



Bugs, Crud, and Critters

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Insect and Disease Resources

IDL Forest Health
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Factsheets and other resources
available here:

<https://www.idl.idaho.gov/about-forestry/insects-and-disease/>

- Common forest insect pests
- Common forest diseases
- Animal damages to look for
- Last year's climate and forest health issues
- What to expect in 2023

Bark Beetle Characteristics

- **Typically kill trees within a single year**
- **Generally, host specific**
- **Adults feed and reproduce in the phloem**
- **Share a similar life cycle, though timing is different**



bark beetle

life cycle

find host



bore in



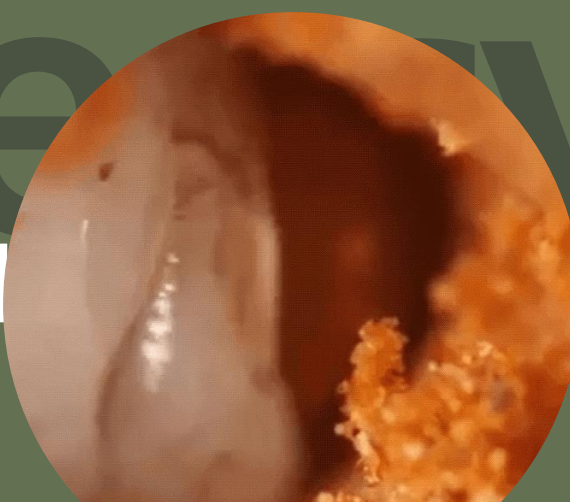
fight defenses



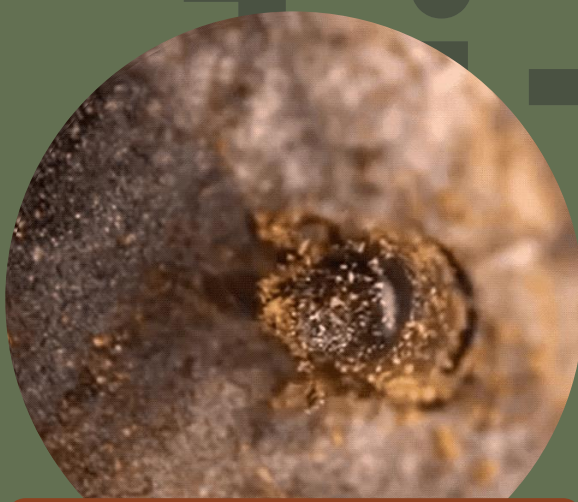
lay eggs



larvae feed



offspring exit



Bark Beetle ID



- Size of a grain of rice
- Difficult to identify, even with microscope
- Rely more on gallery shape and host!

Western Pine Beetle

- Host: Ponderosa pine
- 2 generations per year
- Larvae feed/overwinter in bark
- Symptoms: pitch tubes, frass, woodpecker activity, road-map galleries



