Riparian Habitat & Invasive Species

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Stewardship Foresters

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Riparian Habitat

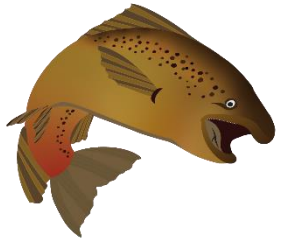
Riparian Habitat

What is "Riparian Habitat"?

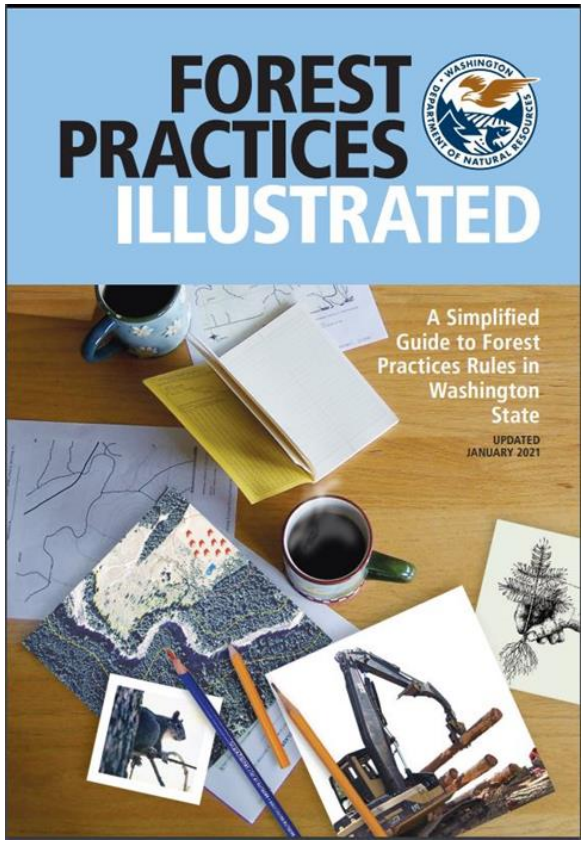
- **Streams, wetlands, other waterbodies** and the **associated vegetation** around each.

- Under Forest Practices, riparian habitat is allotted certain protections based on a variety of factors.
  - Small Forest Landowner Office
    - Regulatory Assistance
  - Forest Practices Application Mapping Tool
  - Priority Habitat & Species Map

Riparian Habitat
Stream Definitions



- **Shorelines of the State/Stream Type S:** All the waters of the state where the average annual flow is 20 cubic feet per second or greater. Usually large named rivers or creeks.
- **Stream Type F:** Streams, lakes, and ponds that are used by fish, amphibians, wildlife, and for drinking water.
- **Stream Type Np:** Perennial streams. These flow year-round either on the surface of the streambed or sometimes below the surface for some distance.
- **Stream Type Ns:** Seasonal streams. These do not flow year round but are connected to a Type S, F, or Np stream.
- **Stream Type U:** Modeled streams which have not been verified in the field.



Riparian Habitat
Wetland Definitions

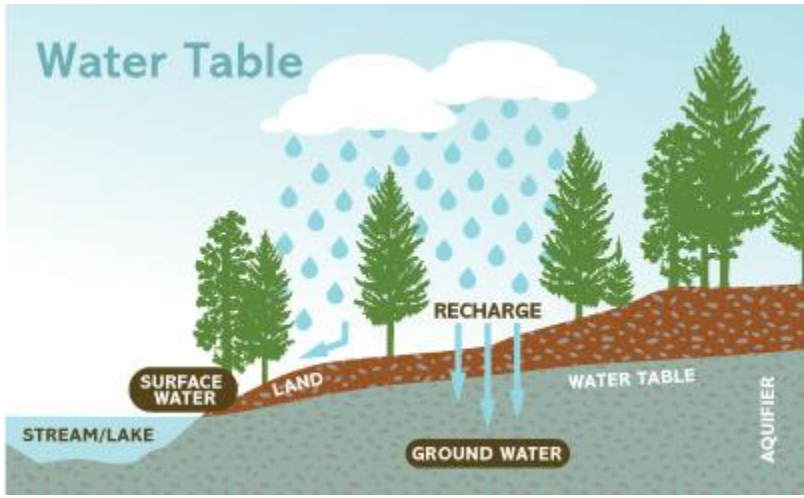
- **Wetlands:** *Areas that are saturated or covered with water long enough and often enough that their soils and plants differ from those in nearby uplands.*
  - **Type A:** At least ½ acre of open water for one week during the growing season, with surrounding crown closure less than 30 percent.
  - **Type B:** All other non-forested wetlands greater than ¼ acre.
  - **Forested Wetlands:** Wetlands with tree canopy cover closer of at least 30 percent.

- **Bog:** *Wetland or forested wetland consisting of saturated organic materials, such as peat and muck, and plants that tolerate acidic soils, such as sedges and bog laurel.*

