Invasive Management on PCP Preserves

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NCDA&CS Plant Conservation Program

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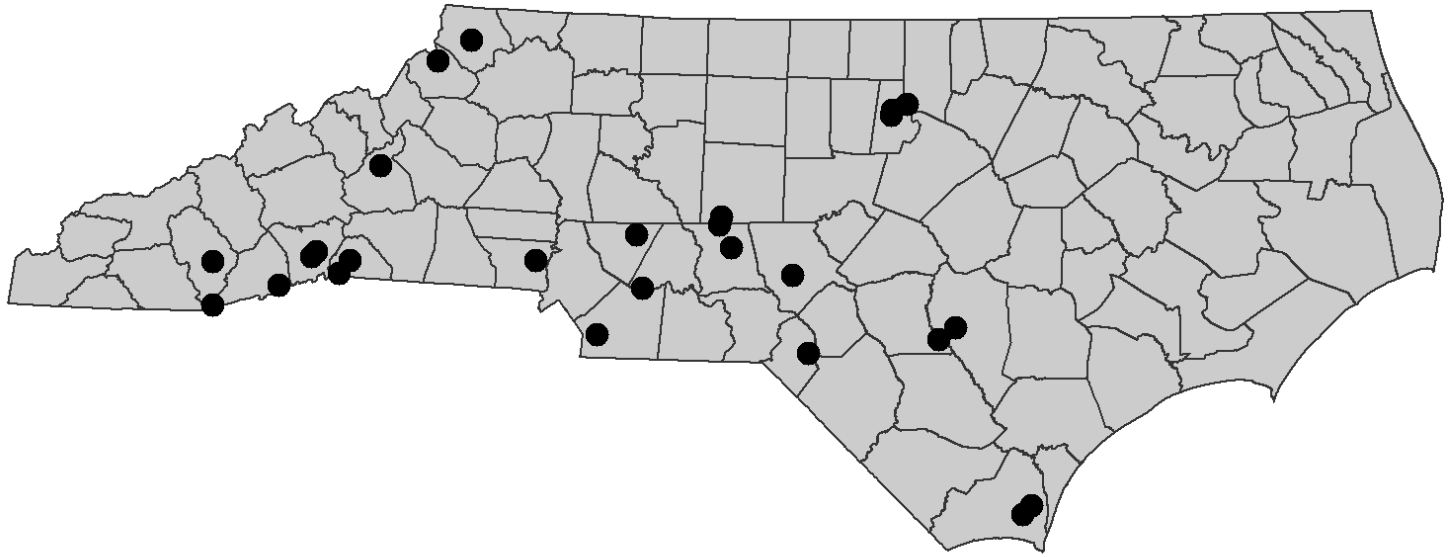
NC PCP's mission

…is to conserve the native plant species of North Carolina in their natural habitats, now and for future generations.

