

# JAPANESE BEETLE

Carson Thomas, MDA



# Updates on Terrestrial Snails in Montana



Carson Thomas

& Dr. Frank Etzler

Montana Department of Agriculture

2024: The Year of the Dragon

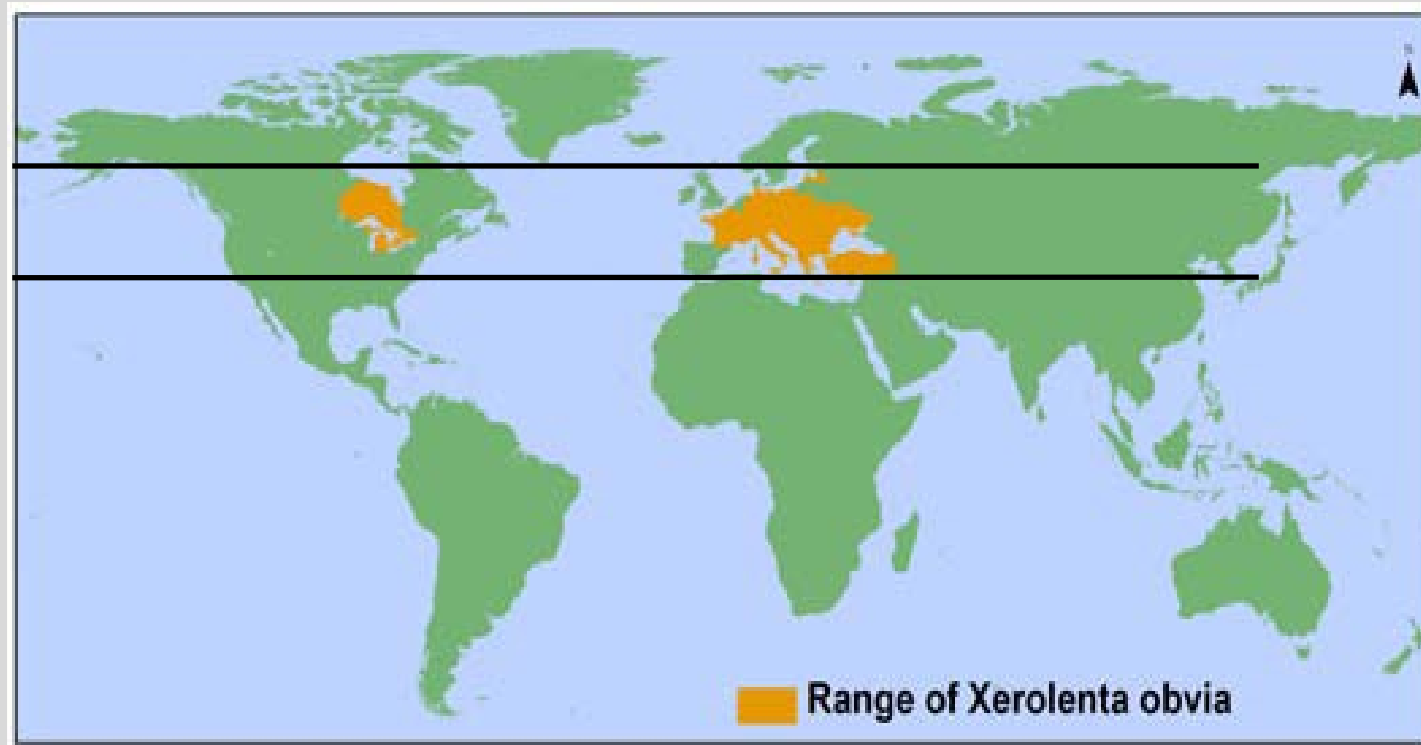


# 2024: The Year of the **Snail**

- Eastern Heath Snail
- Roman Snail
- Garden Snail
- “Mystery” Snail