Western Pine Beetle



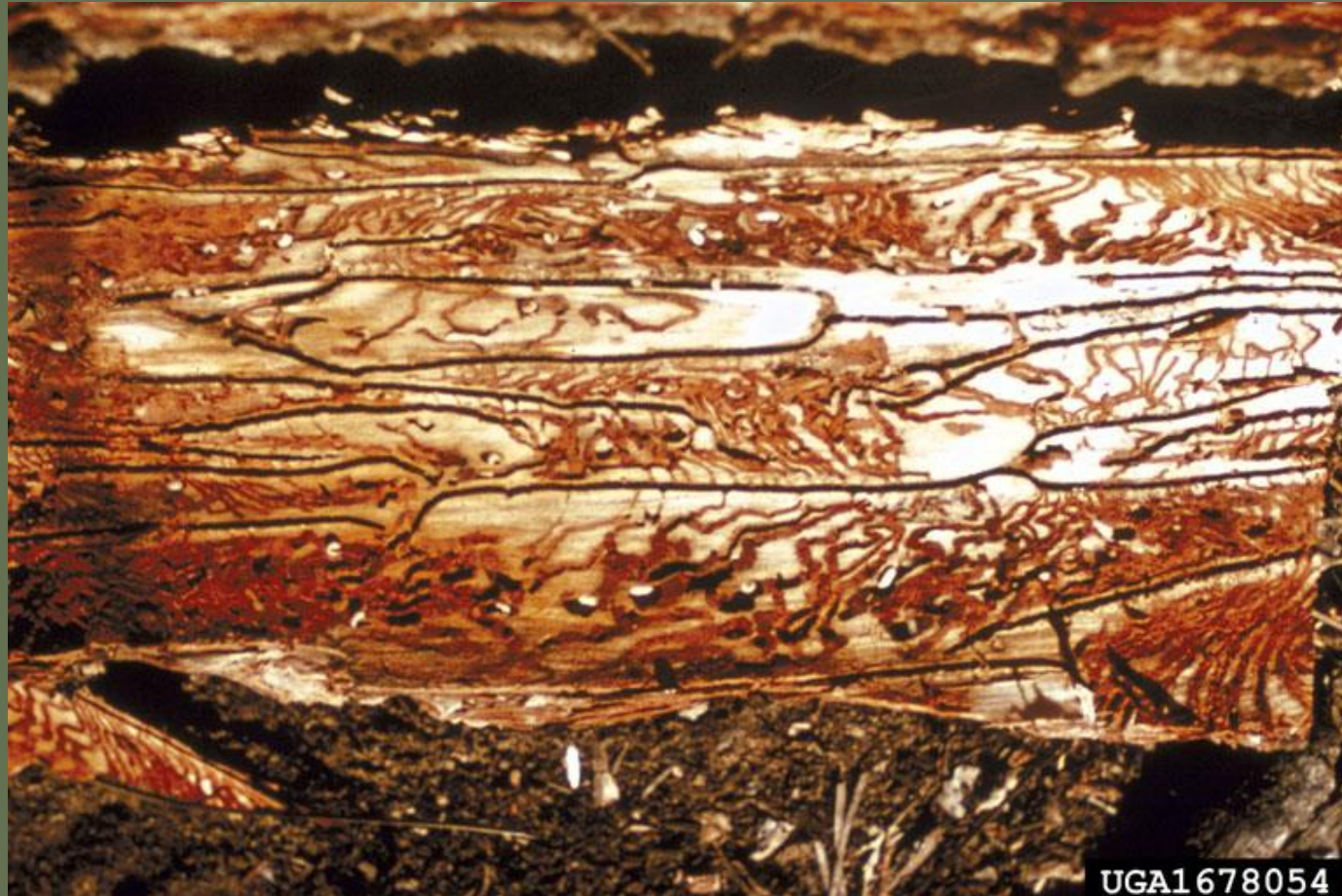
Pine Engraver Beetle



- Host: Ponderosa and Lodgepole pine <8"DBH, pine slash
- 2-3 generations per year
- Symptoms: no pitch tubes, red frass, y or x shaped gallery



Pine Engraver Beetle



Pine Engraver Beetle



Pine Engraver Beetle



Pine Engraver Beetle



- Commonly follows human activity
- Will enter any green slash, emerge in 6 weeks, find the closest host of any size class

Pine Engraver Beetle



Douglas-fir Beetle



- Host: Douglas-fir, windthrown western larch
- 1 generation per year
- Symptoms: frass, j-shaped gallery



Douglas-fir Beetle



Douglas-fir Beetle



- Manage downed DF and WL
- MCH = DFB anti-aggregation pheromone
- 1 cap per tree for individual coverage
- 1 cap every 54 ft in a grid for blanket coverage
- **Please contact us if you are considering MCH!**

Fir Engraver Beetle



- **Host: Grand fir**
- **1 generation per year**
- **Not typically widespread damage**
- **Symptoms: blow outs, horizontal egg galleries**