Listing species

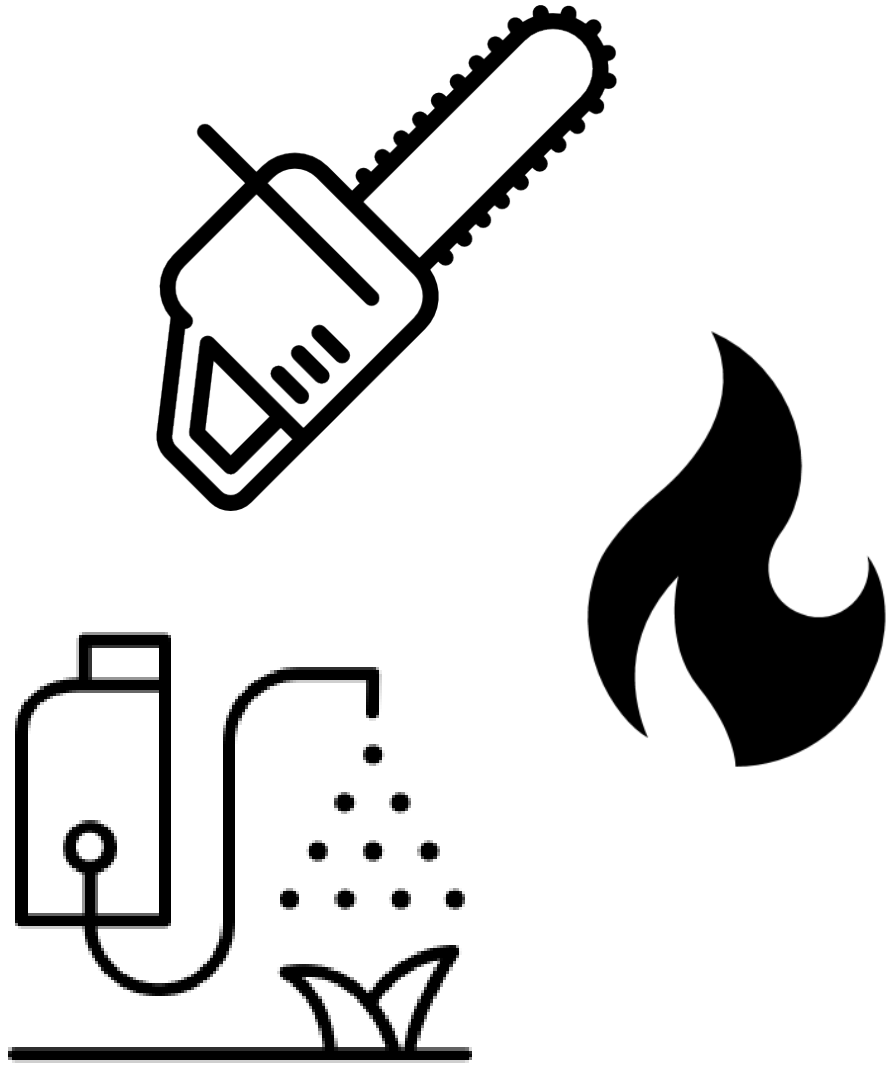
PCP Preserves



NC Plant Conservation Goals

Threats to Imperiled plants*

1. Development (n=157)
2. Fire Suppression (n=126)
3. Incompatible Forestry (n=89)
4. Hydrological Alterations (n=72)
5. Invasive Species (n=71)



* NC PCP Species Assessment Data

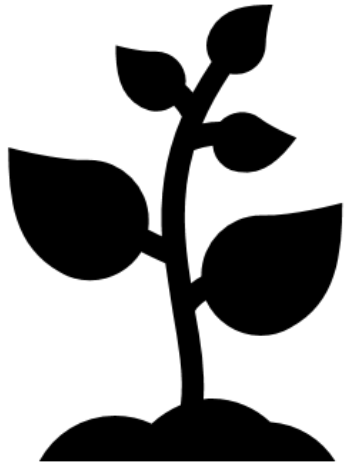
What do we know?

- How much/many? How big is the infestation?
  - Is it new??

What do we know?

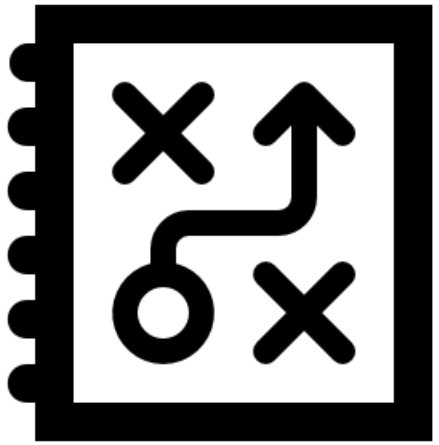
- Where is it?
  - In proximity to rare or sensitive species?
  - Is it isolated or a spill-over from adjacent land?

What do we know?



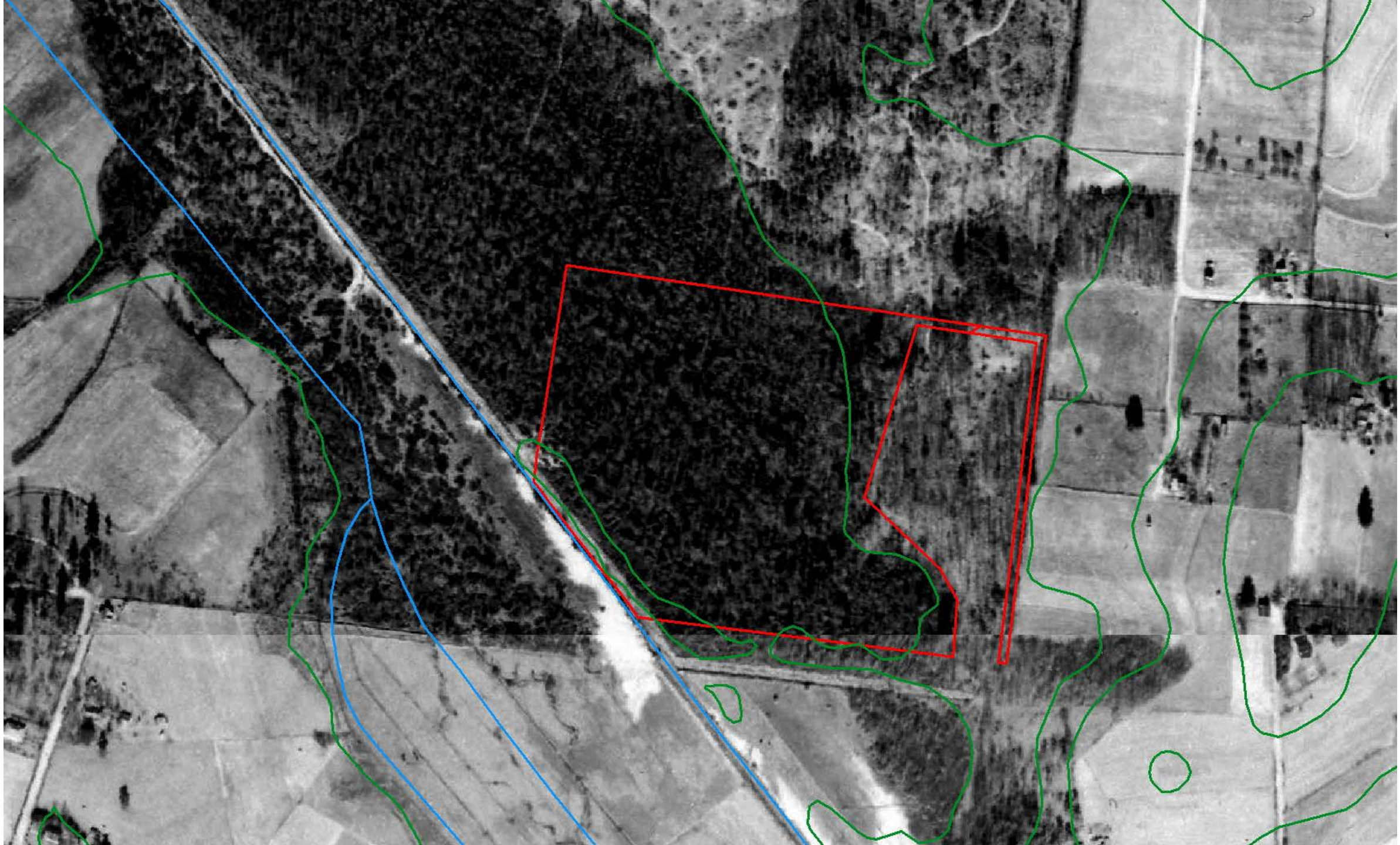
- What do we know about this species?
  - How does it reproduce? What life stage of the plant should we be targeting for control?
  - How does our other management impact the spread of this species?
  - How does it impact natural processes (fire)?

