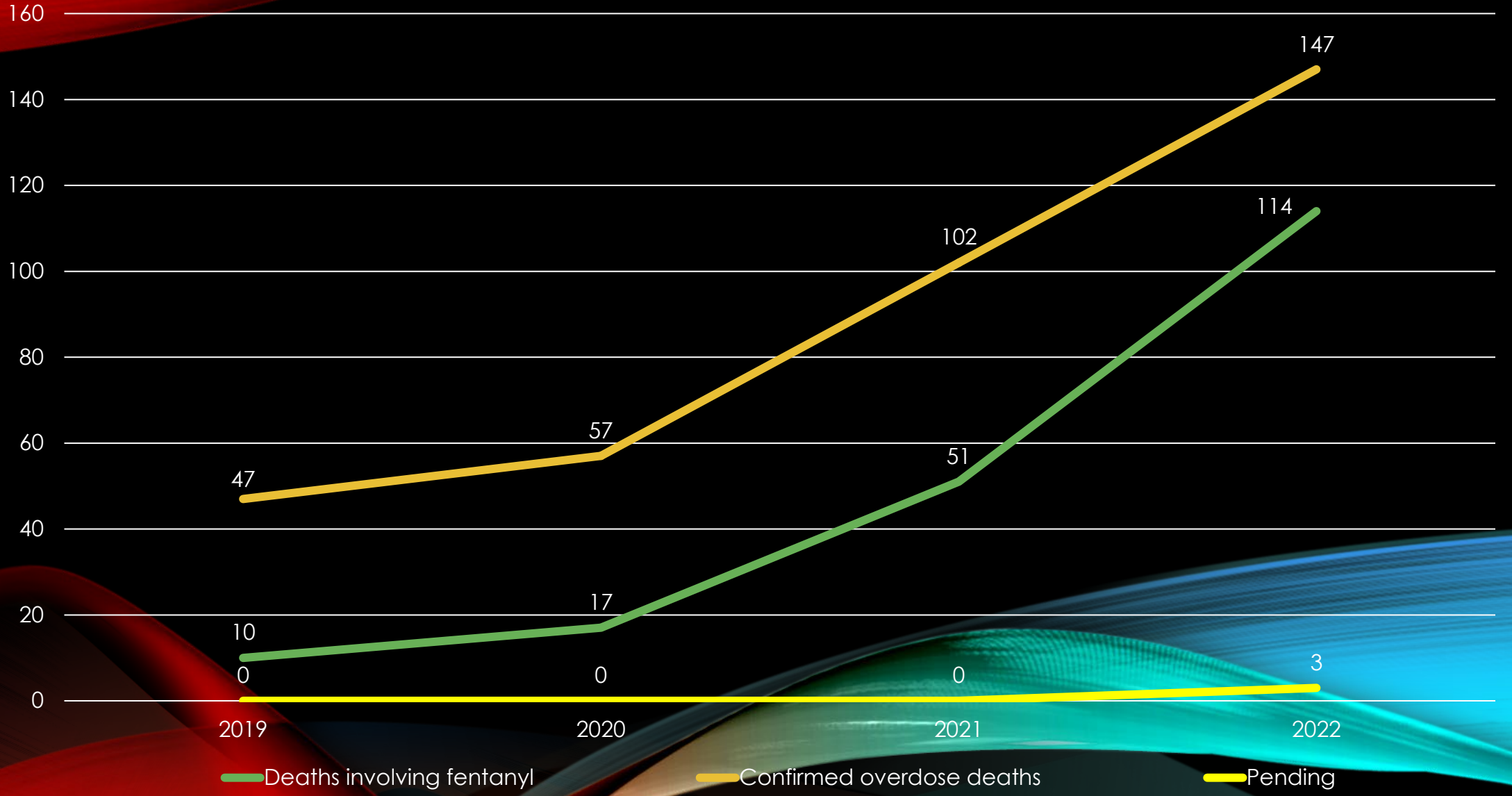


# ~LETHAL DOSE OF FENTANYL~





# OVERDOSE DEATHS FOR THURSTON COUNTY





# OVERDOSE DEATHS 2022

**Total - 147**

Males – 109  
Age Range 18-77

Females – 37  
Age Range 0-72

Gender Neutral – 1  
Age 24

ONE  
PILL CAN  
KILL





## Board of Health AGENDA ITEM SUMMARY

**Agenda Date:** 03/14/2023

Date Created: 3/2/2023

Agenda Item #:

Created by: Jamie Caldwell, Clerk of the Board - Commissioners Office - 360-786-5440

Presenter: **Sammy Berg, Senior Environmental Health Specialist - Environmental Health - 360-867-2568**

### Item Title:

Permitting Option for Temporary Food Establishments

**Action Needed:** Pass Motion

**Class of Item:** Department

### List of Exhibits



2023 Continuation of  
Street-Style Food Policy  
BOH presentation  
14Mar2023.pdf  
PDF File  
357 KB

### Recommended Action:

Move to approve the permitting options for temporary food establishments that propose to operate year-round at multiple venues, without connection to a public event, and authorize staff to implement the final policy.

### Item Description:

This continues the review of permitting options for temporary food establishments from the February 14, 2023, Board of Health meeting. In 2022 the Board of Health directed Environmental Health staff to develop an approval pathway to allow food vendors to operate year-round, at multiple locations, and without connection to public events (street-style food vending). Staff presented a program proposal to the Board of Health on February 14, 2023. Staff seek direction so they can finalize the program proposal and develop the policies needed to implement it.

Date Submitted: 3/2/2023



# A Proposed Policy for Routine Food Vending – *Continued Conversation*



Sammy Berg, RS

Senior Environmental Health Specialist



Public Health and Social Services Department  
<http://www.co.thurston.wa.us/health>

May 2022 – Board of Health  
directed staff to provide a pathway  
for routine food vending

We developed a pilot process, using  
temporary food permits for the  
summer and then coming back to  
the board with recommendations

## Occasional food preparation standards

- Jug of water and bucket for hand washing, tubs for washing dishes
- Cooler and ice for cold holding
- Tarp for a ceiling, no walls

Temporary set-ups have challenges:

- Remembering to bring everything, every time
- Weather/seasons have a huge impact

# Proposed Requirements

- Work out of an approved commissary
- Have a limited menu
- Have portable handwash sink and refrigerator
- Have their sales locations approved
- Take enhanced food safety training (required by new Food Code this year)



	Pilot project – temporary permit		Proposed – annual permit with variance	
Annual Application and permit	\$500	Needs to be submitted every year	\$750 app \$610 permit	One-time application and annual permit
Equipment	N/A	Use existing equipment	\$3000 (est)	Handwash cabinet and refrigerator (prices for new equipment)
Training	\$10	Basic foodworker card	\$200	Food safety training (5 yr certificate)
Commissary	N/A		Market \$	
Variance	N/A		\$425 one-time	2022 participants would not be charged
Limitations	Vendor – limited to <b>three days</b> per week, food purchased every day (extra cost) Public – reduced food safety potential		Vendor – mostly upfront, one-time costs	
Benefits			Vendor - <b>seven days</b> a week, set-up costs far less than food truck Public - more consistent food safety	

# Protecting Customers

Food safety standards are met through a combination of:

- Matching menu with equipment
- Providing robust equipment, specifically handwash and refrigeration, and use of approved kitchens
- Increased food safety training (new code requirement)

# Draft Policy

Based on our experiences and feedback, we propose:

- Combine variance process with annual mobile food permit
  - Enhanced equipment
  - Mobile food application
- Allow continued operation while the vendors go through review and get the added equipment
- For other folks under temporary permits, they would be limited to 4 self-events per year

# Questions / Comments?

We will continue work with vendors and stakeholders to evaluate the process.