Fir Engraver Beetle

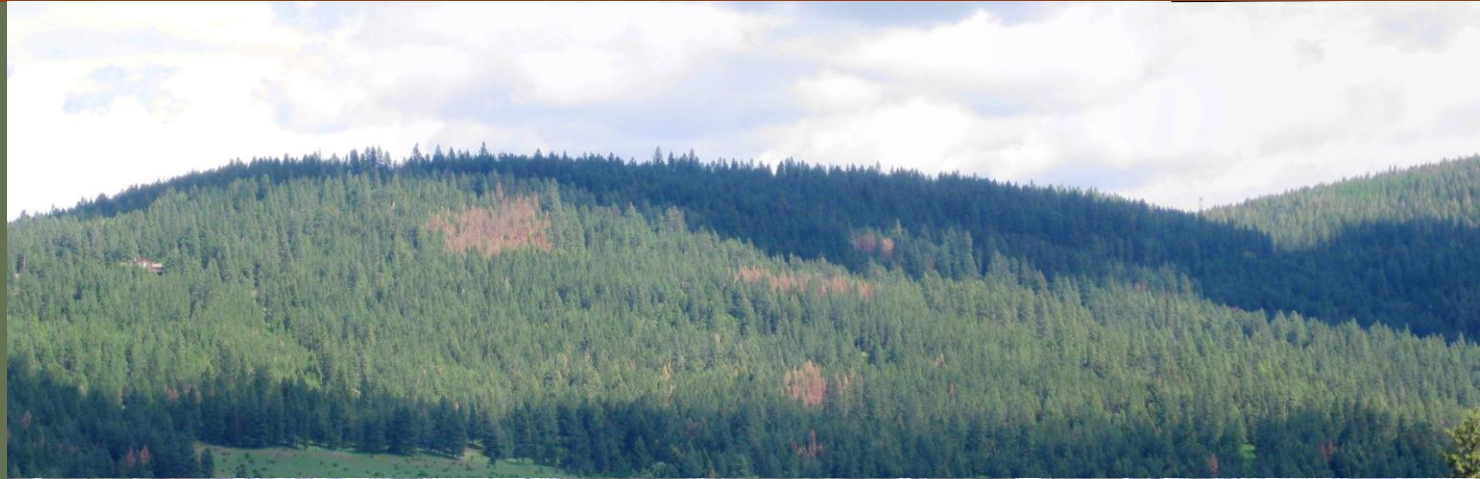


Fir Engraver Beetle



Bark Beetles and Drought

- **Increased effects on south/west facing slopes**
- **Increased effects on rocky and sandy soils**



Bark Beetles and Drought/Stress

- **Stressed trees emit compounds attractive to bark beetles**
- **Stress also reduces trees defense abilities**



Bark Beetles and Drought/Stress

- Thinned stands (<100sqft/acre) do not have to compete for resources
- Increased vigor = better defenses



Defoliators

- Includes larch looper, Douglas-fir tussock moth, and others
- Larvae will feed on the tree foliage, doesn't necessarily cause mortality
- More susceptible when stressed
 - Drought
 - Root disease
 - Overstocked stands



- Common forest insect pests
- Common forest diseases
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Root Disease

- Armillaria, schweinitzii, annosum
- Most susceptible hosts:
 - Grand fir (white fir)
 - Douglas-fir (red fir)
- Symptoms/Signs:
 - Thin crown
 - Slow growth
 - Mycelial fans
 - Trees of many size classes and species dying



Root Disease Management

- Plant tolerant species
 - Western larch
 - Ponderosa pine
 - Western white pine
- Shift species composition
 - Focus harvests/thinnings on susceptible species, leave tolerant (<30% susceptible species)
- Ultimately, it will persist