# Eastern Heath Snail

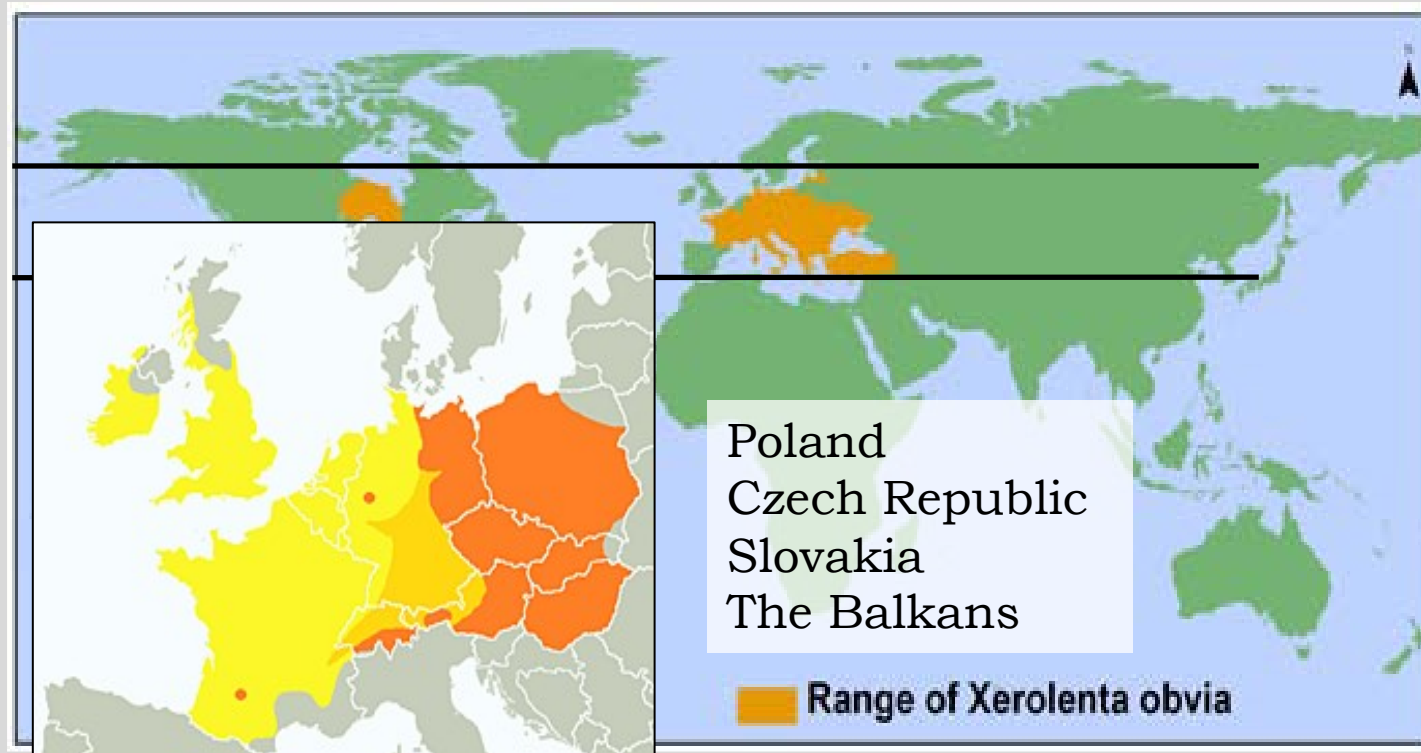
- *Xerolenta obvia* (Menke) range



- In North America:
  - **Ontario, Canada** – Since 1960s
  - **Michigan, USA** – Since 2002

# Eastern Heath Snail

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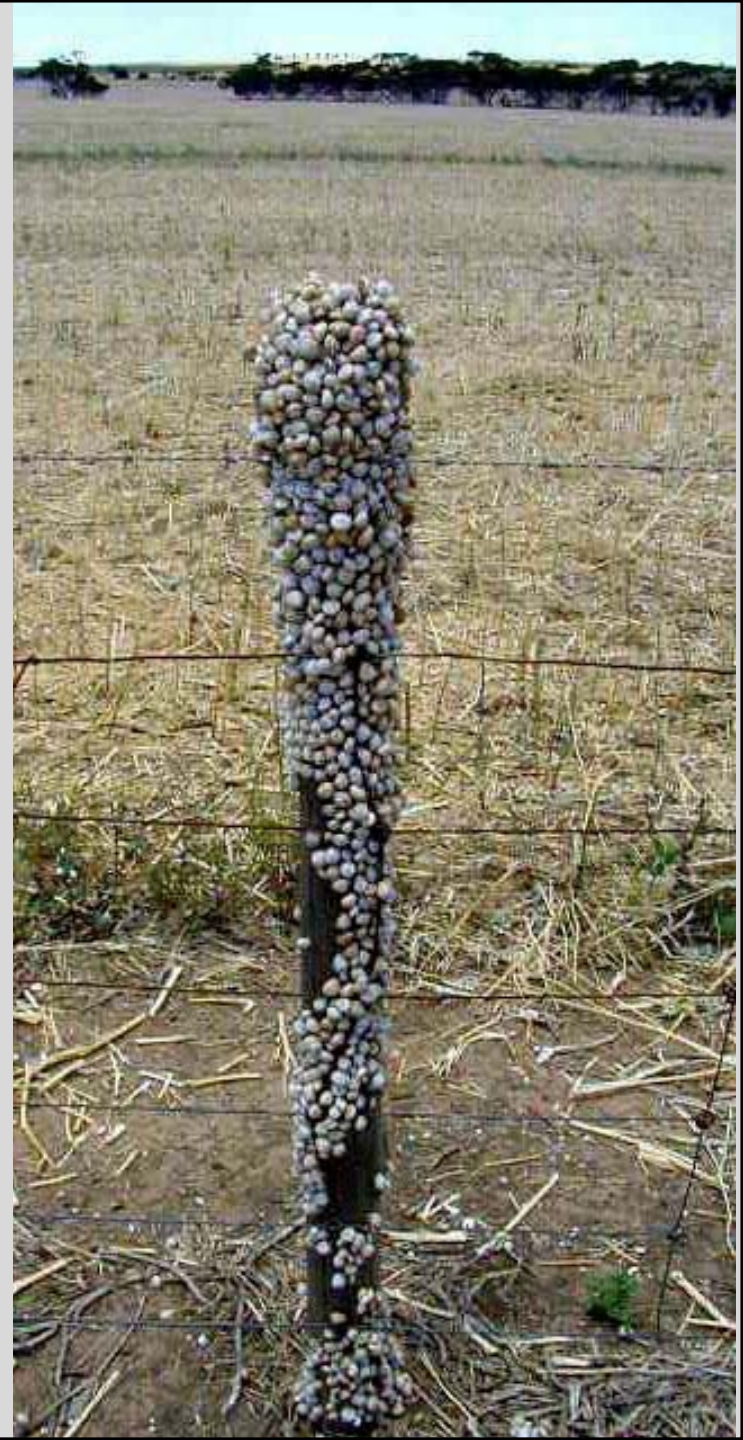
# Eastern Heath Snail