Riparian Habitat
Water Quality, Erosion, and Soils

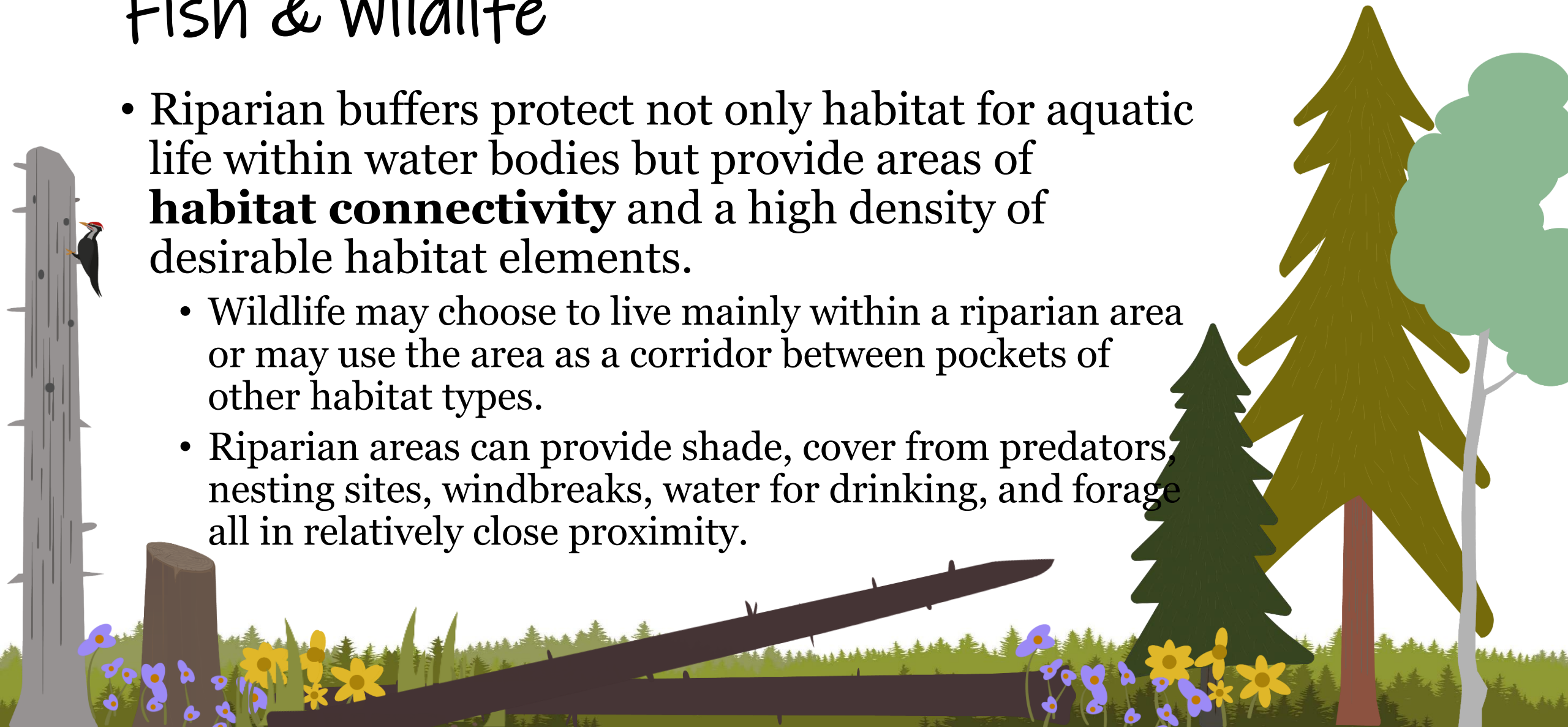
- Water Quality is a major concern, especially when riparian areas contribute directly or indirectly to watersheds used for drinking, irrigation, or fish harvest.

- Vegetated riparian buffers help slow the flow of water, filter runoff, increase infiltration of water, provide shade, stabilize stream banks and slopes, and reduce overall erosion.



Riparian Habitat
Fish & Wildlife

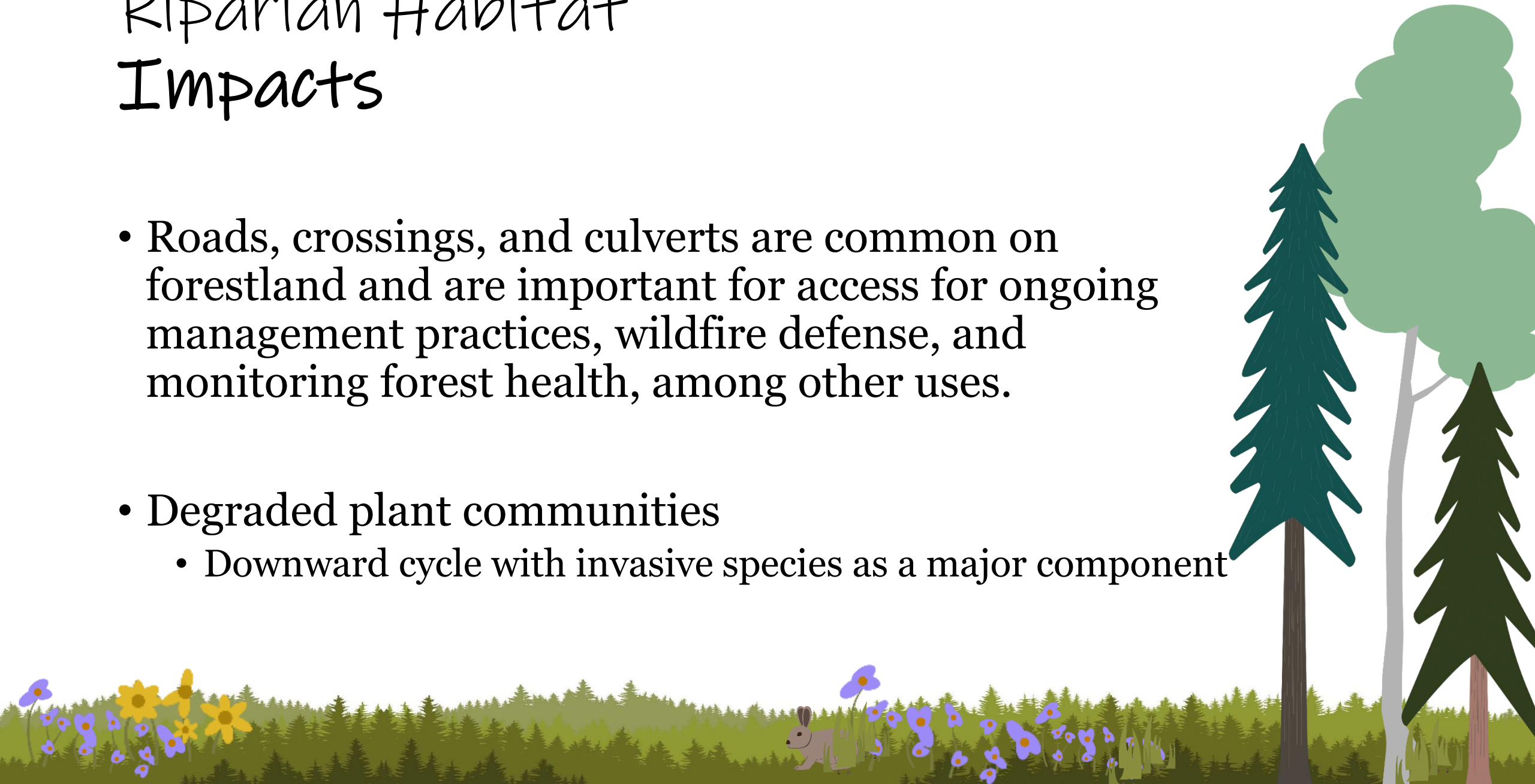
- Riparian buffers protect not only habitat for aquatic life within water bodies but provide areas of **habitat connectivity** and a high density of desirable habitat elements.
  - Wildlife may choose to live mainly within a riparian area or may use the area as a corridor between pockets of other habitat types.
  - Riparian areas can provide shade, cover from predators, nesting sites, windbreaks, water for drinking, and forage all in relatively close proximity.