# Program contact information

- **Sammy Berg, RS**

Supervisor, Food & Environmental Services Section  
Environmental Health Division

- **Phone:** 360.867.2568

- **Email:** [sammy.berg@co.thurston.wa.us](mailto:sammy.berg@co.thurston.wa.us)

- **Website:** <https://www.thurstoncountywa.gov/phss/Pages/food-safety-guidance.aspx>



## Board of Health AGENDA ITEM SUMMARY

**Agenda Date:** 03/14/2023

Date Created: 11/22/2022

Agenda Item #:

Created by: Angela Celestine, Administrative Assistant I - Public Works - 786-5833

Presenter: **Michael Murphy, Noxious Weed Specialist II - Water Resources - 360-786-5576**

### Item Title:

Noxious Weed Prescriptions

**Action Needed:** Pass Motion

**Class of Item:** Department

### List of Exhibits



IPMPolicy\_REV121614  
(1).pdf  
PDF File  
61.0 KB



Eggleaf  
spurge\_final\_\_03022023  
.pub.pdf  
PDF File  
1.17 MB



GarlicMustard\_final\_030  
22023.pdf  
PDF File  
648 KB



Hanging  
Sedge\_03022023.pdf  
PDF File  
1.58 MB



Lesser  
Celandine\_final\_030220  
23.pdf  
PDF File  
481 KB

SIT - Thistle final  
\_03022023.pdf  
PDF File  
607 KB

**Recommended Action:**

Move to approve the noxious weed prescriptions for eggleaf spurge, garlic mustard, hanging sedge, lesser celandine, and slenderflower, Italian and Turkish thistles.

**Item Description:**

Noxious weeds threaten public health, the environment, wildlife habitat, native plants, agriculture areas, and recreational areas. State law requires property owners to eradicate, control, or prevent the spread of noxious weeds.

Thurston County's Integrated Pest and Management Policy, administered by the Public Health and Social Services Department, requires species-specific prescriptions for noxious weeds be developed, reviewed by the Pest and Vegetation Management Advisory Committee (PVMAC), and approved by the Board of Health prior to the use of herbicides.

The attached prescriptions address the following noxious weed species:

- Eggleaf spurge
- Garlic mustard
- Hanging sedge
- Lesser celandine
- Slenderflower, Italian and Turkish thistles

These prescriptions were developed by the Thurston County Public Works Noxious Weeds Program to be used by county staff and the public as a tool to support the eradication and prevention of noxious weeds. All five prescriptions were reviewed by the PVMAC and are recommended for approval.

This action is in alignment with the County's Strategic Plan Initiative 9 to "Support environmental health and climate stabilization".

Date Submitted: 11/22/2022



# Public Works

## Noxious Weed Prescription Approval Presentation

Mike Murphy – Noxious Weed Specialist II

Patrick Soderberg – IPM Program Coordinator

March 14, 2023



# Noxious Weed Prescriptions

**THURSTON COUNTY NOXIOUS WEED FACT SHEET**

## Hanging Sedge (*Carex pendula*)

**Description:**  
Hanging Sedge is a large, non-native, perennial, evergreen sedge. It grows 3 to 6 feet tall and 3.3 feet wide, forming loose clumps. The leaves are green and hairless, with a red-purple base. Hanging sedge has pendulous, off-white to light yellow inflorescence, that are 3 to 12 inches long. It blooms from May to September. The fruits are small (2.6 to 4 mm long) and three sided. Flowers and fruits appear brown once they have matured.

**Impacts:**  
Hanging sedge is native to Europe, Northern Africa and Western Asia. It was introduced to the Pacific Northwest as an ornamental plant. It can readily escape cultivation, becoming invasive in moist, shaded sites along creeks, trails, wet ditches, drainages, riparian areas and in forest understories. It forms dense patches, and outcompetes native vegetation. This negatively impacts local ecosystems by altering plant communities and reducing forage and habitat for wildlife. In parts of Oregon, hanging sedge has been found reaching up to 85% ground cover at some sites. It reproduces by seed or rhizomes. One mature plant can produce up to 20,000 seeds, which spread easily in water and can have a germination rate of up to 90%.

**Control Options:**  
Thurston County's Integrated Pest Management emphasizes cultural, biological, and manual control methods to keep pests and vegetation problems low enough to prevent damage. The strategy of Thurston County's IPM policy is to minimize the use of pesticides. You should monitor the site in subsequent growing seasons and control any re-growth that may occur.

▶ **Cultural / Habitat**  
The most effective control of hanging sedge is prevention. Wherever possible, prevent plants from going to seed. If an area is known to be infested, it's important to minimize soil disturbance, which can encourage seed germination. Replant an area with native vegetation to add competition and prevent re-establishment of hanging sedge. Improving drainage can help to change site conditions and discourage hanging sedge establishment in an area. Clean vehicles, boots, clothing, and pets after visiting and area infested with hanging sedge.

▶ **Manual / Mechanical**  
Small, isolated infestations (< 20 plants) can be dug out. Be sure to remove all roots as they can re-sprout into new plants. Take care to minimize ground disturbance and replant an area with native or desired vegetation to add competition. For larger infestations (> 20 plants) chemical control may be necessary. If plants are flowering or going to seed it may be necessary to deadhead and bag material to prevent seed dispersal. Cutting or mowing plants can help to delay seed production.

▶ **Biological**  
There are no bio-controls available for hanging sedge in Washington.



- A noxious weed prescription is written soon after a plant is added to the state noxious weed list or is found in the County through surveys
- A prescription is a species-specific control or eradication plan
- Incorporates Integrated Pest Management (IPM) control options (cultural, manual, biological, and chemical)
- Provides a description of the plant
- Used as a reference for noxious weed staff when treating on County properties



# The Three Classes of Noxious Weeds

- Class A
  - Often newcomers or not present at all
  - High priority and goal is to eradicate before it gains a foothold
  - Eradication is required in accordance with RCW.17.10
- Class B
  - Control is dependent on county and distribution
  - Washington State Noxious Weed Control Board designates where control is required
- Class C
  - Widespread and eradication likely not possible
  - County weed board can require control if it poses a threat to agriculture or natural resources



# Eggleaf Spurge

- Class A noxious weed (requires eradication state-wide)
- Toxic to humans and livestock
- Seeds can eject 16' and remain viable for 8 years
- Infestation in hayfields can contaminate crop



Marty Hudson, Klickitat County NWCB





# Eggleaf Spurge (Continued)

- A single plant was found in 2021 and controlled manually
- We perform annual maintenance at that location to pull any new seedlings
- Currently, our one site is under control with hand pulling
- A large infestation may require chemical control





# Garlic Mustard

- Class A noxious weed (requires eradication state-wide)
- Threat to native vegetation through competition and allelopathy
- Found in 2021 (site less than 0.25 acres)
- On private property and City of Olympia right-of way
- Quick response from property owners and City stopped spread
- Site was large enough that it required a combination of manual and chemical control





# Garlic Mustard (Continued)





# Slenderflower, Italian & Turkish Thistles

- Class A noxious weeds (requires eradication state-wide)
  - Lumped together because of similar characteristics (taproot, spiny stems, and clustered flowers)
- Outcompetes vegetation in pastures
- Other thistles much more prevalent and control not required (Canada and bull)
- Only have slenderflower in County
- Currently 6 sites, 3 on I-5 being managed by WSDOT and 3 on farms being monitored
- Manual control is possible if less than 20 plants
- Chemical control is required for large infestations





# Hanging Sedge

- Class B noxious weed (requires control in Thurston County)
- Outcompetes native vegetation through ground coverage and prolific seed production
- Invades riparian areas
- Found in 2021 (3 sites initially)
- Currently 9 sites on private property, 1 on ROW
- Property owners are aware and have removed manually or not allowing seed production
- A large site that has been allowed to seed would require chemical control to prevent spread in riparian systems





# Lesser Celandine

- Class B noxious weed (requires control in Thurston County)
- Outcompetes native vegetation and spreads through seeds, clippings, and soil
- Currently 11 sites but is spreading in urban areas
- Manual control is difficult because of tubers left in soil
- Chemical control is most effective option
- When chemical control is used it is critical to treat before flowering
  - So far, not on County property
  - Once pointed out to homeowners they realize it's a problem and want to treat it





# Lesser Celandine (Continued)



# Summary

## **Class A (Eradication Required)**

- Eggleaf Spurge – Imazapyr
- Garlic Mustard – Triclopyr
- Slenderflower, Italian, and Turkish Thistles – Triclopyr and Aminopyralid

## **Class B (Designated Control in Thurston County)**

- Hanging Sedge – Imazapyr
- Lesser Celandine – Glyphosate and Triclopyr (test plots)



# Pest and Vegetation Advisory Committee Prescription Review

- I. Evaluate the pesticide hazard reviews conducted by Environmental Health;
- II. Evaluate and make program recommendations on IPM prescriptions;
- III. Provide recommendation to Board of Health on adoption of prescriptions.



# Board of Health

## Prescription Review Criteria

IPM prescriptions involving application of pesticides to Sensitive Areas or include a high hazard pesticide shall be approved by the Thurston County Board of Health at a public meeting.