In Australia



**Worst Case Scenario:**  
Four snail species  
with massing  
behaviors.  
Species originated in  
Mediterranean.





# Eastern Heath Snail



# Eastern Heath Snail in Montana

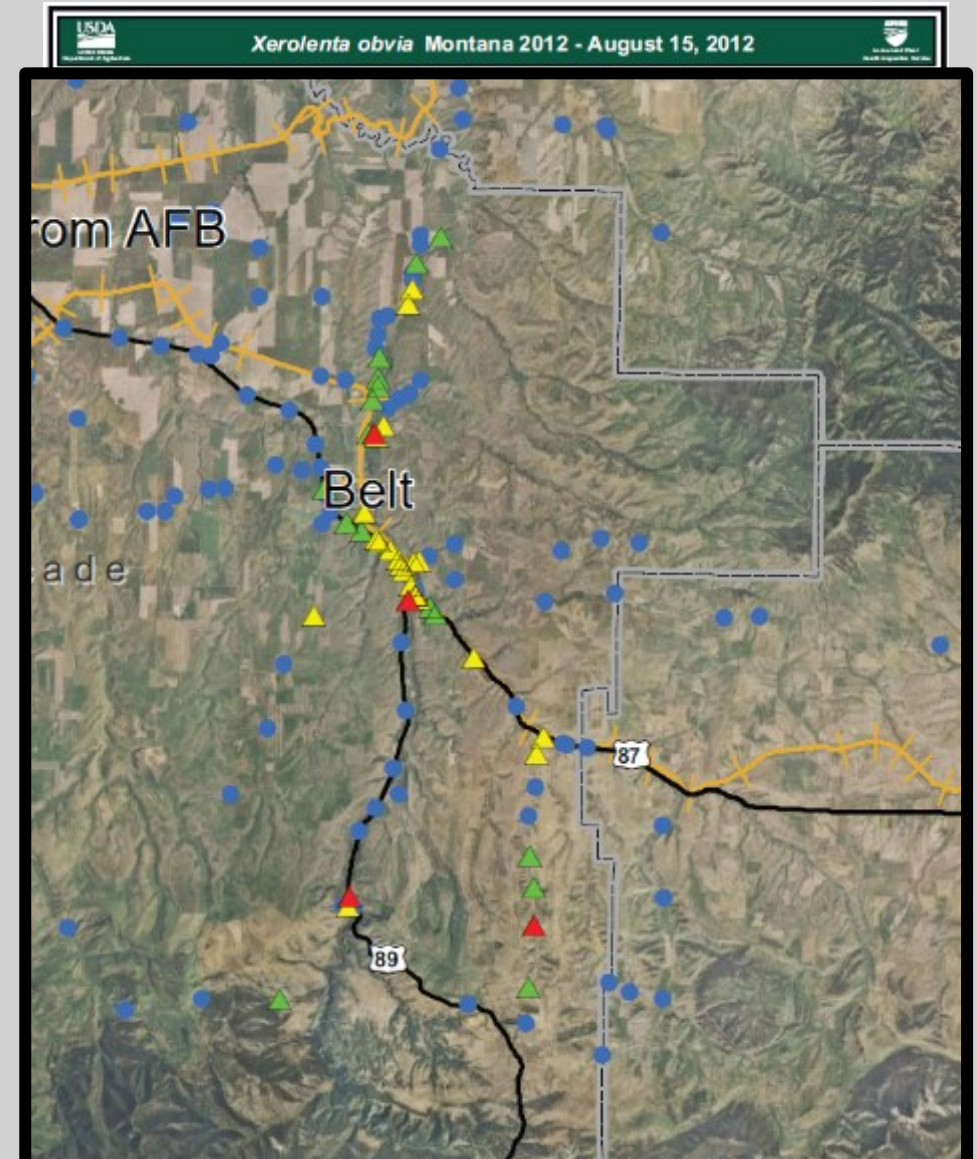
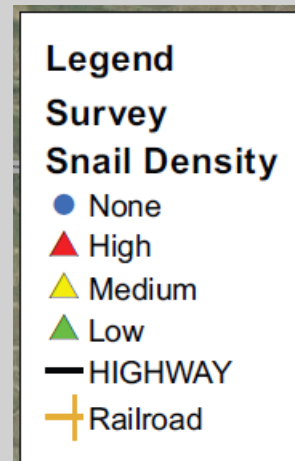


Ian Foley  
2012



# Eastern Heath Snail in Montana

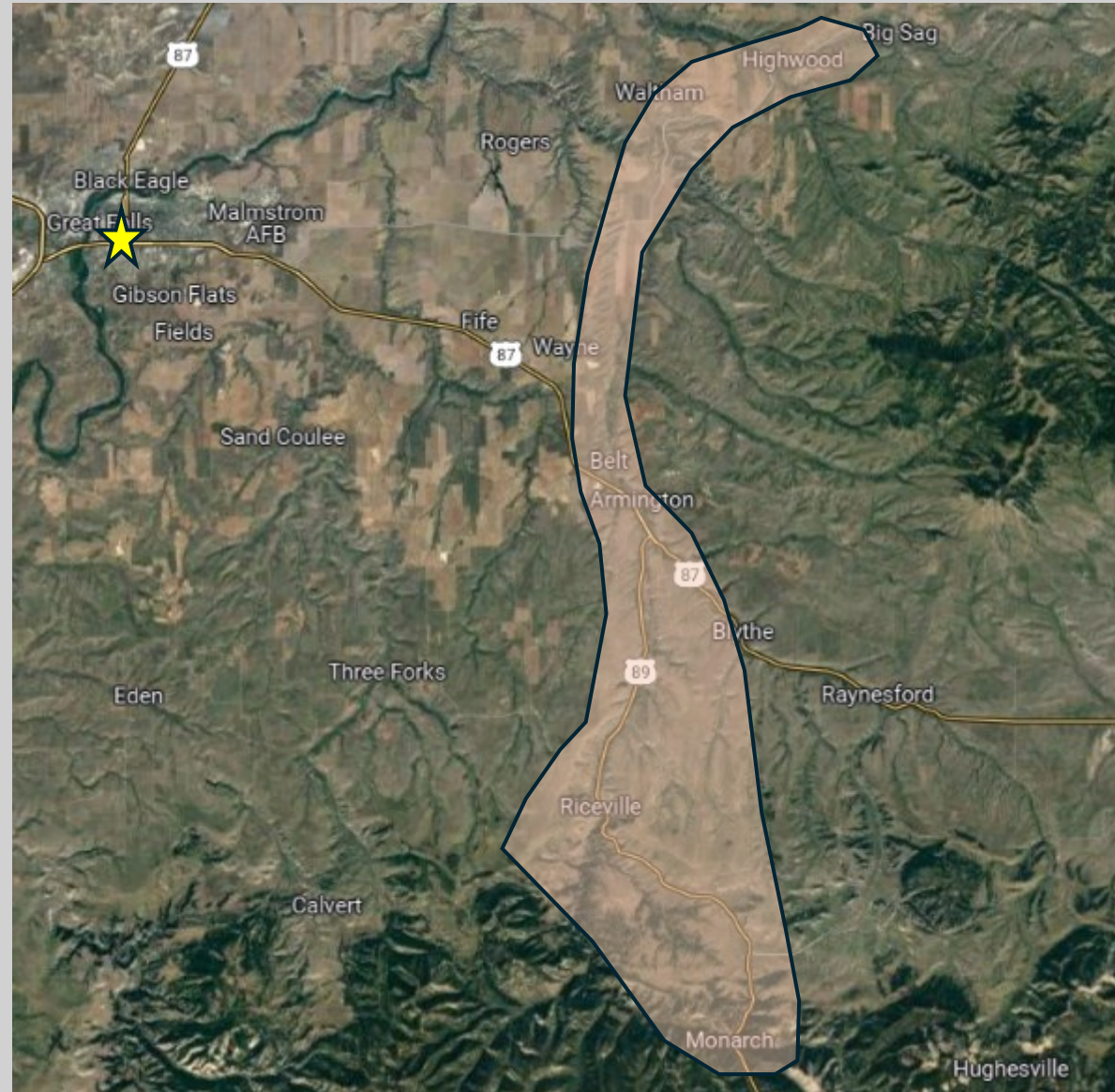
Initial Surveys to delimit population found snails throughout the **Belt Creek area**. Populations appeared well established indicating long presence in area.