Riparian Habitat
Impacts

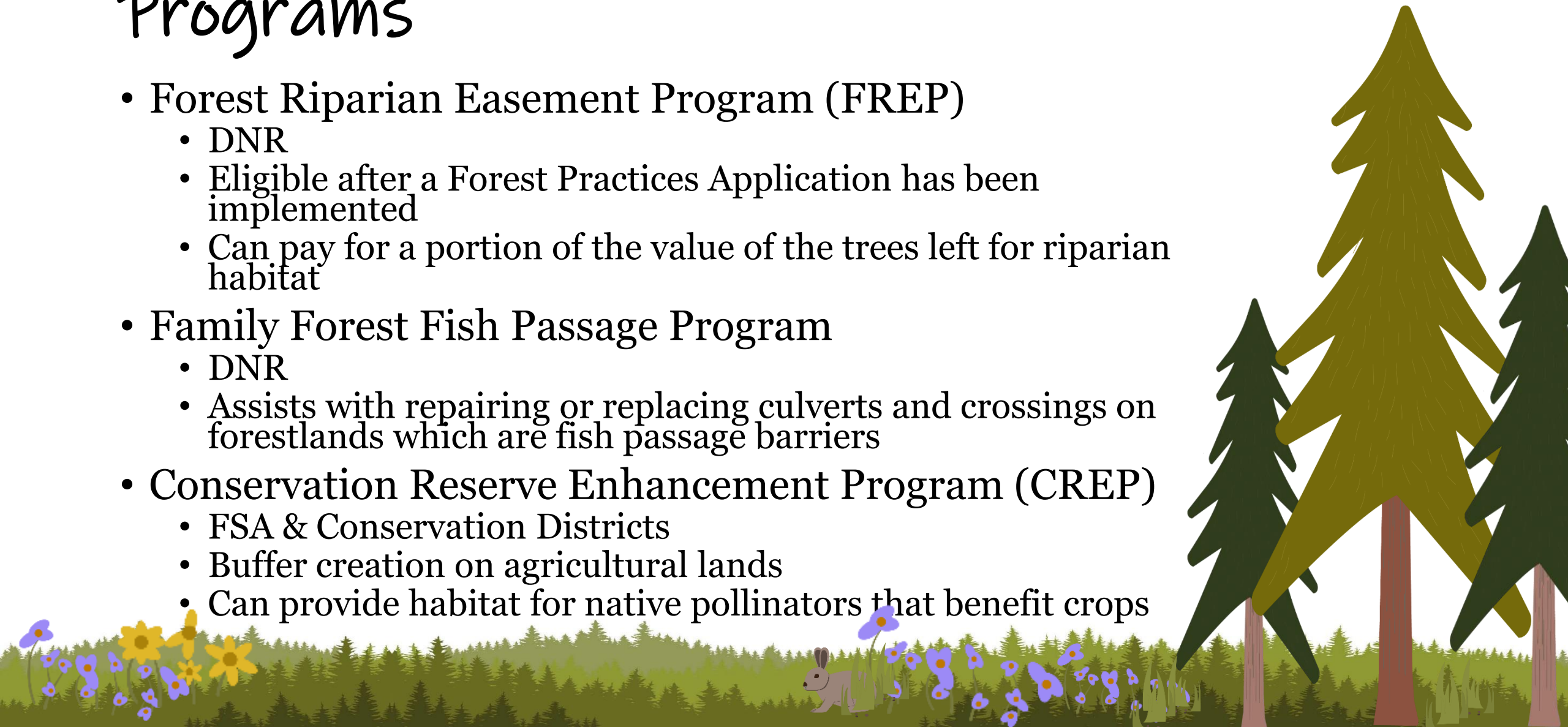
- Roads, crossings, and culverts are common on forestland and are important for access for ongoing management practices, wildfire defense, and monitoring forest health, among other uses.

- Degraded plant communities
  - Downward cycle with invasive species as a major component



Riparian Habitat Programs

- Forest Riparian Easement Program (FREP)
  - DNR
  - Eligible after a Forest Practices Application has been implemented
  - Can pay for a portion of the value of the trees left for riparian habitat
- Family Forest Fish Passage Program
  - DNR
  - Assists with repairing or replacing culverts and crossings on forestlands which are fish passage barriers
- Conservation Reserve Enhancement Program (CREP)
  - FSA & Conservation Districts
  - Buffer creation on agricultural lands
  - Can provide habitat for native pollinators that benefit crops