### Board of Health review criteria:

- I. The pest and vegetation problem has been assessed, and the action level has been met;
- II. The use of the pesticide is a necessary element of the integrated pest and vegetation management prescription;
- III. The risk to public health, ground water, and the environment is determined to be minimal.





# Board of Health Prescription Review

## Board of Health review criteria:

- I. The pest and vegetation problem has been assessed, and the action level has been met;  
All listed noxious weeds are required to be controlled.
- II. The use of the pesticide is a necessary element of the integrated pest and vegetation management prescription;  
At some level of infestation each of the 5 listed noxious weeds will require herbicides to control them.
- III. The risk to public health, ground water, and the environment is determined to be minimal.  
Aminopyralid – (moderate hazard – very low toxicity but mobile and persistent)  
Imazapyr – (moderate hazard – very low toxicity but mobile and persistent)  
Triclopyr – (moderate hazard – broadcast applications at high concentrations increases toxicity hazard to birds and small animals, low hazard to humans)  
Glyphosate – (high hazard – probable human carcinogen)



# Questions?



THURSTON COUNTY PEST AND  
VEGETATION MANAGEMENT POLICY

Revised: 12/16/2014

Section 1. Purpose.

The purpose of this policy is to provide guidelines for county personnel who are involved with operations and provide advice related to pests and vegetation management. This policy will not govern private parties on private land or other government agencies. It is the intent of the county to set an example in implementing integrated pest and vegetation management programs that minimize the use of pesticides.

Section 2. Definitions.

Integrated Pest Management (IPM). An approach to pest and vegetation control that utilizes regular monitoring to determine if and when treatments are needed. The approach emphasizes physical, mechanical, cultural, and biological tactics to keep pest numbers or vegetation problems low enough to prevent intolerable damage, annoyance, or public safety hazards. When chemical controls are necessary, they will be the least toxic available and will be used only when no other control methods would be effective or practical. The components of an IPM program are:

- I. Monitoring involves surveying the problem situation in order to understand and identify the extent and location of the problem;



- II. Determining injury and action levels.
  - A. Injury level refers to the point in the growth of the pest or vegetation problem at which it will cause some unacceptable level of safety, recreational, public health, ecosystem, aesthetic, or economic injury.
  - B. Action level is the level at which action must be taken to prevent a pest population or vegetation problem at a specific site from reaching the injury level.
- III. Timing involves applying a treatment action during the most vulnerable time in the life cycle of the pest or vegetation with the least impact on natural enemies.
- IV. Selecting optimal strategies. The goals for selecting treatment tactics and developing pest management strategies include:
  - A. Least disruptive of those natural controls which are present;
  - B. Least hazardous to human health;
  - C. Minimal impact to non-target organisms;
  - D. Least damaging to the general environment;
  - E. Best preserves the natural system;
  - F. Most likely to produce permanent reduction in the pest and vegetation;
  - G. Ability to carry out effectively;
  - H. Cost effectiveness in short and long term.

- V. Evaluating treatment strategies is required to help assess the effectiveness of the control program. These records will be useful in developing future control strategies.

IPM prescriptions - are control or eradication plans utilizing the principals of IPM that are specific to types of sites and/ or pests and vegetation.

IPM programs - are department-level programs that are developed to implement the Pest and Vegetation Management Policy.

Pest - Any insect, rodent, nematode, snail, slug, weed and any form of plant or animal life or virus, except virus on or in a living person or other animal, that adversely interferes with the aesthetic, health, environmental, or economic goals of humans.

Pesticide - Any substance registered by the Washington State Department of Agriculture as a pesticide.

IPM Program Coordinator - The Environmental Health Division Director or his or her designee.

### Section 3. Affected Departments and Programs.

The policy applies to all Thurston County departments and programs involved directly or indirectly in pest and/ or vegetation management. The giving of advice to the public on management of pests and vegetation is subject only to Section 5.

#### Section 4. Integrated Pest and Vegetation Management Programs.

Departments and programs managing pests or vegetation will develop and implement comprehensive written integrated pest and vegetation management programs in accordance with the requirements of this policy.

All programs will be initially accountable to the public through approval from the Thurston County Board of County Commissioners. After the initial IPM program has been approved by the Board of County Commissioners, the departments shall submit an annual report to the Pest and Vegetation Management Advisory Committee and the IPM Program Coordinator. The report shall include:

- A. Identification of any changes made in the implementation of the approved program.
- B. Evaluation of the previous year's program.
- C. An implementation plan for the current year.
- D. List of pesticides used, amount of pesticides applied, location of application, pest controlled, and name of applicator.

The integrated pest and vegetation management programs shall include the following elements:

- I. Goals and objectives of the program.
- II. Existing county and department-wide policies and laws pertaining to the control of vegetation and pests and the use of pesticides.

- III. General description of the scope of responsibility with a general description of properties maintained.
- IV. Program policy statements for implementing the Pest and Vegetation Management Policy will include, at a minimum:
  - A. Pest and vegetation management considerations in the design, remodeling, and building of all county facilities, parks, and roads;
  - B. IPM policy requirements in bid specifications for contracts by those affected by this policy;
  - C. A recognition of the responsibility for the control of noxious weeds and the need to coordinate with the Noxious Weed Control Board.
- V. Operational guidelines and standards for general maintenance activities, and IPM prescriptions as needed for specific pests.
- VI. Procedures for at least the following:
  - A. Public notification of pesticide applications:
    - 1. Develop posting procedures that are in compliance with federal and Washington State requirements, and county guidelines and policies. Posting must include name of pesticide, anticipated or actual date of application, description of application area, phone number of department, and contact person. In order to reduce the likelihood of uninformed

exposure to chemical applications, notification shall be posted in a timely manner prior to and subsequent to the application of pesticides.

2. Public notification in addition to posting shall comply with federal and state laws. Notification may include identified known interested or affected parties, residents, and adjacent property owners.

B. Receiving approval from the Board of Health. Any application of pesticides in a Sensitive Area will require approval from the Board of Health.

C. Application procedures.

1. Develop pesticide application procedures in accordance with (1) federal and state requirements and county guidelines, (2) Integrated Pest Management procedures, and (3) the following:

- a. County personnel and agents shall not apply two or more pesticides simultaneously;
- b. County personnel and agents who apply pesticides shall be licensed by Washington State as Public Pesticide Operators;
- c. County personnel or their agents that perform broadcast pesticide applications shall develop calibration procedures and calibrate application equipment at least annually or

when equipment is put into service and maintain documentation for each calibration.

2. Develop record-keeping procedures for the application of pesticides, which will be kept for a minimum of 20 years. Pesticide application records will include:

- a. Date and time of pesticide application;
- b. Specific location of application;
- c. Purpose of application (target species);
- d. Material, lot number, EPA registration number, amount, rate, and concentration used;
- e. Method of application;
- f. Temperature, wind speed and direction, weather conditions;
- g. Applicator's name and operator's license number;
- h. Apparatus license plate number or equipment number;
- i. Evaluation of results.

D. Pesticide spill response procedures. Develop notification and response procedures in accordance with federal, state, and county requirements in the event of a pesticide spill.

E. Pesticide storage. Develop pesticide storage procedures in accordance with federal, state, and county requirements.

- F.     Cleaning of equipment. Develop procedures describing the actions taken in cleaning equipment and disposing of rinsate.
  - G.     Transportation of pesticides. Develop procedures describing the transportation of pesticides in accordance with federal and state laws, and describe the precautions taken in transporting pesticides.
- VII.    Long-term time lines, if appropriate, for program development and policy implementation, e.g. 1 to 5- and 10-year plans. Anticipated major budget implications shall also be included in the plan, for example major equipment acquisition and changes in personnel levels.

#### Section 5. Providing Advice To the Public.

Advice on the management of pests and vegetation given to the public or other agencies shall comply with the following:

- I.     Advice will be consistent with the intent of the Pest and Vegetation Management Policy;
- II.    Advice shall include information on IPM, sensitive area issues, and alternative control measures to pesticides;
- III.   If advice on pesticides is provided, recommend, whenever possible, a pesticide that has passed the Thurston County Environmental Health Division pesticide review criteria. However, when a review has not been performed, or a pesticide

has been rejected for use by the county, information about safety, precautions, and any known chemical hazards should be provided;

- IV. Advice on application of pesticides must be in strict compliance with label directions. A county employee providing such advice shall be licensed by the Washington State Department of Agriculture as Public Pesticide Operator or Public Pest Control Consultant.