# Eastern Heath Snail in Montana

2013 survey:

- North in Highwood (Chouteau Co.)
- South to Monarch
- Population in Great Falls alley



# Eastern Heath Snail in Montana

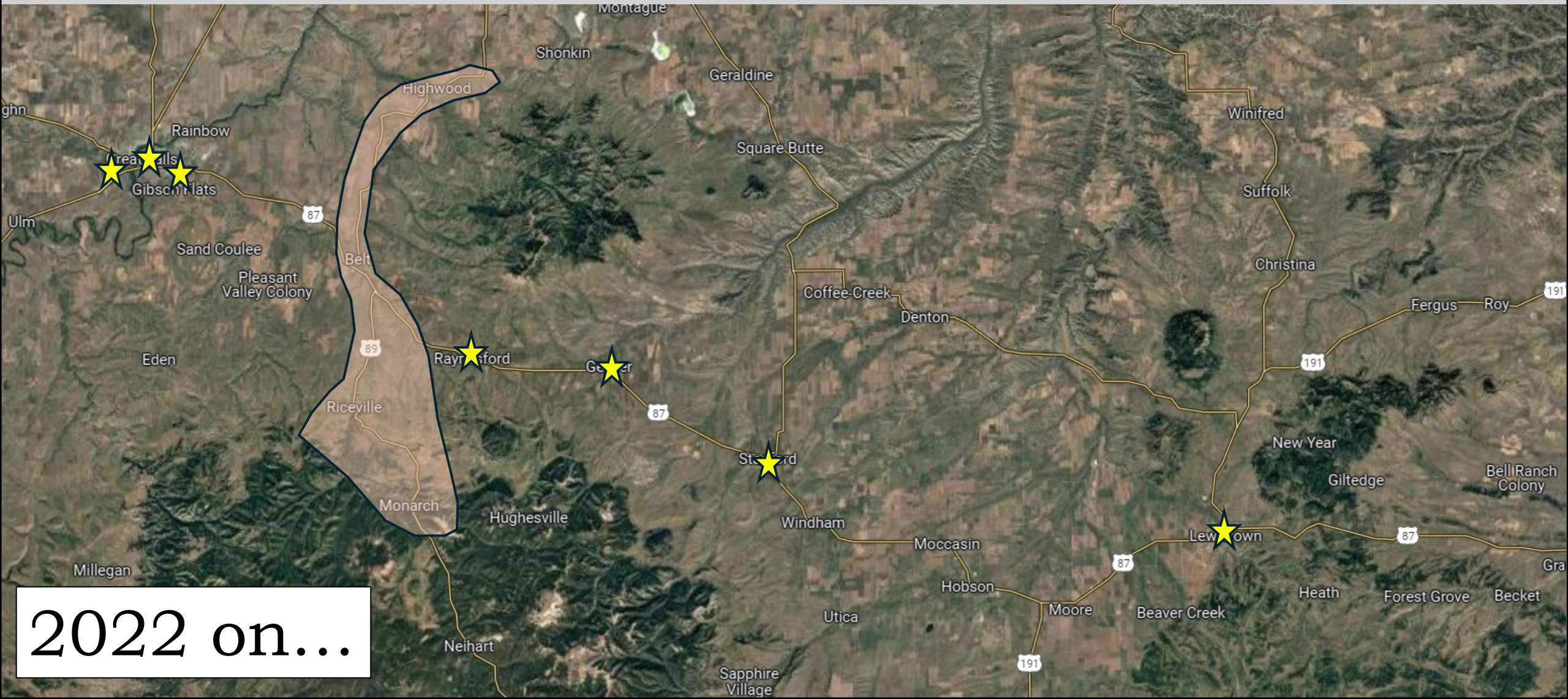
First round of outreach:  
2013 Snail round-up  
~350lbs

Early 2014:  
Environmental  
Assessment Released

No interest for  
regulations from Industry



# Eastern Heath Snail in Montana



2022 on...

# Eastern Heath Snail Biology



Dr. Jeff Littlefield, MSU



Jennie Birdsall, MSU

Goals:

- What does EHS eat?
- How does EHS develop?