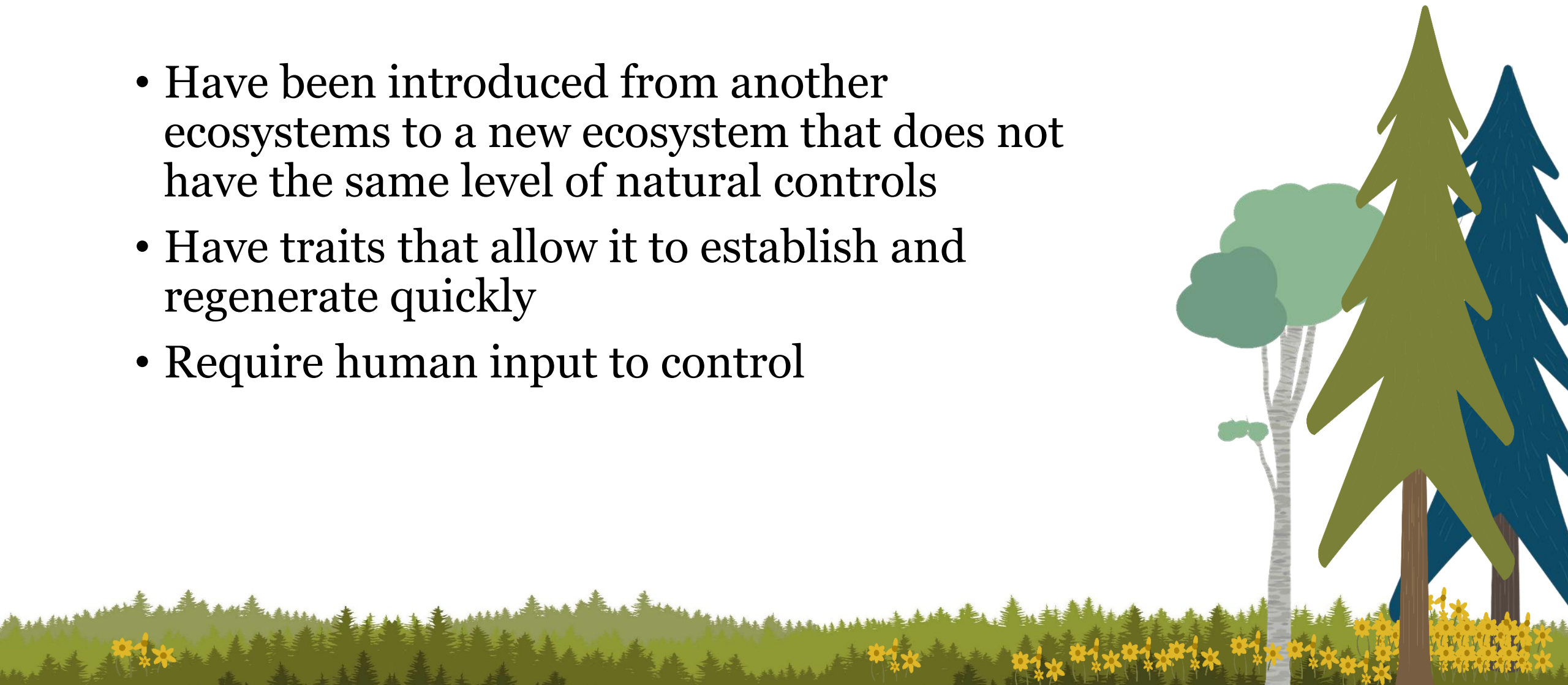

Invasive Species

What Do Most Non-Native Invasive Species Have in Common?

They Have Unintentionally Harmed Our Environment

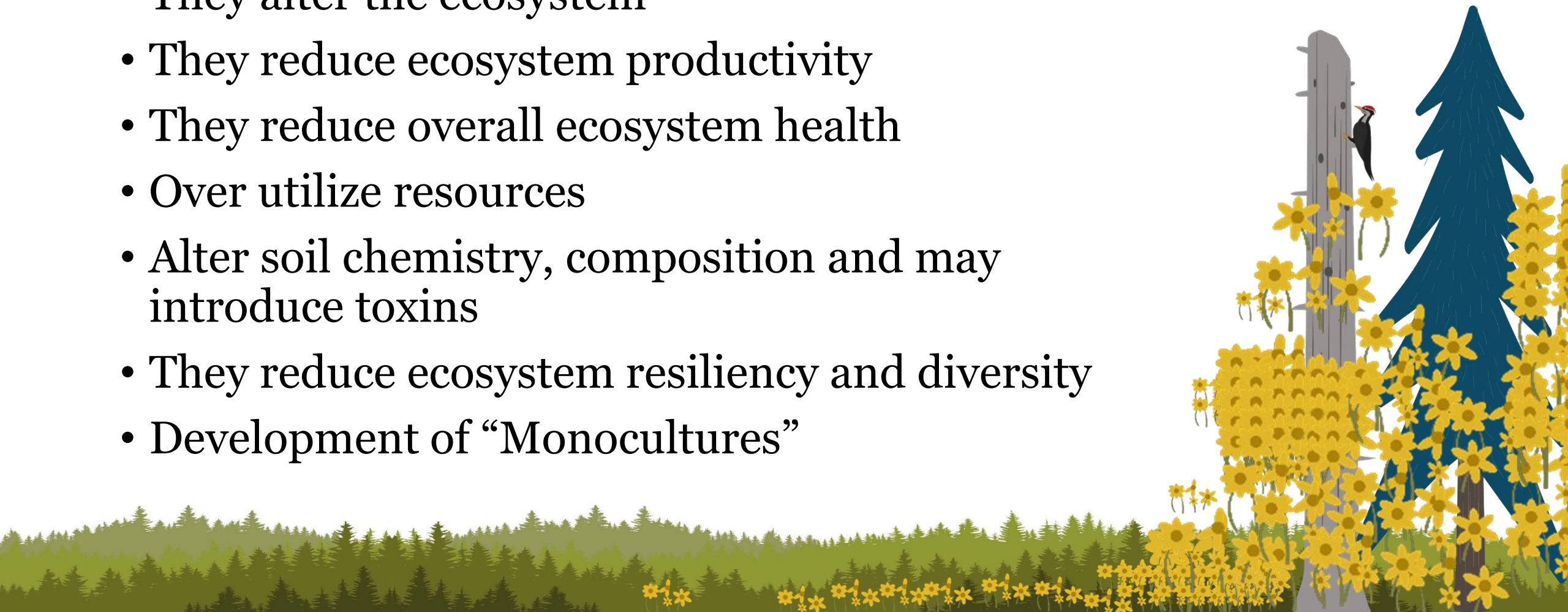
Invasive Species - Defined

- Have been introduced from another ecosystems to a new ecosystem that does not have the same level of natural controls
- Have traits that allow it to establish and regenerate quickly
- Require human input to control



Why are invasives a problem?

- They alter the ecosystem
- They reduce ecosystem productivity
- They reduce overall ecosystem health
- Over utilize resources
- Alter soil chemistry, composition and may introduce toxins
- They reduce ecosystem resiliency and diversity
- Development of “Monocultures”



Control of Invasives – Integrated Pest Management (IPM)

- Lower overall vegetation management costs,
- Safer work sites,
- More effective long-term vegetation control and management,
- Reduced environmental impacts on land, water, habitat and wildlife, and
- Reduced environmental and human health risks.

Control of Invasives – Integrated Pest Management (IPM)