Effectiveness vs. Caution—a summary



- Buffer around rare or sensitive species and use conservative methods.
- Possibly use more aggressive methods in less sensitive areas.
- Carefully consider how herbicides, fire, or other treatment method works and how that may cause unintended consequences.
- Develop a realistic plan that accounts for at least three years of consistent, higher intensity, effort.

Reed canary grass (*Phalaris arundinacea)* control in a wetland



Baugh et al. 2011. Restoration of a Southern Appalachian Mountain Bog: Phase 1. Reed Canary Grass Removal. *Ecological Restoration* 29 (1&2): 13-14.

Baugh and Evans. 2011. Restoration of a Southern Appalachian Mountain Bog Phase II: Hydrology. *Natural Areas Journal* 31: 501-504

June 2018

June 2018

Phalaris arundinacea

June 2017

June 2018

August 2018


June 2018


August 2018

Next Steps

- Continue with treatment plan, carefully monitoring any signs of spread into new areas to ensure they are treated as well.
- Also continue with treatment plan of the other invasives I mentioned but didn’t described in detail and carefully monitor that these do not spread into disturbed areas.
- Work to reforest the open field to facilitate this restoration goal.
- Collaborate with experts regarding possible hydrology fixes.

Balancing the good and bad…

Disturbance…

So… what do we do about disturbance, especially when CAUSED by our well-meaning restoration efforts?

Practices to consider:

- Working from the outside inward toward the core
- Carefully conducting decontamination of equipment and clothing
- Planting native species to facilitate recolonization by desirable spp.
- Consider if there are mgt. practices that need to be postponed until invasives are better in check---fire and *Microstegium*??

Non-plant invasive species too…

Laurel wilt at PCP Preserves: Pondberry (*Lindera*) & Pondspice(*Litsea*)

- Red bay ambrosia beetles are spreading Laurel Wilt Disease by infecting members of the Laurel family across the Southeast.
- Pondberry and pondspice are both susceptible, as are swamp bay and sassafrass.
- USFWS Section 6 Reverted Funds Grant
  - Develop an early detection scheme
  - Remove non-imperiled host plants
  - Field test use of fungicide on listed species

Lily leaf spot at Tater Hill

- Disease confirmed at all of 9 study sites.
- *P. inconspicua* conidia (the fungal spores of the Lily Leaf Spot Disease) were confirmed for all three tested species: L*. grayi, L. philadelphicum,* and *L. superbum.*
- Although many plants flower, there is a reduced, often very reduced, seed set due to early senescence.

Lily leaf spot at Tater Hill

- In 2017 we counted >1,000 flowering *L. grayi* at Tater Hill, but **very few** produce seeds.
- PCP is coordinating with NC Botanical Garden to safeguard seeds for long-term storage.
- LLSD confirmed in herbarium specimens going back decades.
- Fungicide trials being developed.
- Research needed on management options—how to best produce best conditions?

Questions?