# EHS Life History

- Over-wintering



- Mating
- Egg laying
- Hatch
- Feeding



Winter

Spring



Autumn

Summer

- Feeding
- Mating
- Egg laying
- Hatch



- Feeding
- Aestivation





# EHS Life Cycle - Reproduction



- Snails both male & female
- Eggs laid in fall & spring
- Up to 80 eggs/clutch
- Multiple clutches possible

# Food Preferences

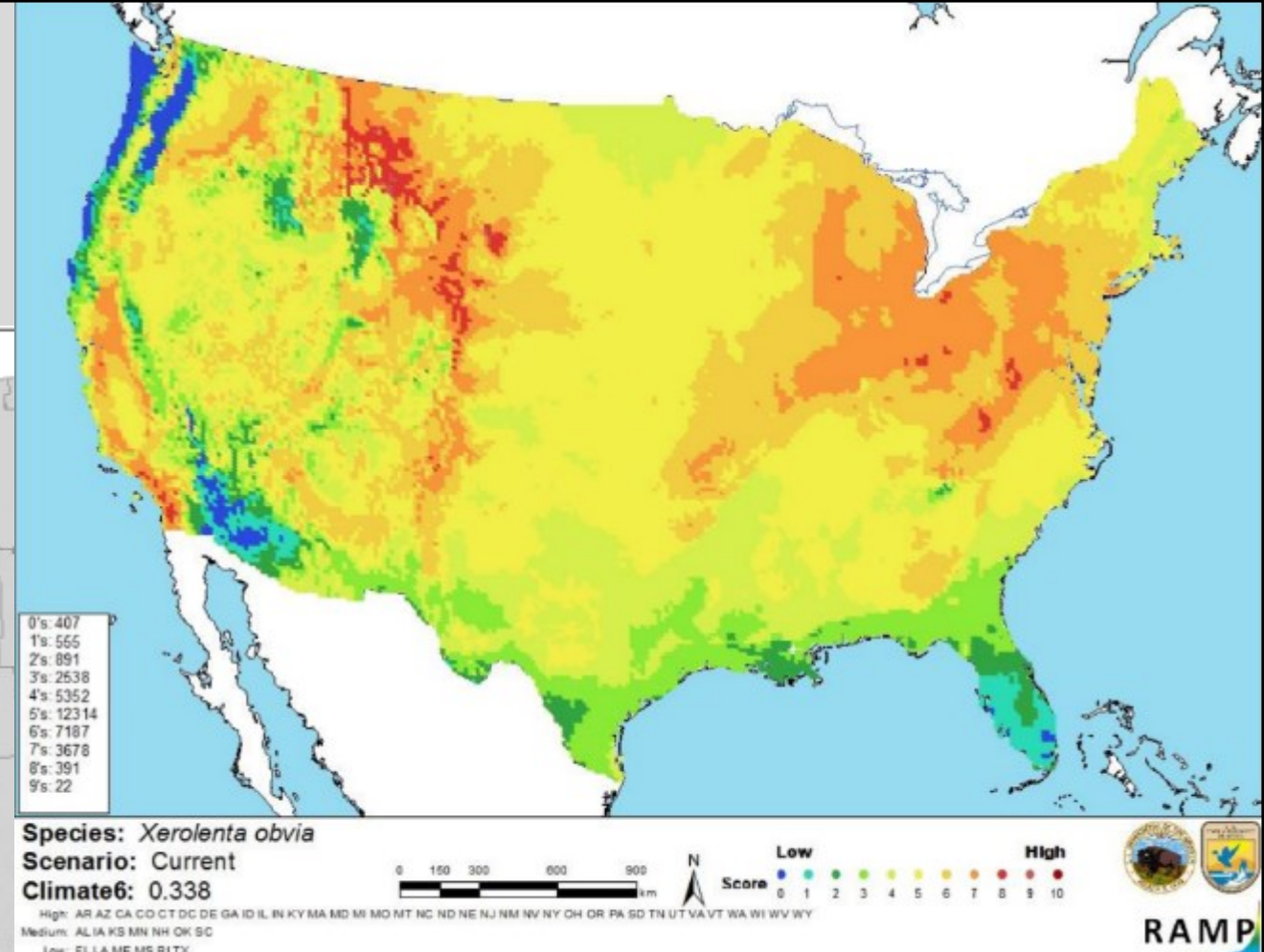
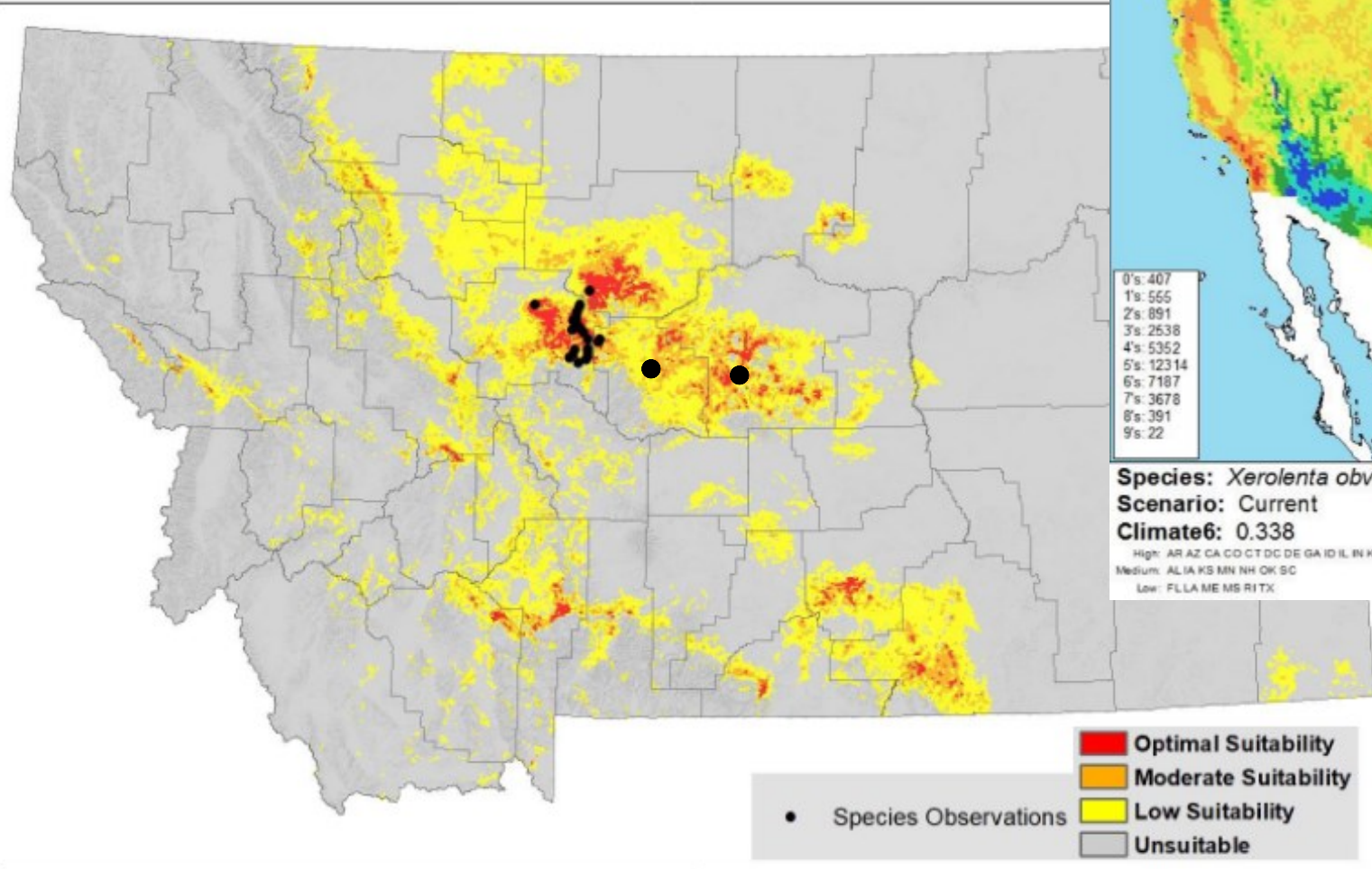
- Detritus
- Supplement diet with forbs & grasses
- Newly hatched snails may feed within the soil