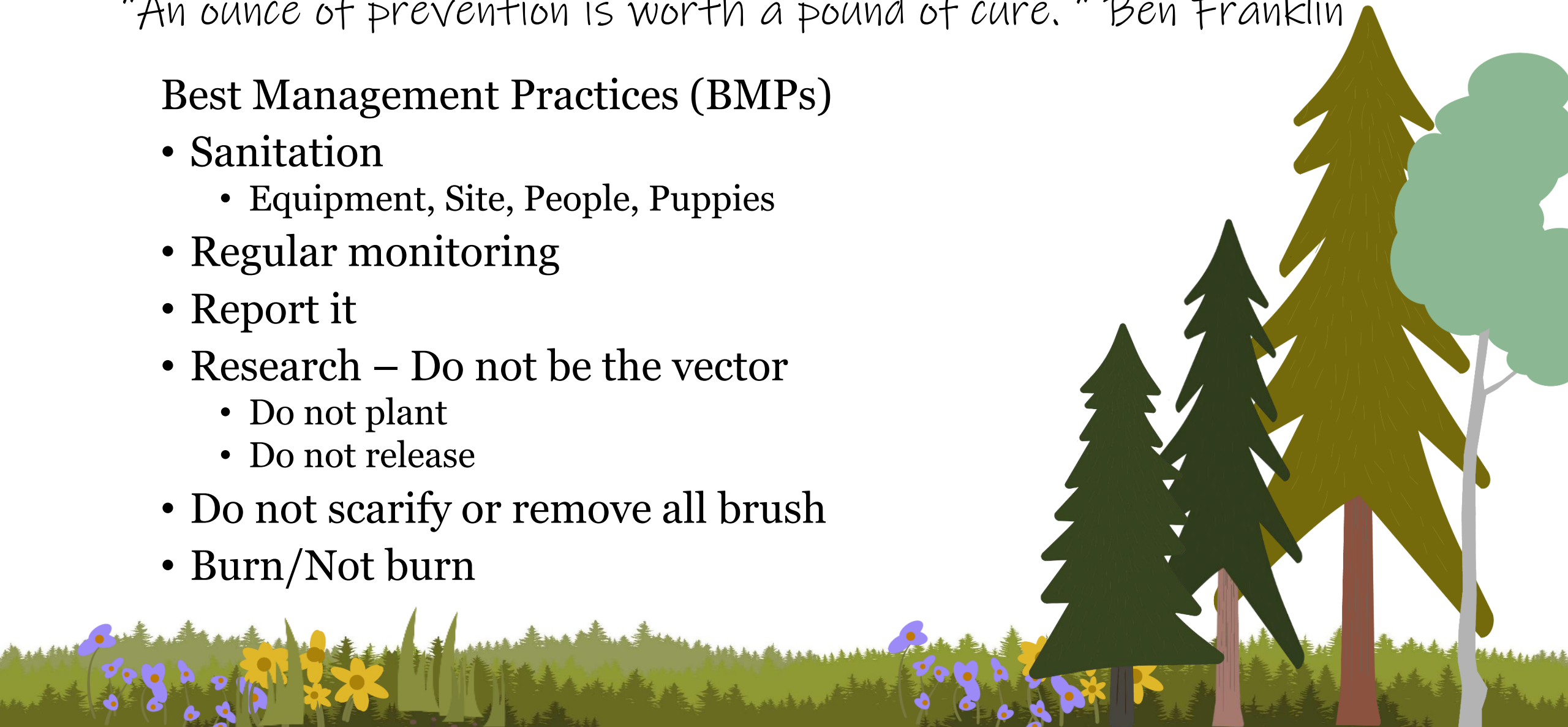
- **PREVENTION**
- **Identification**
- **Measure**
- **Establish methods of control**
  - Usually will require more than one method and/or repeated treatment
  - Apply control methods consistently and effectively
- **Monitor and restart if necessary**
  - Be ready to adapt or switch controls

Prevention – The cheapest solution

"An ounce of prevention is worth a pound of cure." Ben Franklin

Best Management Practices (BMPs)

- Sanitation
  - Equipment, Site, People, Puppies
- Regular monitoring
- Report it
- Research – Do not be the vector
  - Do not plant
  - Do not release
- Do not scarify or remove all brush
- Burn/Not burn



Scotch Broom – IPM for Site 1

Prevention

- Overgrazing accelerates establishment
- Clean machinery
- Introduce competitive species on disturbed sites
- Remove before it seeds

Identification And Measure

- What is it?
  - Rate of spread
  - Type of control
  - Potential relationships
- How much is there
  - Type of control
  - Timing of control
  - Cost of control