#### Section 6. Sensitive Areas.

- I. Proposals to apply pesticides to Sensitive Areas shall require approval from the Thurston County Board of Health. Site- and/or pest-specific IPM prescriptions must be submitted along with the recommended pesticide to the IPM Program Coordinator, the Pest and Vegetation Management Advisory Committee, then the Board of Health for approval.
- II. For purposes of this policy, Sensitive Areas include:
  - A. Surface waters, including lakes, ponds, and both perennial and intermittent streams.
  - B. Critical Aquifer Recharge Areas Categories I, II, and III as defined in the Thurston County Code Ch. 24.10.
  - C. Any areas identified through the Washington State Department of Natural Resources Natural Heritage Program or by the Washington State Department of Fish and Wildlife as having sensitive, threatened or



endangered species.

- D. Sanitary Control Areas of any known well or spring location as defined in the Washington State Drinking Regulations (WAC 246-290, WAC 246 291) or Article III of the Sanitary Code for Thurston County.
- E. Stormwater ditches, swales, and retention/detention ponds.
- F. Wetlands, as defined in the Thurston County Critical Areas Ordinance.
- G. Buffer zones - a minimum of 100 feet from those areas listed above in this subsection.

III. The Washington State Department of Ecology provides the opportunity for Thurston County government to comment on pesticide application permits in Thurston County waterways. The intent of these comments shall be to encourage development programs that minimize the use of pesticides. Staff will evaluate the requests for pesticide applications based on the following criteria:

- A. The pest and vegetation problem has been assessed, and control is deemed necessary;
- B. The use of the pesticide is a necessary element of an integrated pest and vegetation management prescription, or the proponent is making significant progress in developing and implementing IPM programs;
- C. The risk to public health, ground water, and the environment is shown to

be minimal.

Proposals or applications that do not meet these criteria will be opposed by Thurston County.

Section 7. Board of County Commissioners and the Board of Health.

The Thurston County Board of County Commissioners will initially approve county departments' IPM programs. Thereafter, the Pest and Vegetation Management Advisory Committee will report to the Board of County Commissioners on implementation of the programs.

IPM prescriptions involving application of pesticides to Sensitive Areas shall be approved by the Thurston County Board of Health at a public meeting. Approval from the Board of Health will also be required to use a pesticide that fails the review process or in an emergency situation when a review has not been performed. The criteria that the Board of Health will use are:

- I. The pest and vegetation problem has been assessed, and the action level has been met;
- II. The use of the pesticide is a necessary element of the integrated pest and vegetation management prescription;
- III. The risk to public health, ground water, and the environment is determined to be minimal.

The Board of County Commissioners or the Board of Health may prohibit or restrict the use of specific pesticides, or products that contain those pesticides, that they find pose unacceptable risks to public health or the environment.

The Board of County Commissioners prohibit the use of the neonicotinoid class of systemic insecticide active ingredients for outdoor use on County owned or managed property. These chemicals are known to cause adverse effects to beneficial pollinators at concentrations expected from registered uses. The prohibited list of neonicotinoid active ingredients includes the following chemicals: acetamiprid, imidacloprid, dinotefuran, clothianidin, and thiamethoxam.

#### Section 8. IPM Program Coordinator.

The IPM Program Coordinator will provide:

- I. Assistance to the departments in implementing this policy.
- II. Staff support to the Pest and Vegetation Management Advisory Committee and assistance in developing and presenting committee recommendations and positions to the Board of Health.
- III. Staff support to the county's IPM Team, an internal committee made up of program managers responsible for implementing the policy.
- IV. Staff assistance and professional recommendations to the Board of Health or the Board of County Commissioners on issues related to pest and vegetation management.

- V. Coordination, comments, and recommendations to state departments and other agencies on policies, permits, and other vegetation and pest management issues affecting Thurston County.
- VI. Support for outreach and educational programs on IPM.
- VII. Comments and recommendations on IPM programs and IPM prescriptions to the Pest and Vegetation Management Advisory Committee, the Board of Health, and Board of County Commissioners.

Section 9. Pesticide Hazard Identification - Review of Pesticides By the Environmental Health Division.

I. Review criteria.

Pesticides used by departments or programs of the county shall be only those that have not failed the Thurston County Environmental Health Division's pesticide review criteria or specifically allowed by the Thurston County Board of Health.

- A. Information to be considered in a review shall include, but not necessarily be limited to: active ingredients, registration status, degradation products, contaminants/ inert ingredients, mobility, persistence, bioaccumulation, acute toxicity, aquatic toxicity, carcinogenicity, developmental and reproductive toxicity, mutagenicity, neurotoxicity, skin/eye irritation, data gaps, and applicator safety. The review will be based on professional consideration of these factors.

The Environmental Health Division is responsible for development and modification of review guidelines. These guidelines are intended to provide consistency in conducting pesticide reviews. The Pest and Vegetation Management Advisory Committee will review the guidelines on a periodic basis and provide recommendations and comments.

B. Only pesticides of the lowest possible hazard shall be used. Except as provided in paragraph C below, pesticides with a high degree of hazard include those having:

1. One or more of four types of chronic toxicity characteristics (carcinogenicity, mutagenicity, reproductive toxicity, and developmental toxicity); or
2. Carcinogenicity, mutagenicity, or reproductive and developmental effects from a single study that are dose-related or major; or
3. Adverse effects in the lab occurring at or near concentrations that may be reached in the environment; or
4. The characteristics of high mobility and persistence; or
5. An acute toxicity (LD50) of less than 50 mg/ kg when tested on mammals.

C. The above factors may be greatly influenced by other considerations, resulting in a low hazard potential. Pesticides that have one of the above characteristics may still be considered to be of low hazard if:

1. Studies with adverse effects are outweighed by studies without adverse effects (considering such factors as test quality, severity of effects, type of species, doses); or
2. Based on a qualitative evaluation of available information, the application technique could not result in exposures toxic to non-target organisms.

## II. Inert or Other Pesticide Ingredients.

If the identity of the inert ingredients is known, the inert ingredients shall be evaluated with as much information as is available. Products containing low hazard ingredients shall be used preferentially. If the identity of the inert ingredients is unknown, preference will be given to pesticides of those manufacturers who provide full disclosure of all ingredients. If toxicological data is not available for an inert ingredient, then EPA's lists of inert ingredients can be reviewed to determine potential hazards and aid in selecting products with the fewest hazards.

Pesticides with inert ingredients on EPA's Lists 1 and 2 (those with known or suspect toxicological concern) shall not be used.

Pesticides with inert ingredients on List 3 (unknown toxicity) will have their Material Safety Data Sheet (MSDS) reviewed to see if the ingredient is listed as a known chemical of

concern. Pesticides with ingredients on List 4 will be used preferentially over products with List 3 ingredients.

Pesticides with inert ingredients on List 4 (minimal concern) will be presumed to satisfy the review criteria.

#### IV. Review process.

All departments and programs of Thurston County and the Pest and Vegetation Management Advisory Committee shall have the opportunity to participate and contribute to the Environmental Health Division review. Environmental Health will accept information from the public for consideration in the review process. Findings from the review will be submitted to the appropriate department or program for consideration and action, and also will be sent to the IPM Program Coordinator. Reviews will be updated as new information becomes available.

#### Section 10. Pest and Vegetation Management Advisory Committee.

In order to assist in implementing this policy, a Pest and Vegetation Management Advisory Committee has been established. The committee may be composed of up to nine people appointed by the Thurston County Board of Health. The Committee shall include two or three members representing agriculture and two or three members representing environmental interests. The committee may also include experts in toxicology and representation from relevant state agencies.



The committee shall review and make recommendations to all departments and programs affected by this policy, the Board of County Commissioners, and the Board of Health, as appropriate, on the following:

- I. The pesticide review conducted by the Environmental Health Division;
- II. The pest and vegetation management programs developed by all Departments and programs affected by this policy. The Committee shall annually review any changes and assess progress in implementation of the programs;
- III. Proposed IPM prescriptions to be considered by the Board of Health.
- IV. Any proposals or requirements to update this policy;
- V. Other assignments made by the Board of Health or Board of County Commissioners.