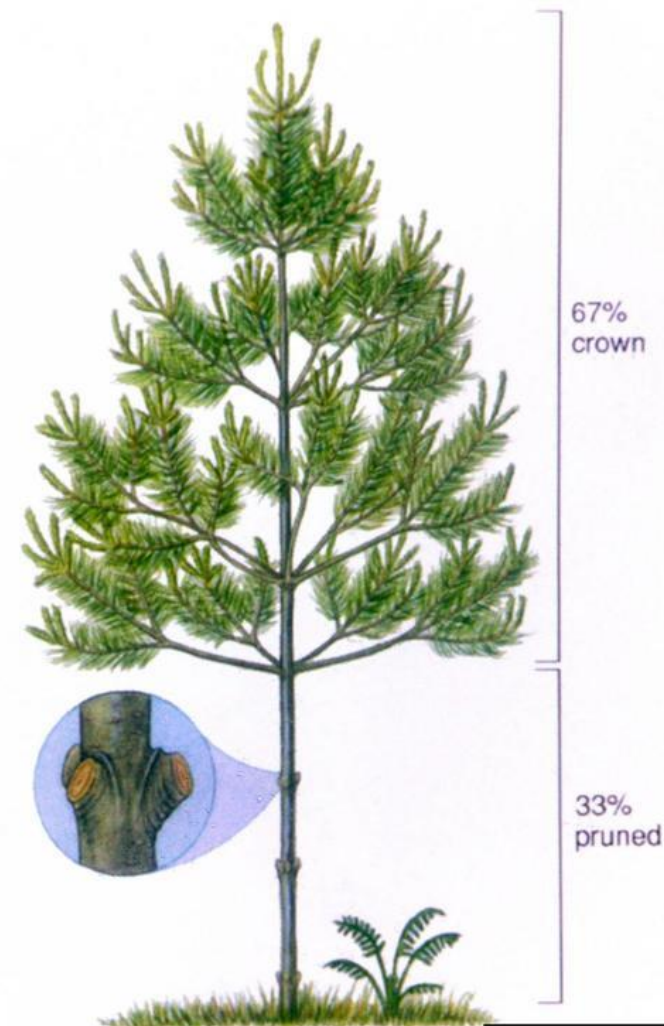
White Pine Blister Rust

- Idaho primary hosts:
 - Western white pine
 - Whitebark pine
- Secondary hosts:
Indian paintbrush,
Ribes sp., etc.
- Symptoms/Signs:
 - Branch flagging
 - Cankers/fruitlet bodies
 - Mortality



White Pine Blister Rust Management

- Only plant blister rust-resistant white pine
- Pruning
 - Prune off infected limbs
 - Prune up from the ground, reduces infection rates drastically (no more than 50% of live crown)
 - U of I extension holds course on White Pine Pruning



Dwarf Mistletoe

- Many species, each mistletoe has its own host species
- Hosts:
 - Western larch
 - Pines
 - Douglas-fir
- Management:
 - Even-aged stand
 - Sanitation treatments
 - Overall, not a serious issue



Larch Needle Cast

- Foliar disease
- Host: Western larch
- Management:
 - Unnecessary given the deciduous nature of larch; will get a fresh start each spring when new needles grow



- Common forest insect pests
- Common forest diseases
- **Animal damages to look for**
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Antler Rub



Deer/Elk/Moose Browsing



Deer/Elk/Moose Browsing



Porcupine Damage



Porcupine Damage



Bear Damage



Pocket Gopher



Voie/Mouse



Animal Management

- Trapping
- Baiting
- Exclusions
- Vexar tubes on young trees

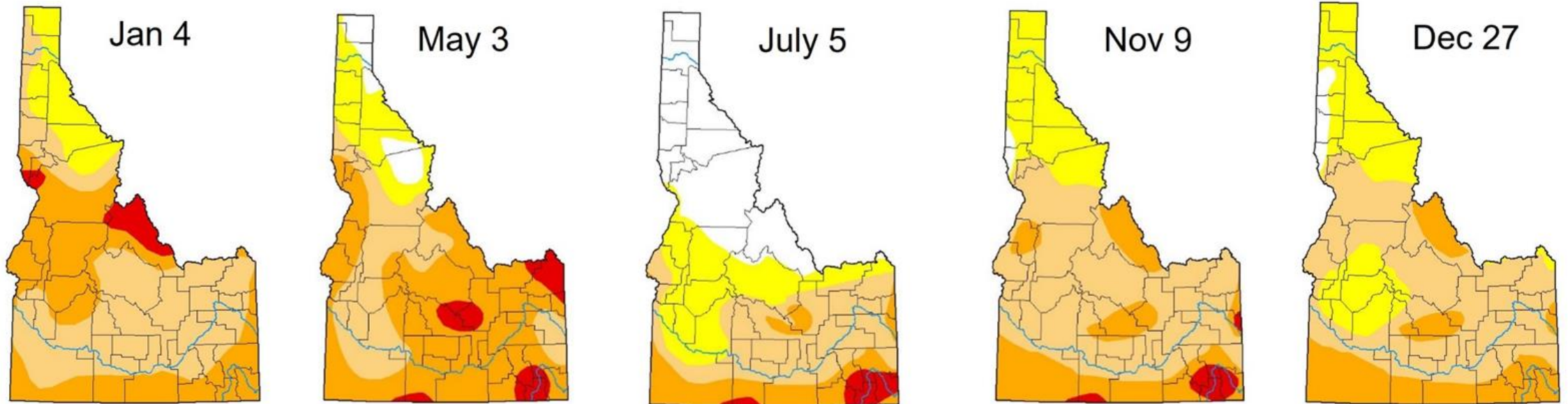


Scott Roberts, Mississippi State
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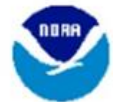
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Drought Conditions