Scotch Broom – IPM for Site 1

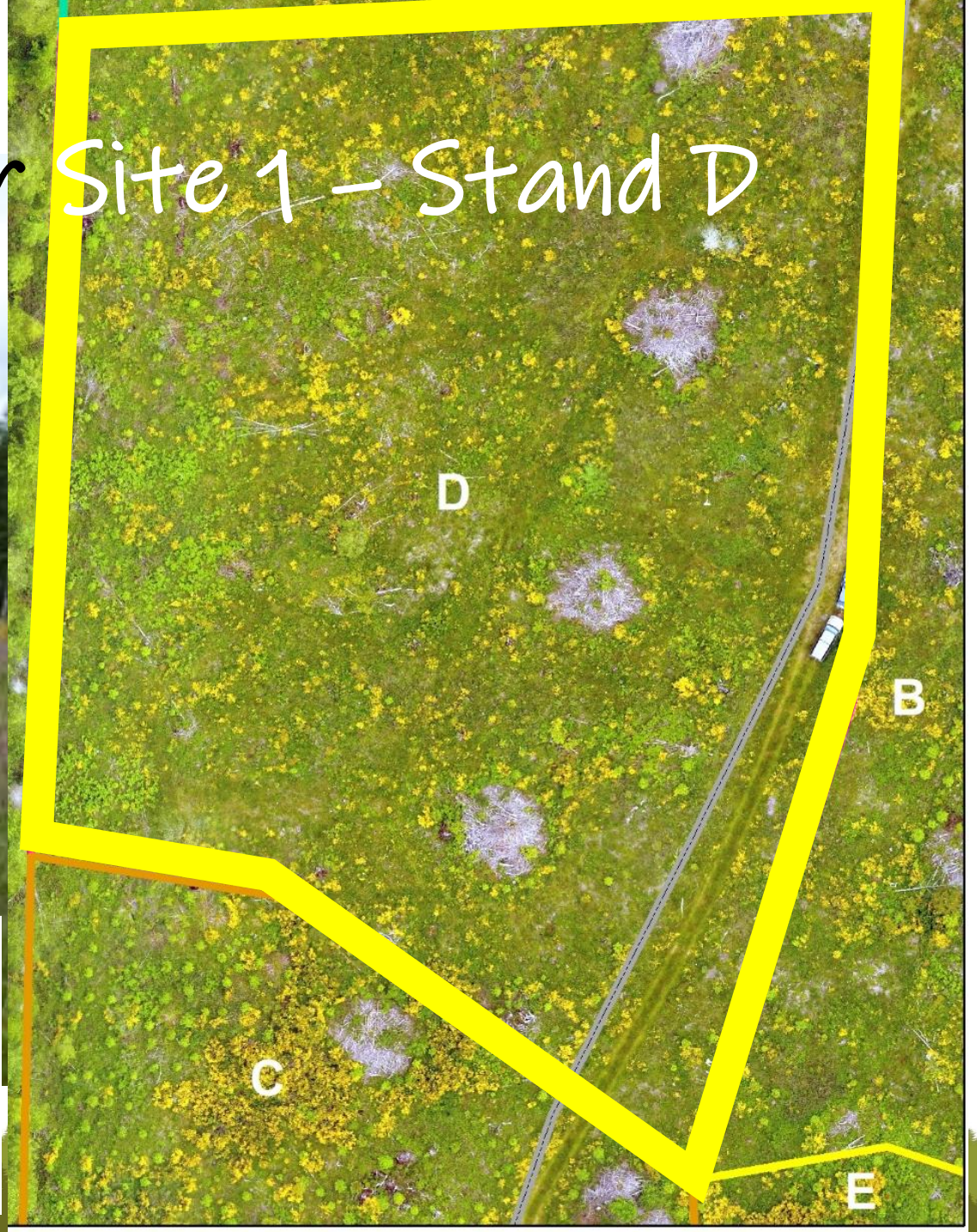
Identification –

- Yellow flower
- Angular stems
- There is a lot of it!
- Look alikes -
  - French brooms's - three-parted leaves, flowers clusters of 4-10.
  - Gorse - Spiny stems

Control Considerations

- Long term seed bank
- Soil disturbance accelerates spread
- Control before seed pods explode
- Can be controlled by plant competition

Scotch Broom – IPM for Site 1 – Stand D



How much is there? 20% Coverage

What size? 3 feet tall 1” Stems

Timber stocking? Douglas fir - 30 TPA

Scotch Broom – IPM

How much is there? 80% Coverage

What size? 6 feet tall 3” Stems

Timber stocking? Douglas fir - 130 TPA

Methods of Control

More than one method and/or repeated treatments

- Cultural
- Biological
- Mechanical
- Chemical

Cultural Control Methods

Decreases the suitability of the environment

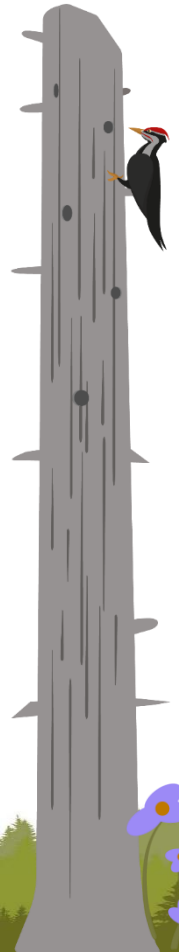
- Fertilization to help wanted vegetation compete with the weed
- Revegetating a site with a competitive, desirable species

Plus -

- Very targeted
- Long period

Minus-

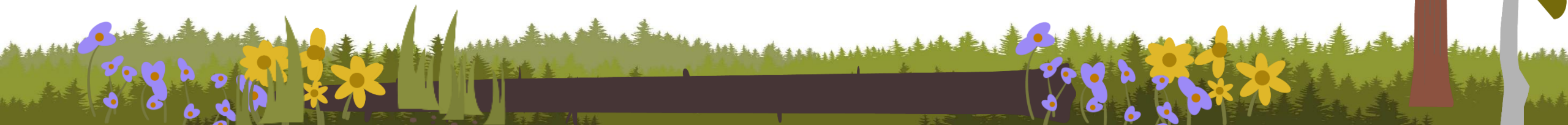
- Takes a long time
- Costly



Scotch Broom – IPM for Site 1

Cultural Control Methods

- Burning can increase the broom population and requires followup
- Plant rapidly growing overstory – very few competitive enough



Biological Control Methods – The Mikey Approach

Find something that will eat it;

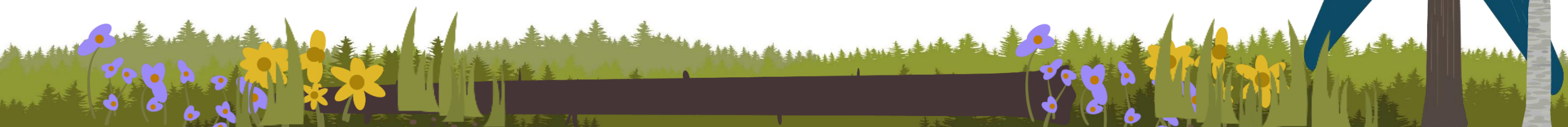
- Grazing
  - Sheep, goats, ducks
- Insects
  - Introducing new insects +/-
- Pathogens
  - Scary

Plus -

- Very targeted (maybe)
- Large scale
- Long term
- Semi-Natural

Minus-

- Limited number
- Takes a long time



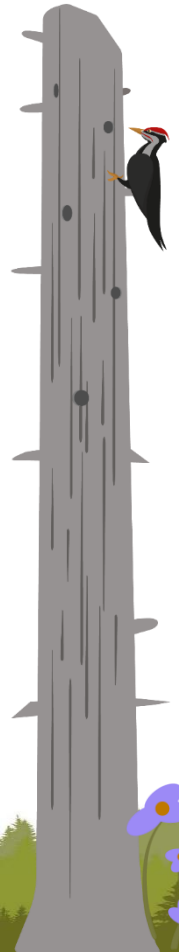
Scotch Broom – IPM for Site 1

Biological Control –Available methods

- Scotch broom seed weevil, *Exapion fuscirostre*,
  - larvae feed on seeds, Adults feed on flowers and the tips of stems
- Scotch broom bruchid, *Bruchidius villosus*,
  - larvae feed on seeds and reduce reproduction.

Not effective yet

- Grazing- high enough to continually suppress growth
  - Goats and sheep - indiscriminate feeding at low levels
  - Horses will have neurologic, digestive and reproductive effects.