The committee shall meet as needed or at least once every year for these purposes. The IPM Program Coordinator shall be responsible for providing staff support to the committee with assistance from pertinent departments. The chairperson of the committee shall be selected by its members. The committee shall keep minutes of its meetings and shall regularly report to the Board of Health on its activities.

# Eggleaf Spurge (*Euphorbia oblongata*)

**Description:** Eggleaf spurge is an aggressive, persistent, deep-rooted perennial, that grows to about three feet tall. The leaves are green, oval to egg shaped and about 2.6 inches long. It typically blooms in May. The flowers are bright yellow and grow in a cluster at the end of stems. Young stems are green, then turn red during fall-winter. Eggleaf spurge is native to Turkey and southeast Europe. It was documented in Washington in 1998, and is now present in nine counties, including Thurston.

**Impacts:** If ingested, eggleaf spurge is toxic to humans and livestock. It produces a milky latex/sap that can cause skin irritation, blistering and blindness. When small quantities are ingested, it causes severe irritation to the digestive tract. If ingested in larger amounts it can be fatal. Infestations in hayfields can pose a risk to livestock, contaminate or reduce quality of crop and create economic detriment for agricultural producers.

**Control Options:** Thurston County's Integrated Pest Management (IPM) program emphasizes cultural, biological, and manual control methods to keep pests and vegetation problems low enough to prevent damage. The strategy of Thurston County's IPM policy is to minimize the use of pesticides.

## ► Cultural / Habitat

Good pasture management will help to prevent infestation of eggleaf spurge and other unwanted weeds. Thoroughly clean clothes, vehicles and equipment after working in infested areas. Re-plant areas worked to add competition and reduce re-infestation.

## ► Manual / Mechanical

Take precaution when working with eggleaf spurge to avoid contact with sap. Always wear long sleeves, pants, close-toed shoes, gloves and goggles. Wash hands, clothes and equipment when work is complete. Small patches can be manually removed. Use a hand tool or shovel to remove the taproot. Small root fragments can re-sprout. Mowing and cutting is not an effective method of control. Plants will re-sprout and bloom.

## ► Biological

There are no available bio-controls for eggleaf spurge.



San Juan County NWCB



Thurston County NWCB

## ► Chemical

### Foliar applications:

- Using a spot application, spray plants thoroughly on the stems and leaves enough to be wet but not to the point of dripping. Spot application means the herbicide is applied only to the target plants and not on the surrounding plants or soil.
- Methylated seed oil or a non-ionic surfactant should be added to spray mixes to assist the herbicide in penetrating the leaf surface. Follow label recommendations for the type and amount to use.
- Keep people and pets off treated areas until the spray solution has dried.

**Timing:** Eggleaf spurge should be treated from June to August. For most effective treatment, repeat applications two to three times, with 30 days between treatments. Consult and follow rain-fast time of product.



**Pollinator Protection:** To minimize negative impacts to bees and other pollinators, treatment prior to blooming is recommended. Removal of flowers before treatment can be an option in some situations. If treatment must occur during the blooming period, try to spray early or late in the day; or on cloudy, cool days when pollinators are least active.

Active Ingredient Product	Rates	Mix
Imazapyr: Polaris®	0.75%	Add 1.0 oz (2.0 Tablespoons) concentrated product per gallon of water. Add a non-ionic surfactant (example: Competitor® or Agridex®) to help the herbicide stick to the leaves. To mix 1% surfactant add 1.3 oz (2.6 tablespoons) per 1 gallon. Add to mix after herbicide. Spray plants until wet but not dripping.

**READ AND FOLLOW ALL LABEL DIRECTIONS AND RESTRICTIONS.** Obey all label precautions including site specific and safety measures. Always use personal protective equipment that includes coveralls, chemical resistant gloves, shoes plus socks and protective eyewear. Use of brand names does not connote endorsement and is for reference only. Other formulations of the same herbicides may be available under different product names. Information provided is current as of the date of the fact sheet. Pesticide product registration is renewed annually. Product names and formulations may vary from year to year.

### REFERENCES:

Written Findings of the Washington State Noxious Weed Control Board/Eggleaf Spurge; Pacific Northwest Pest Management Handbook/ spurge, leafy, myrtle spurge, and oblong or eggleaf spurge; Obtaining Selectivity in Wildland Areas Using a Low-volume Directed Spray Herbicide Application, Scott Oneto, University of California Cooperative Extension



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tcweeds@co.thurston.wa.us  
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# Garlic Mustard (*Alliaria petiolata*)

**Description:** Garlic mustard is a cool season biennial herb with stalked, triangular to heart-shaped, coarsely toothed leaves that give off an odor of garlic when crushed. The odor is strongest in the young foliage and roots. First-year plants appear as a rosette of green leaves close to the ground. Rosettes remain green through the winter and develop into mature flowering plants the following spring. The roots of garlic mustard tend to grow horizontally just below the soil surface before resuming the vertical downward growth, resulting in an "S" or "L" shaped root. Flowering plants of garlic mustard reach from 2 to 3½ feet in height, sometimes taller, producing buttonlike clusters of small white flowers, each with four petals in the shape of a cross.



**Impacts:** Garlic mustard is one of the few non-native plants able to invade and dominate the understory of North American forests. It poses a severe threat to native plants and animals in forest communities in much of the United States and Canada. Many native wildflowers that complete their life cycles in the springtime (e.g., wild ginger, miner's lettuce, bleeding heart, toothworts, and trilliums) occur in the same habitat as garlic mustard. Once introduced to an area, garlic mustard outcompetes native plants by aggressively monopolizing light, moisture, nutrients, soil and space. Wildlife species that depend on these early plants for their foliage, pollen, nectar, fruits, seeds and roots are deprived of these essential food sources when garlic mustard replaces them. The most serious of garlic mustard's harmful effects is its ability to produce allelopathic compounds. These compounds have the ability to directly interfere with the germination and growth of other plants.

**Control Options:** Thurston County's Integrated Pest Management emphasizes cultural, biological, and manual control methods to keep pests and vegetation problems low enough to prevent damage. The strategy of Thurston County's IPM policy is to minimize the use of pesticides.

## ► Cultural / Habitat

While garlic mustard is still fairly uncommon in Washington State, infestations have been known to exist in approximately 13 counties, now including Thurston County. The most essential element in controlling noxious species like garlic mustard is preventing new infestations. Pay attention to advisory signage in recreational areas and carefully clean vehicles, boots, clothing, and pets after visiting infested areas.

Be very careful when removing plants that have developed mature seeds. Gently uproot and bag seedy plants using durable bags that won't tear easily. Replanting with a hardy grass or pasture mix in sunny area helps maintain competition for weeds. Mulch and shade loving plants should be substituted for shady areas. Maintain a rigorous monitoring plan for at least five years following the last seen plant at the site.

## ► Manual / Mechanical Techniques

Hand pulling is effective for smaller patches of plants. Pull the plants after they begin to bolt up until they are finished flowering but while the seed pods are still green, typically from April to June. At least half of the root must be removed in order to prevent regrowth. Plants that are in flower or even in bud are able to form viable seeds after hand removal, so carefully bag and dispose of all plants. In areas where mature plants are pulled, there are usually many small rosettes and seeds left in the soil. Where infestations are large, a combination of hand removal of bolting plants followed by herbicide application to treat rosettes may be the most effective plan, as potential seed producing plants will be removed and the numerous smaller rosettes can be controlled with the least amount of soil disturbance.

Mowing or weed-eating is not an effective alternative for controlling garlic mustard, as plants will readily resprout from the base and will grow and bloom again in the same season.

## ► Biological

While there is potential for biocontrol development for Garlic Mustard, its current Class A designation in WA State precludes their use as they will not eradicate the species. However, many populations of garlic mustard are affected to varying degrees by powdery mildew.



## ► Chemical

Spot spraying with **triclopyr** (example: Lilly Miller® "Blackberry & Brush Killer" or Ortho® "Brush-B-Gon Poison Ivy Killer Concentrate") is also effective in controlling garlic mustard. For larger infestations, there are products available at higher concentrations that may be more economical to use. Triclopyr is a selective herbicide that will not kill grass when used according to label instructions, but may damage or kill other broadleaf plants. Triclopyr products are rated as "moderate in hazard" by Thurston County's pesticide review process because broadcast applications of triclopyr at greater than 2 lbs of active ingredient per acre can result in contaminating the food supply for birds and small animals. Since this prescription recommends only spraying individual plants or small patches, risk to birds and small animals is greatly reduced.