2022 Idaho Drought

Intensity:

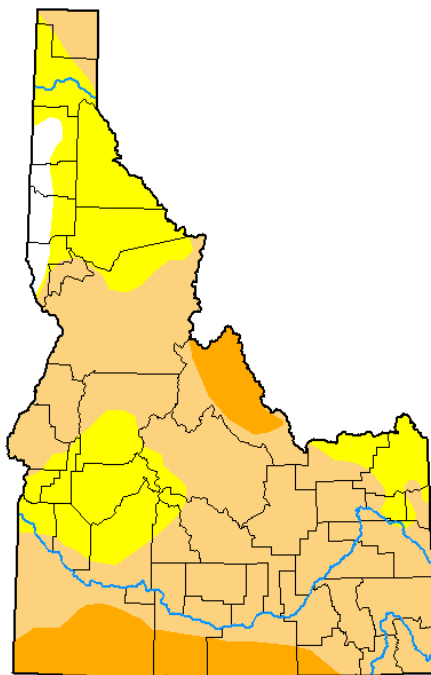


droughtmonitor.unl.edu

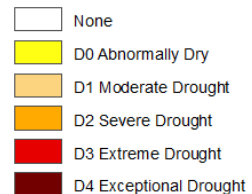
Drought Conditions

U.S. Drought Monitor Idaho

February 7, 2023
(Released Thursday, Feb. 9, 2023)
Valid 7 a.m. EST



Intensity:



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:

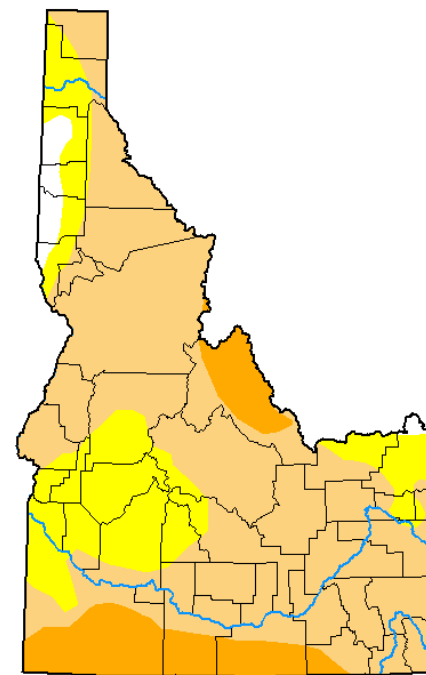
Brian Fuchs
National Drought Mitigation Center