## Crops

- Found in wheat & forage crops – negligible feeding impact
- Little exposure to other crops (currently)
- Future concerns?
  - Canola
  - Pulse crops
  - Greater potential impact to seedlings
  - Unknown persistence under cultivation



# Suitable Habitat



Map of RAMP (Sanders et. al 2014) climate matches for *Xerolenta obvia* in the contiguous United States based on source locations reported by GBIF (2016). 0= Lowest match, 10=Highest match. USFWS - 2018

Montana Natural Heritage Program. 2022. Eastern Heath Snail (*Xerolenta obvia*) predicted suitable habitat model created on September 15, 2022. Montana Natural Heritage Program, Helena, MT. 17pp.

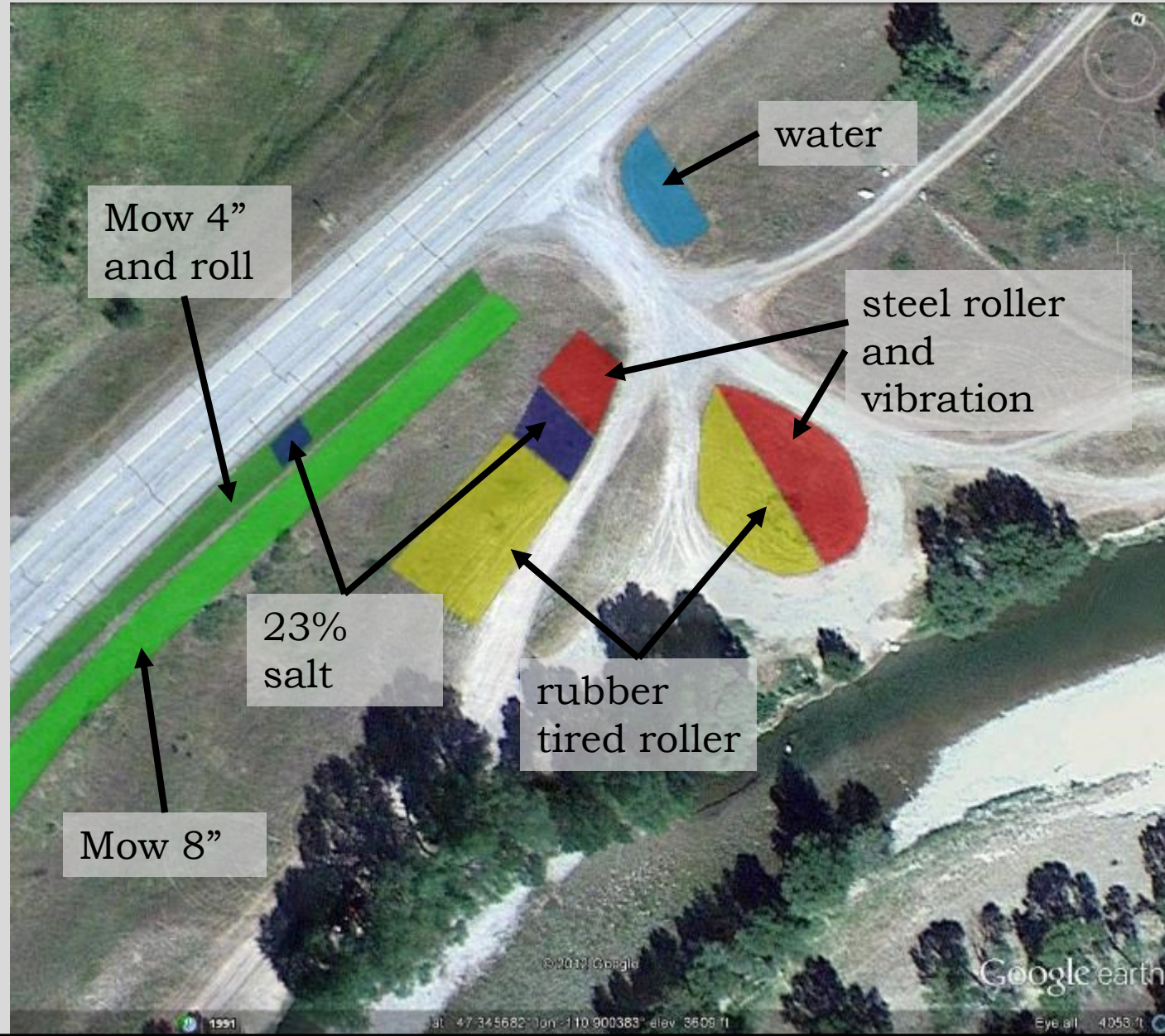
# Eastern Heath Snail Control

- Australian methods

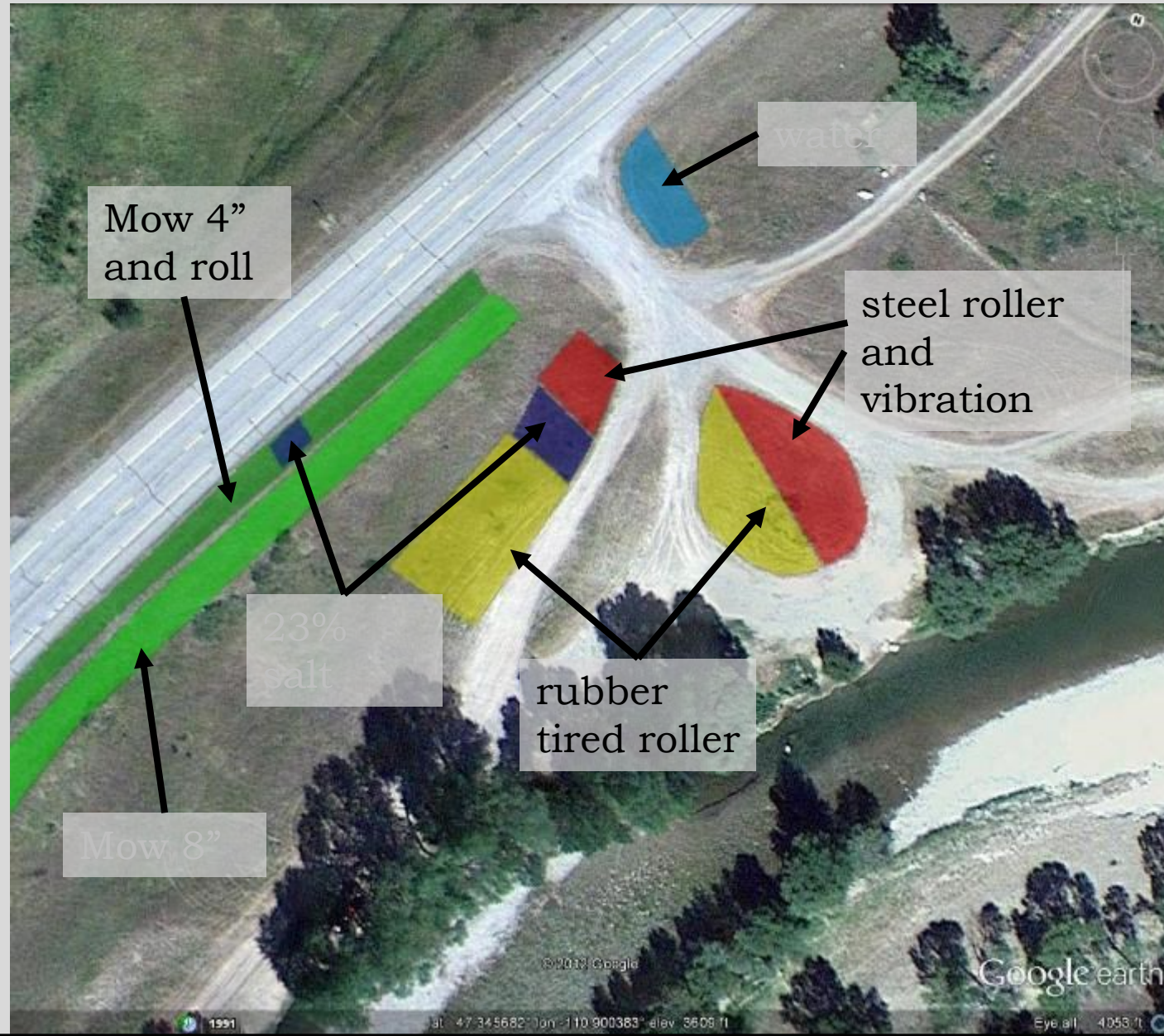


- Early tests done with MT DoT assistance.