Mechanical – Manual Control Methods

- Hand pulling
- Tilling
- Mowing
- Mulching/Solar
- Burning
- Flooding

Plus -
- Very targeted
- Limited impacts
- Small plants, loose soil

Minus-
- Costly/Labor intensive
- Small area
- Multiple entries
- Trampling

Scotch Broom – IPM for Site 1

Mechanical Control –Available methods

- Hand pulling and digging up plants
  - Weed Wrench, Extractigator, or Uprooter
  - Soil disturbance stimulates seed germination.
- Chopping, cutting or mowing
  - Larger stems cut to ground in summer eliminates resprouting
  - Flat areas
  - Timing
  - Repeated entries

Chemical
How - Application Methods

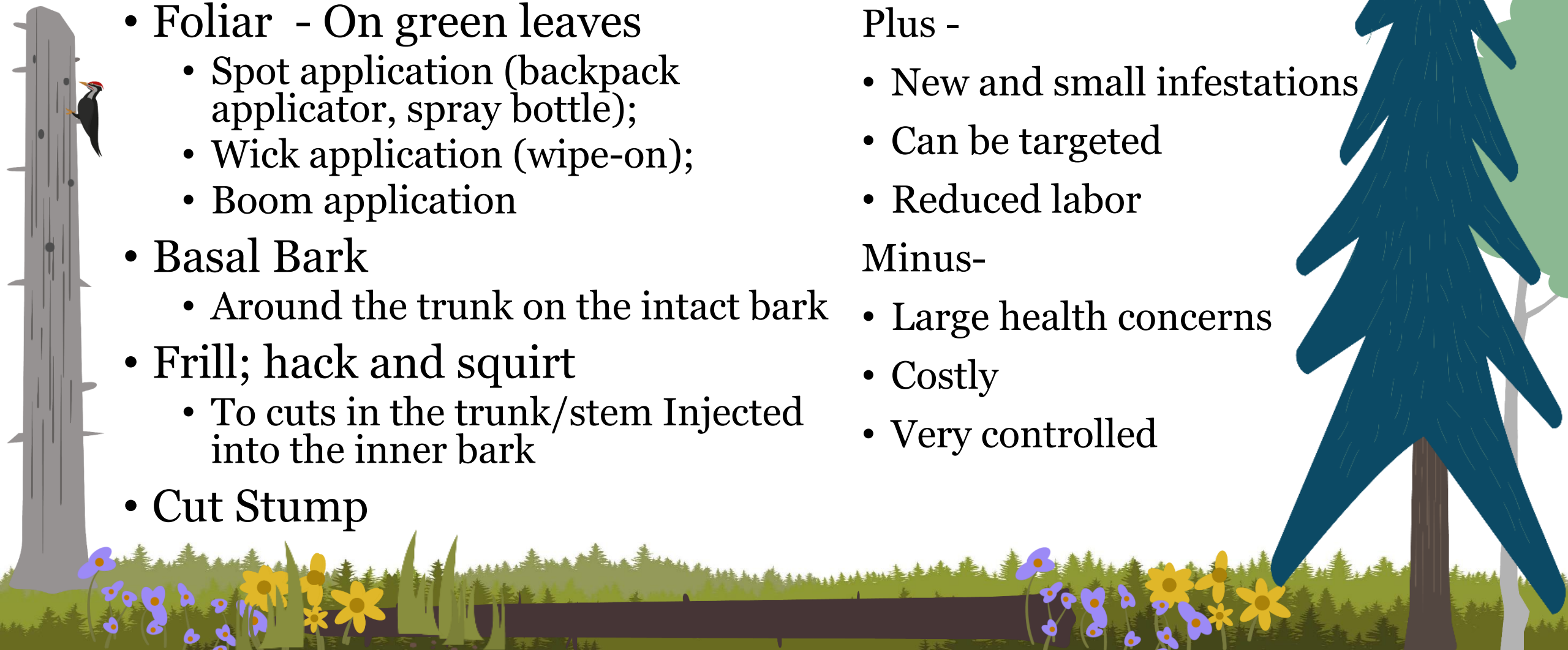
- Foliar - On green leaves
  - Spot application (backpack applicator, spray bottle);
  - Wick application (wipe-on);
  - Boom application
- Basal Bark
  - Around the trunk on the intact bark
- Frill; hack and squirt
  - To cuts in the trunk/stem Injected into the inner bark
- Cut Stump

Plus -

- New and small infestations
- Can be targeted
- Reduced labor

Minus-

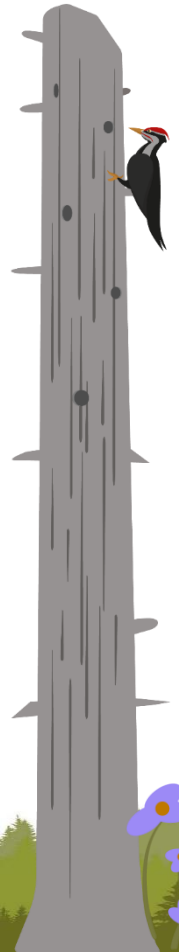
- Large health concerns
- Costly
- Very controlled



Scotch Broom – IPM for Site 1

Herbicide Control Available Methods

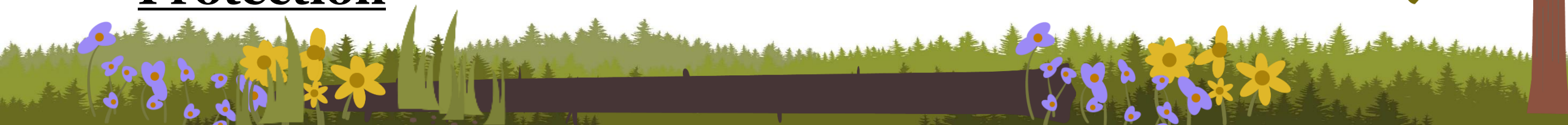
- Foliar spray
  - Backback Sprayer, Boom on tractor
- Basal bark treatment
  - Paint on stem
- Cut stump
  - Spray on cut stump



Chemical – Read the Herbicide Label AND MSDS:

Material Safety Data Sheets (MSDSs) have;