## Foliar applications:

- Using a spot application, spray plants thoroughly on the stems and leaves, enough to be wet but not to the point of dripping. Spot application means the herbicide is applied only to the target plants, and not on the surrounding plants or soil.
- Methylated seed oil or a non-ionic surfactant should be added to spray mixes to assist the herbicide in penetrating the leaf surface. Follow label recommendations for the type and amount to use.
- Keep people and pets off treated areas until the spray solution has dried.

**Timing:** Garlic mustard can be treated in the spring up until blooming. Rosettes can also be treated during late fall or early spring when many native plants are dormant but garlic mustard remains vulnerable.

**Pollinator Protection:** To minimize negative impacts to bees and other pollinators, treatment prior to blooming is recommended. Removal of flowers before treatment can be an option in some situations. If treatment must occur during the blooming period, try to spray early or late in the day or on cloudy, cool days when pollinators are least active.

Product/Method	Rates	Mix
<b>Triclopyr</b> Lilly Miller® "Blackberry & Brush Killer" or Ortho® "Brush-B-Gon Poison Ivy Killer Concentrate"	4 oz. (1/2 cup) per 500 ft <sup>2</sup>	To determine the amount of mix needed, first measure the area to be treated, then measure the amount of plain water needed to spray the area using a backpack or tank sprayer. Allow sufficient time for the area to dry completely before treatment. Then add 4 oz. (1/2 cup) of product to enough water for each 500 sq. ft of area that needs to be treated. Spray plants until they are wet but not dripping.

**READ AND FOLLOW ALL LABEL DIRECTIONS AND RESTRICTIONS.** Obey all label precautions including site specific and safety measures. Always use personal protective equipment that includes coveralls, chemical resistant gloves, shoes plus socks, and protective eyewear. Use of brand names does not connote endorsement and is for reference only; other formulations of the same herbicides may be available under other names. Information provided is current as of the date of the fact sheet. Pesticide product registration is renewed annually. Product names and formulations may vary from year to year.

## REFERENCES:

Written Findings of the Washington State Noxious Weed Control Board

The Nature Conservancy ESA for Garlic Mustard, Victoria Nuzzo, Natural Area Consultants, Natural Area Consultants, 1 West Hill School Road, Richford, NY 13835

Plant Conservation Alliance—Weeds Gone Wild: Alien Plant Invaders of Natural Areas, May 5, 2005

A Review of Garlic Mustard (*Alliaria petiolata*, *Brassicaceae*) as an Allelopathic Plant — Don Cipollini, The Journal of the Torrey Botanical Society, 143(4) : 339-348



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# Hanging Sedge (*Carex pendula*)

**Description:**

Hanging Sedge is a large, non-native, perennial, evergreen sedge. It grows 3 to 6 feet tall and 3.3 feet wide, forming loose clumps. The leaves are green and hairless, with a red-purple base. Hanging sedge has pendulous, off-white to light yellow inflorescence, that are 3 to 12 inches long. It blooms from May to September. The fruits are small (2.6 to 4 mm long) and three sided. Flowers and fruits appear brown once they have matured.

**Impacts:**

Hanging sedge is native to Europe, Northern Africa and Western Asia. It was introduced to the Pacific Northwest as an ornamental plant. It can readily escape cultivation, becoming invasive in moist, shaded sites along creeks, trails, wet ditches, drainages, riparian areas and in forest

understories. It forms dense patches, and outcompetes native vegetation. This negatively impacts local ecosystems by altering plant communities and reducing forage and habitat for wildlife. In parts of Oregon, hanging sedge has been found reaching up to 85% ground cover at some sites. It reproduces by seed or rhizomes. One mature plant can produce up to 20,000 seeds, which spread easily in water and can have a germination rate of up to 90%.

**Control Options:**

Thurston County's Integrated Pest Management emphasizes cultural, biological, and manual control methods to keep pests and vegetation problems low enough to prevent damage. The strategy of Thurston County's IPM policy is to minimize the use of pesticides. You should monitor the site in subsequent growing seasons and control any re-growth that may occur.

**► Cultural / Habitat**

The most effective control of hanging sedge is prevention. Wherever possible, prevent plants from going to seed. If an area is known to be infested, it's important to minimize soil disturbance, which can en-

courage seed germination. Replant an area with native vegetation to add competition and prevent re-establishment of hanging sedge. Improving drainage can help to change site conditions and discourage hanging sedge establishment in an area. Clean vehicles, boots, clothing, and pets after visiting and area infested with hanging sedge.

**► Manual / Mechanical**

Small, isolated infestations (< 20 plants) can be dug out. Be sure to remove all roots as they can re-sprout into new plants. Take care to minimize ground disturbance and replant an area with native or desired vegetation to add competition. For larger infestations (> 20 plants) chemical control may be necessary. If plants are flowering or going to seed it may be necessary to deadhead and bag material to prevent seed dispersal. Cutting or mowing plants can help to delay seed production.

**► Biological**

There are no bio-controls available for hanging sedge in Washington.



## ► Chemical

For effective control of hanging sedge you must use a non-selective herbicide, containing an active ingredient such as imazapyr. Non-selective herbicides can injure all vegetation, including grasses. Be careful to avoid overspray onto neighboring vegetation. Hanging sedge is often found growing near water. **The use of herbicide in/around water is restricted in Washington State, and must be performed by a licensed applicator using herbicides formulated for an aquatic setting. Be sure to read and follow all instructions on the label.**



**Imazapyr** (example: Polaris®) is also effective at controlling hanging sedge. Imazapyr is non-selective and can injure all vegetation it contacts. It may leave persistent bare ground in the treatment area. This can be minimized by using only as directed, spraying at the recommended strength and no more than is necessary to wet the surface of the leaves and stems. Products containing the active ingredient imazapyr are considered "moderate in hazard" by Thurston County's pesticide review process for the potential for chemical mobility and persistence.

### Foliar applications:

- Using a spot application, spray the plants foliage thoroughly, enough to be wet but not to the point of dripping. Spot application means the herbicide is applied only to the target plants, and not on the surrounding plants or soil.
- It may be helpful to add methylated seed oil or a non-ionic surfactant to the tank mix to allow the herbicide to stick to the surface of the leaves. Always read the herbicide label before adding anything to your herbicide.
- Keep people and pets off treated areas until spray solution has dried.

**Timing:** Treatments should occur in the spring to early summer when plants are actively growing, but before they have begun to flower.

**Pollinator Protection:** Pollinators may be present when plants are blooming, to reduce, try to spray early or late in the day or on cloudy, cool days when pollinators are least active.

**READ AND FOLLOW ALL LABEL DIRECTIONS AND RESTRICTIONS.** Obey all label precautions including site specific and safety measures. Always use personal protective equipment that includes coveralls, chemical resistant gloves, shoes plus socks, and protective eyewear. Use of brand names does not connote endorsement and is for reference only; other formulations of the same herbicides may be available under other names. Information provided is current as of the date of the fact sheet. Pesticide product registration is renewed annually. Product names and formulations may vary from year to year.

Active Ingredient Product	Rates	Mix
<b>Imazapyr:</b> Polaris®	0.75%	Add 1.0 oz (2.0 Tablespoons) concentrated product per gallon of water. Add a non-ionic surfactant (example: Competitor® or Agridex®) to help the herbicide stick to the leaves. To mix 1% surfactant add 1.3 oz (2.6 tablespoons) per 1 gallon. Add to mix after herbicide. Spray plants until wet but not dripping.

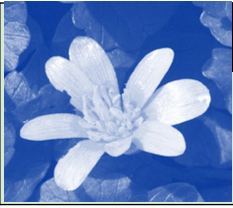
### REFERENCES:

King County Noxious Weed Control Program Weed of Concern: Hanging Sedge, *Carex pendula* Available: [https://www.nwcb.wa.gov/pdfs/Carex-pendula-information\\_King-County.pdf](https://www.nwcb.wa.gov/pdfs/Carex-pendula-information_King-County.pdf) ; Written Findings of the Washington State Noxious Weed Control Board. Available: [https://www.nwcb.wa.gov/pdfs/Carex\\_pendula\\_draft\\_Written\\_Findings\\_2020.pdf](https://www.nwcb.wa.gov/pdfs/Carex_pendula_draft_Written_Findings_2020.pdf); Burke Herbarium <http://biology.burke.washington.edu/herbarium/imagecollection/taxon.php?Taxon=Carex%20pendula>; U.S. Army Corps of Engineers. Aquatic Herbicides. 2012. Available: <https://glmr.is.anl.gov/documents/docs/anscontrol/AquaticHerbicides.pdf>



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[www.thurstoncountywa.gov/pw/nw](http://www.thurstoncountywa.gov/pw/nw)





## Lesser Celandine (*Ficaria verna*)

**Description:** Lesser celandine is a highly invasive, herbaceous, perennial weed. The leaves are mottled green, triangular to heart shaped with rounded and curled down edges. The flowers are typically bright yellow. Cultivated varieties are diverse, ranging in flowers that are light yellow to orange or white with yellow stamens and purple leaves. Flower usually have 7–13 petals, blooming March to May, then dying back quickly by June or July. It can reproduce by seed, tubers and bulbils that grow on stems. It is native to Asia, Europe and North Africa.