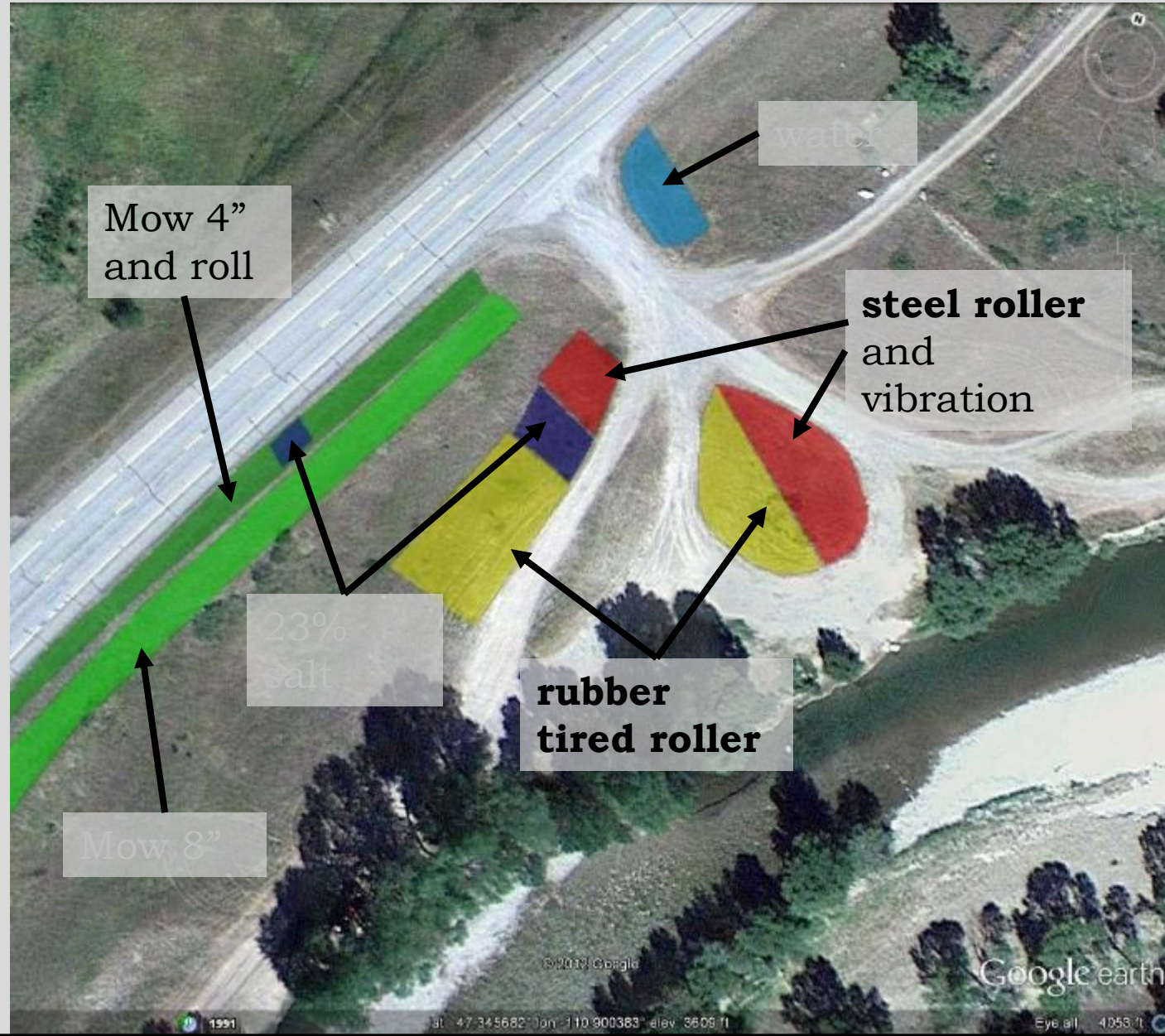
# EHS MT DoT Control Experiments



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# EHS Pesticide Options

- Iron Phosphate



- Sodium ferric EDTA



- Metaldehyde





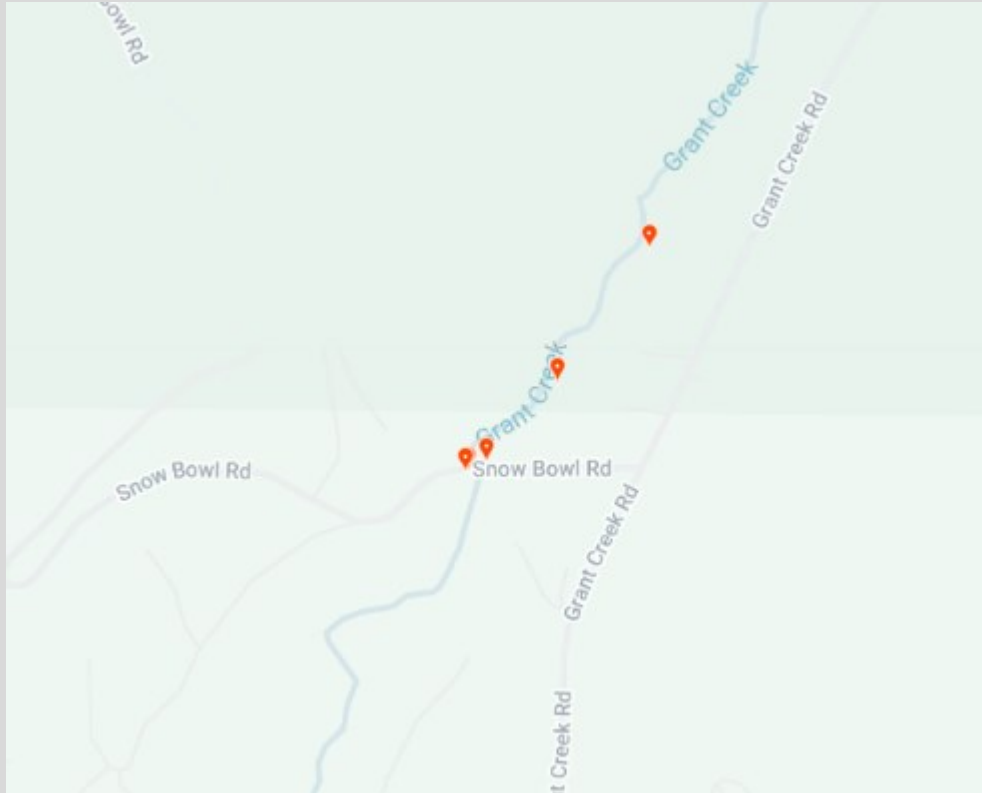
# Lewistown EHS Eradication



And now....

**MORE SNAILS!**

# Roman Snail – *Helix pomatia*



Missoula Co.



# Garden Snail - *Cornu aspersum*



- Picked up in Nursery Shipment in Miles City
- NOT ESTABLISHED
- Another risk pathway

# “Mystery” Snail

- Shipped in equipment to .... Lewistown
- Need definitive ID.