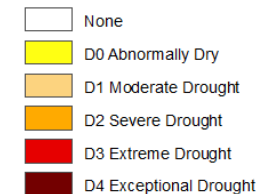
droughtmonitor.unl.edu

U.S. Drought Monitor Idaho

March 7, 2023
(Released Thursday, Mar. 9, 2023)
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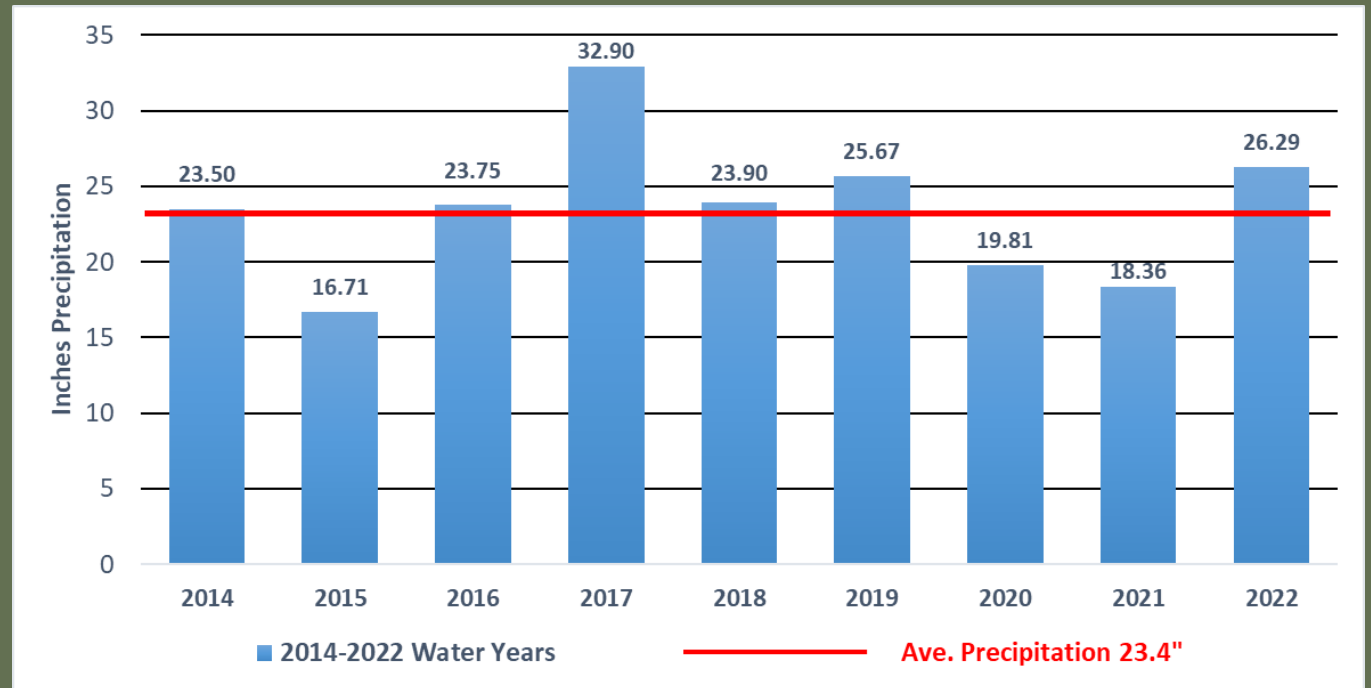
Deborah Bathke
National Drought Mitigation Center



droughtmonitor.unl.edu

Bark Beetles and Drought

- Pine engraver and other bark beetles began to act up in 2016 after the 2015 drought



Western Pine Beetle

Western Pine Beetle on McCroskey
State Park, April 2022



Pine Engraver Beetle

Pine Engraver Near Blanchard,
June 2022



Douglas-fir Beetle

Douglas-fir beetle on
Boise NF, October 2022

Fir Engraver Beetle

Fir Engraver West of Ciesla



Spruce Spider Mites

Spruce Spider Mites West of Council



Spruce Spider Mites

Spruce Spider Mites West of Council



Larch Needle Cast

Larch Needle Cast West of Blanchard



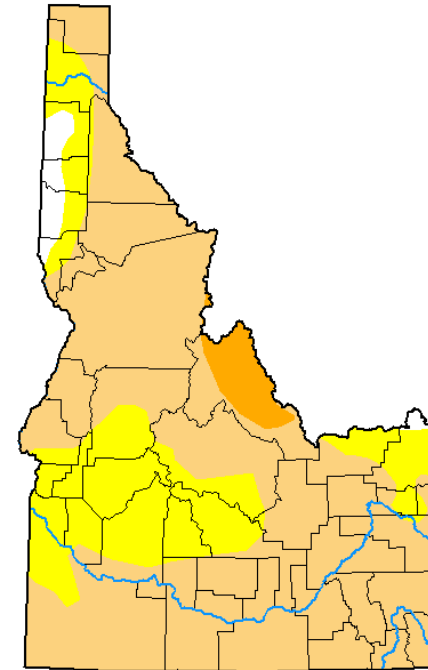
- Common forest insect pests
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More Drought?

- Still currently experiencing drought conditions
- Possibly continues through this summer

U.S. Drought Monitor Idaho

March 21, 2023
(Released Thursday, Mar. 23, 2023)
Valid 8 a.m. EDT



Intensity:

None
D0 Abnormally Dry
D1 Moderate Drought
D2 Severe Drought
D3 Extreme Drought
D4 Exceptional Drought

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Author:

Curtis Riganti
National Drought Mitigation Center



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Beetle Activity

- Given the drought conditions of last few years, bark beetle activity will begin to become visible
- Woodboring beetles may take out some highly stressed trees



Beetle Activity

- Remove any currently infested trees right now, before beetle flight



Beetle Activity



- Manage your slash piles to avoid pine engraver
- Manage windthrow to avoid DF beetle

Root Disease



- Root disease is ever-present
- Beetles always get the credit

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