Points of interest: Each station is marked with a white plastic stake with a **RED** band near the top and a letter keyed to the explanations that follow in this guide. All other stakes are either for the **Advanced Trail Guide** (available online and at the Upland Pine Trail Kiosk), or for research purposes.

**Why restore upland pine?**
The longleaf pine ecosystem once covered over 90 million acres in the southeastern US. Logging, pitch extraction, development, and fire suppression over the last 150 years has reduced this unique ecosystem to 2% of its original area.

This map shows the native range of longleaf pine (*Pinus palustris*).

Restoration of NATL’s upland pine ecosystem began in 1995. Manual removal of laurel oaks and controlled burns have removed many vines and invading hardwoods, but there is still work to be done. Here you can see the difference between the un-restored land to the north, and the area undergoing restoration to the south.

**A Grass stage longleaf pine**

Longleaf pines were planted in this ‘restoration island’ in 2005. Some are still in their “grass stage” (yellow flags), and the seedlings may be mistaken for clumps of grass! Longleaf pines remain in the grass stage for about 4 to 8 years while they accumulate underground energy reserves. In a fire the needles burn, but the bud is protected from damage.

**B Rocket stage longleaf pine**

After at least several years in the grass stage, young longleaf pines quickly sprout up and grow tall enough that the terminal bud is out of reach of most fires. Longleaf pines sprouting out of the grass stage can grow as much as 6 feet in a single year. Notice the thick, fire-resistant stem of these ‘rocket stage’ longleaf pines.

**C Loblolly pine**

Loblolly pines (*Pinus taeda*) are the least fire-tolerant of the local pines due to their relatively thin bark and fire-sensitive seedlings and early stages. While fire was excluded, some loblollies in this area grew to a fire-tolerant size. Loblolly pines have shorter needles, more numerous cones, and smaller cones than longleaf pines. Can you tell the difference?

**D Sapling longleaf pine**

In 2004, 25 longleaf pines were planted in this area. The trees were about 5 feet tall when they were planted – how many can you find now?

**E Wiregrass**

Wiregrass (*Aristida stricta*) is the dominant ground cover in pristine upland pine – here you can see clumps of wiregrass that were planted as thumb-sized “plugs” by volunteers (pink flags). The thin leaves of wiregrass are highly flammable, but after a fire they quickly grow back. Wiregrass helps sustain upland pine ecosystems by spreading fires with its own leaves.

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**First longleaf regeneration**

In this area you will find the first generation of longleaf pine seedlings that have naturally established since restoration activities began. During the winter of 2005-2006, the adult trees around you produced thousands of seeds, and soon many sprouted. Most of these did not survive the severe spring droughts of 2007 and 2008, or the controlled burns of March 2007 and June 2008. See if you can find the few survivors here and elsewhere along the trail (Hint: see orange flags).

**G Bristly greenbriar**

If you take shortcuts in the forest, you are sure to encounter the sharp spines of this tough native vine (*Smilax tamnoides*). Its roots contain edible starch, which can be extracted by grating, pulverizing, and boiling the tubers.

**H Unrestored upland pine**

To show the effect of permanently excluding fire from upland pine, this area will not be restored. The few mature longleaf pines show that the area was once favorable to longleaf reproduction. Now hardwoods dominate the site, and there are no longleaf pine seedlings.

**Natural Area Teaching Lab**

The University of Florida Natural Area Teaching Laboratory (NATL) is a 60-acre tract of land dedicated to teaching students and the public about ecology and biotic diversity.

Basic and advanced trail guides to [Hammock, Upland Pine, and Old Field](#) trails are available at entrance kiosks to each ecosystem (see map). A trail with interpretive signs circles the 3-acre [SEEP Wetlands](#), an ecologically engineered stormwater retention basin.

For more information about NATL, including species lists, historical photos, soil maps and student projects, please visit [http://natl.ifas.ufl.edu](http://natl.ifas.ufl.edu).