**Impacts:** Lesser celandine emerges early in the year before many short-lived native plants. It can quickly outcompete and displace native plant species, reducing forage and habitat for wildlife. It spreads easily by seed, clippings and contaminated soil. The fast lifecycle of lesser celandine makes survey and treatment a challenge for land managers.

**Control Options:** Thurston County's Integrated Pest Management (IPM) program emphasizes cultural, biological, and manual control methods to keep pests and vegetation problems low enough to prevent damage. The strategy of Thurston County's IPM policy is to minimize the use of pesticides.

### ► Cultural / Habitat

Lesser celandine is primarily found in western Washington. It is known to occur in approximately 10 counties in the state, including Thurston. The most essential element in controlling noxious species like lesser celandine is preventing new infestations. Clean vehicles, equipment, boots, clothing and pets after visiting infested areas.

A thick layer of mulch is effective at suppressing and reducing infestation levels. Monitor area in late winter to spring for regrowth.

### ► Manual / Mechanical Techniques

Hand pulling can be effective for small patches of plants. Take care to remove and not disperse bulbils and tubers. Place all plant material in bag and dispose of in household garbage. Do not dispose of material in compost or natural areas. Do not move soil from areas with known infestations. Mature plants will have fertile bulbils on the stems, take care to not disperse these while working with lesser celandine.

Mowing is not effective for control of lesser celandine. This will spread seeds and propagules. Cut plants will quickly re-sprout and bloom.

### ► Biological

There are no approved bio-controls for lesser celandine in Washington State



## ► Chemical

Spot spraying with an herbicide containing the active ingredient **glyphosate** (example: Roundup Pro<sup>®</sup>, Eliminator Weed and Grass Killer<sup>®</sup>, etc.) can be used to treat lesser celandine. Due to recent health reviews, Thurston County recognizes some scientific studies have concluded the use of glyphosate products have carcinogenic potential, though the risk of spot spraying with these products is considered to be low provided the applicator uses personal protection equipment which includes chemically resistant gloves, long sleeve shirt, long pants, socks and shoes and all other label precautions are followed. Glyphosate is a non-selective herbicide and will injure grasses and broadleaf plants.

### Foliar applications:

- Using a spot application, spray plants thoroughly on the stems and leaves, enough to be wet but not to the point of dripping. Spot application means the herbicide is applied only to the target plants and not on the surrounding plants or soil.
- Methylated seed oil or a non-ionic surfactant should be added to spray mixes to assist the herbicide in penetrating the leaf surface. Follow label recommendations for the type and amount to use.
- Keep people and pets off treated areas until the spray solution has dried.

**Timing:** Treat site as soon as plants have emerged in late winter to early spring. Herbicide treatment may be less effective once plants have started blooming.



Washington State NWCB

Product/Method	Rates	Mix
<b>Triclopyr</b> Lilly Miller <sup>®</sup> "Blackberry & Brush Killer" or Ortho <sup>®</sup> "Brush-B-Gon Poison Ivy Killer Concentrate"	4 oz. (1/2 cup) per 500 ft <sup>2</sup>	To determine the amount of mix needed, first measure the area to be treated, then measure the amount of plain water needed to spray the area using a backpack or tank sprayer. Allow sufficient time for the area to dry completely before treatment. Then add 4 oz. (1/2 cup) of product to enough water for each 500 sq. ft of area that needs to be treated. Spray plants until they are wet but not dripping.
<b>Glyphosate</b> Roundup Pro <sup>®</sup> Eliminator Weed & Grass Killer <sup>®</sup>	2%	Add 2.6 oz (5.2 Tablespoons) concentrated product per gallon of water.

**Pollinator Protection:** To minimize negative impacts to bees and other pollinators, treatment prior to blooming is recommended. Removal of flowers before treatment can be an option in some situations. If treatment must occur during the blooming period, try to spray early or late in the day or on cloudy, cool days when pollinators are least active.

**READ AND FOLLOW ALL LABEL DIRECTIONS AND RESTRICTIONS.** Obey all label precautions including site specific and safety measures. Always use personal protective equipment that includes coveralls, chemical resistant gloves, shoes plus socks and protective eyewear. Use of brand names does not connote endorsement and is for reference only; other formulations of the same herbicides may be available under other names. Information provided is current as of the date of the fact sheet. Pesticide product registration is renewed annually. Product names and formulations may vary from year to year.

### REFERENCES:

Written Findings of the Washington State Noxious Weed Control Board/Written Findings/Lesser Celandine  
Pacific Northwest Pest Management Handbook /problem weeds/ lesser celandine; Invasives in Your Woodland: Lesser Celandine/extension.umd.edu; The Rise of Lesser Celandine/Buckeye Yard & Garden Online/osu.edu



January 13, 2021

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Noxious Weeds and Lakes  
Management Program  
9605 Tilley Road S.  
Olympia, WA 98512  
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## THURSTON COUNTY NOXIOUS WEED FACT SHEET

# Slenderflower: Italian & Turkish Thistles

(*Carduus tenuiflorus*, *C. pycnocephalus*, *C. cinereus*)

**Description:** Turkish, Italian and slenderflower thistle are closely related species in the sunflower family. They all start as a basal rosette of prickly leaves, then grow spiny winged stems that are branched or unbranched. Flowers are pink-purple, and grow in clusters at ends of stem or leaf axils. Their height varies greatly due to site conditions.

**Slenderflower thistle:** Biennial or winter annual; some plants germinate in fall and grow as rosettes in the winter, while others germinate in early spring. The stems are strongly ribbed and slightly woolly, with a thin, spiny tissue attached like a ribbon along the sides of the stalks. Leaves are about 6-12 inches long, growing smaller as they move up the stalks. The deeply lobed leaves have needle-like spines along the margins. Small pink to lavender flowers are surrounded by numerous spiny bracts and grow in clusters of 5-20. Slenderflower thistle blooms May to July. One plant produces up to 20,000 seeds.

**Turkish thistle:** Annual thistle, that grows upright from 0.5 to 4 feet tall. The winged stems are covered in soft hairs. The leaves at the base of



**Slenderflower thistle flowers**



**Turkish thistle flowers**

the stem are up to 4 inches long, growing smaller as they move up the stalks. Flowers are pink to lavender in color, occur singly, or in tight clusters of 2-5 at ends of the stem. Flowers are covered in hairs, and up to 1.2 inches long, narrowing toward end of the petals. In the Pacific northwest, Turkish thistle is documented to bloom in May and has been found blooming as short as 3 inches tall.

**Italian thistle:** Annual or biennial, that grows 6-8 feet tall. The stem is winged with spines. Small flowers grow singly, or in clusters of 2-5 at the end of the stem. They are purple in color with stiff spiny bracts pointing towards the petals. The leaves have spines around the margins, with a longer spine at end of the leaf. The bottom of the leaf is covered in soft hairs.

**Impacts:** Italian, slenderflower and Turkish thistle can spread quickly, excluding native species and crowding out forage plants in meadows, pastures and rangelands. This negatively impacts habitat and food supply for native wildlife. Thistles are not easily grazed by livestock, large infestations can exclude livestock and discourage grazing. Eradication of Italian, slenderflower and Turkish thistle is required by law in Thurston County.

**Control Options:** Thurston County's Integrated Pest Management emphasizes cultural, biological, and manual control methods to keep pests and vegetation problems low enough to prevent damage. The strategy of Thurston County's IPM policy is to minimize the use of pesticides.