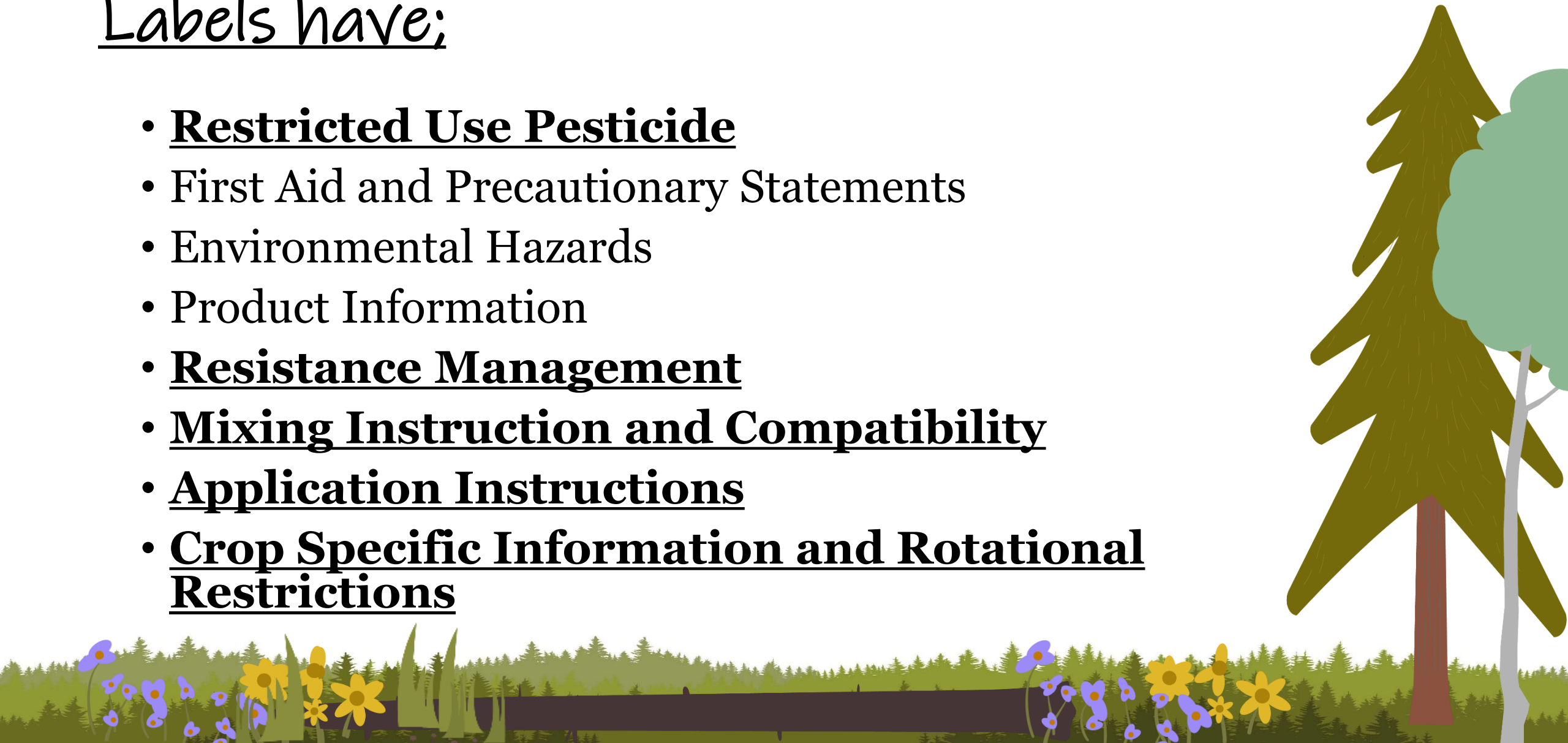
- **Hazard(s) Identification**
- Composition/Information on Ingredients
- **First-Aid Measures**
- Fire-Fighting Measures
- Accidental Release Measures
- **Handling and Storage**
- **Exposure Controls/Personal Protection**
- Physical and Chemical Properties
- **Stability and Reactivity**
- **Toxicological Information**
- **Ecological Information**
- **Disposal Considerations**
- Transport Information
- Regulatory Information



Chemical – Read the Herbicide Label AND MSDS:

Labels have;

- **Restricted Use Pesticide**
- First Aid and Precautionary Statements
- Environmental Hazards
- Product Information
- **Resistance Management**
- **Mixing Instruction and Compatibility**
- **Application Instructions**
- **Crop Specific Information and Rotational Restrictions**



Scotch Broom – IPM for Site 1

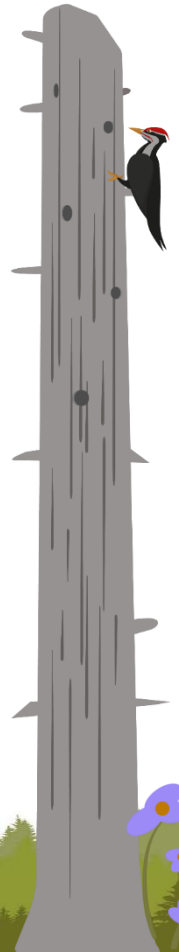
Herbicide Labels and MSDS's

Glyphosate

- Apply to actively growing plants in the spring.
- Recommended surfactant improves results.
- Caution - Controls competing grasses, plants

Triclopyr ester related products (Garlon) or (Crossbow)

- When actively growing. Garlon 4 and Crossbow- basal bark anytime
- Foliage must be thoroughly wet.
- Garlon products are registered for forestry use
- Crossbow registered for pastures



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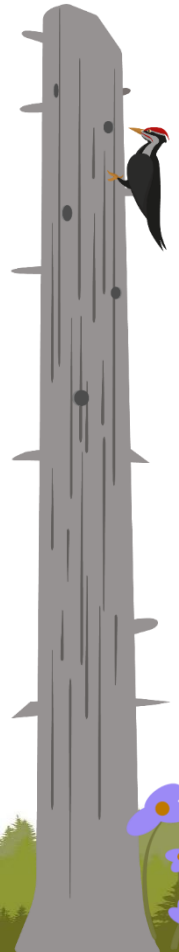

Solutions –
Mechanical Control with Herbicide followup

- Hand pulling plants in D
  - Replant in winter of same year at high density – 600 TPA
  - Follow-up pulling next year
- Chopping, cutting or mowing for E
  - Multiple years of mowing or hand cutting
  - Foliar herbicide (Garlon) with wand in following year
  - Replant next year to obtain 600 TPA
- Monitor Both Annually – Pull sprouts before seed set

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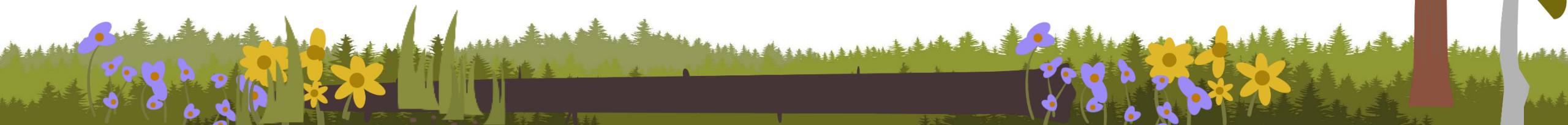


Takeaways

Riparian Habitat & Invasive Species

- Riparian habitat provides many benefits while it remains diverse and vigorous
- Riparian habitat can also be an island for invasive species
- Treating invasive species is an important step to keeping riparian areas diverse and vigorous
- There are many methods we can use to treat invasive species, it's all about finding the method that is appropriate an effective for the species and situation.

Forest Field Tour!

May 21st

Eatonville, WA

Registration – coming soon!

Contact Us!

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Or contact your local conservation district for assistance!

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