### ► Cultural / Habitat

Preventing the establishment of Italian, slenderflower and Turkish thistle is the most time and cost effective way to control these species. Vehicles, farm, outdoor recreation and construction equipment can transport seeds, and should be cleaned after being used in an area infested with invasive thistles. Livestock can also transport seeds. Thistle competes poorly against established vegetation. To add competition, plant or encourage existing native vegetation. Revegetating areas where control work has been done is critical to reducing the re-establishment of thistles, and preventing infestations of other weed species in these disturbed areas.

### ► Manual / Mechanical

Hand pulling or digging can be effective for isolated plants or small patches (20 plants or less, depending on size and how easily they can be pulled). Use a hand tool and be sure to remove the roots to prevent regrowth. Larger patches or plants at or near the blooming stage can be difficult to control manually. Pulled or dug plants with flower heads or buds should be disposed of carefully as there is usually enough reserve in the plants to produce viable seeds. Mowing is usually not effective as it simply delays the blooming process, and plants will still produce seed. Monitor sites regularly for new plants.

### ► Biological

Currently there is no biocontrol approved for Italian, slenderflower or Turkish thistle in Washington State.

## ► Chemical

Spot spraying with **triclopyr** (examples: Lilly Miller's liquid concentrate "Blackberry and Brush Killer" and Ortho's "Brush-B-Gon Poison Ivy Killer Concentrate") is effective in controlling Slenderflower, Italian and Turkish thistle. Triclopyr is a selective herbicide that will not kill grass when used according to label instructions, but may damage or kill other broadleaf plants. Triclopyr products are rated as "moderate in hazard" by Thurston County's pesticide review process because broadcast applications of triclopyr at greater than 2 lbs of active ingredient per acre can result in contaminating the food supply for birds and small animals. Since this prescription recommends only spraying individual plants or small patches, the risk to birds and small animals is greatly reduced.

**Thurston County has observed that most ready-to-use, pre-mixed products do not contain sufficient active ingredients to be as effective as concentrated products that are then mixed with water to create a specific finished concentration. The following instructions are for products containing 8% triclopyr (be sure the product you choose lists triclopyr as the only active ingredient) which will be mixed down to a specified dilution rate. Be sure to read your label carefully, and make adjustments to rates accordingly.**

### Foliar applications of triclopyr:

- Spot application means the herbicide is applied only to the plants and not on the surrounding plants or soil. Spray each plant thoroughly on the stems and leaves enough to be wet but not dripping.
- Triclopyr is a selective, broadleaf weed killer and can injure any plants that it comes in contact with, except for grass. Care should be used to avoid contact with ornamentals and other desirable plants.
- Keep people and pets off treated areas until spray solution has dried.

**For selective control in agricultural settings (pastures, hayfields, etc.):** an herbicide containing the active ingredient **aminopyralid** (example: Milestone™, Milestone VM™) may be a preferred choice. Aminopyralid products will not harm grass and can be used around livestock (provided all label precautions are followed). **Do not use plant material or hay from treated areas for mulch. Likewise, do not use manure from animals that have grazed or eaten hay from treated areas.**

Aminopyralid is currently sold in farm supply stores as an agricultural herbicide that is only to be used in areas listed on the label and **may not be used in urban lawns or landscapes**. Aminopyralid products are considered "moderate in hazard" by Thurston County's review process for the potential for chemical mobility and persistence.

**Timing:** Apply either triclopyr or aminopyralid in the early spring when plants are actively growing and in the pre-bud to early bud growth stage — the goal is to insure all plants have emerged, but are treated before they reproduce.

**Pollinator Protection:** To minimize negative impacts to bees and other pollinators, treatment prior to blooming is recommended. Removal of flowers before treatment may be necessary in some situations. If treatment must occur during the blooming period, try to spray early or late in the day or on cloudy, cool days when pollinators are least active.



Italian thistle flowers

Product/Method	Rates	Mix
<b>Triclopyr</b> Lilly Miller® "Blackberry & Brush Killer" or Ortho® "Brush-B-Gon Poison Ivy Killer Concentrate"	4 oz. (1/2 cup) per 500 ft <sup>2</sup>	To determine the amount of mix needed, first measure the area to be treated, then measure the amount of plain water needed to spray the area using a backpack or tank sprayer. Allow sufficient time for the area to dry completely before treatment. Then add 4 oz. (1/2 cup) of product to enough water for each 500 sq. ft of area that needs to be treated. Spray plants until they are wet but not dripping.
<b>Aminopyralid</b> Milestone® Spot/Foliar	1 tsp per 1000 ft <sup>2</sup>	<b>To treat a 1,000 sq. ft. area:</b> Use a 2 to 4 gallon backpack or tank sprayer, add half of the water needed to cover all plants with one teaspoon Milestone™, agitate, then add water to reach desired amount (0.5 - 2.5 gallons total volume, depending on quantity of plants). Lightly spray all plants in 1,000 sq. ft. area, then continue lightly spraying until the tank is empty and all plants are thoroughly covered. The addition of a non-ionic surfactant is recommended to enhance herbicide activity. To mix 1% surfactant add 1.3 oz (2.6 tablespoons) per 1 gallon.

**READ AND FOLLOW ALL LABEL DIRECTIONS AND RESTRICTIONS.** Obey all label precautions including site specific and safety measures. Always use personal protective equipment that includes coveralls, chemical resistant gloves, shoes plus socks, and protective eyewear. Use of brand names does not connote endorsement and is for reference only; other formulations of the same herbicides may be available under other names. Information provided is current as of the date of the fact sheet. Pesticide product registration is renewed annually. Product names and formulations may vary from year to year.

### REFERENCES:

Ditomaso, J.M., G.B. Kyser et al. 2013. Weed Control in Natural Areas in the Western United States. Weed Research and Information Center, University of California. 544 pp., Oregon Department of Agriculture Pest risk Assessment for Turkish thistle, *Carduus cinereus* Available: <https://www.nwcb.wa.gov/pdfs/TurkishThistlePlantPestRiskAssessment.pdf>, Written Findings of the Washington State Noxious Weed Control Board. Slenderflower Thistle: <https://www.nwcb.wa.gov/images/weeds/Carduus-tenuiflorus-1998.pdf>, Turkish Thistle: [https://www.nwcb.wa.gov/pdfs/Carduus\\_cinereus\\_draft\\_Oct\\_larger\\_file.pdf](https://www.nwcb.wa.gov/pdfs/Carduus_cinereus_draft_Oct_larger_file.pdf) Italian Thistle: <https://www.nwcb.wa.gov/images/weeds/Carduus-pycnocephalus-1998.pdf>



Thurston County Public Works  
Noxious Weeds and Lakes Management  
Program  
9605 Tilley Road S.  
Olympia, WA 98512  
Phone: 360-786-5576  
TTY/TDD - Call 711 or 1-800-833-6388  
[tcweeds@co.thurston.wa.us](mailto:tcweeds@co.thurston.wa.us)  
[www.thurstoncountywa.gov/pw/nw](http://www.thurstoncountywa.gov/pw/nw)



## Board of Health AGENDA ITEM SUMMARY

**Agenda Date:** 03/14/2023

Date Created: 3/3/2023

Agenda Item #:

Created by: Jamie Caldwell, Clerk of the Board - Commissioners Office - 360-786-5440

Presenter: **David Bayne, Public Health & Social Services Director - Administration - 360-867-2502**

### Item Title:

Alternate Health Officer Appointment

**Action Needed:** Pass Motion

**Class of Item:** Department

### List of Exhibits

 File Attachment

### Recommended Action:

Move to approve the resolution appointing Dr. James Miller, who is the Regional Medical Officer at the Washington State Department of Health, as the acting alternate local health officer for Thurston County for the 2023 year in the absence or incapacity of Dr. Dimyana Abdelmalek.

### Item Description:

Draft

Date Submitted: 3/3/2023



## Board of Health AGENDA ITEM SUMMARY

**Agenda Date:** 03/14/2023

Date Created: 3/3/2023

Agenda Item #:

Created by: Jamie Caldwell, Clerk of the Board - Commissioners Office - 360-786-5440

Presenter: **Jamie Caldwell, Clerk of the Board - Commissioners Office - 360-786-5440**

**Item Title:**

Fiscal Subcommittee

**Action Needed:** Pass Motion

**Class of Item:** Department

**List of Exhibits**

 File Attachment

**Recommended Action:**

Move to create the Board of Health Fiscal Subcommittee

**Item Description:**

None

Date Submitted: 3/3/2023