Update of NATL upland pine restoration plan

December 2007

Context

After 13 years of restoration effort, it is time to update plans for achieving the goal of establishing a pineland in NATL similar to that which occupied that portion of NATL's area in pre-settlement times. To allow for differing restoration treatments of four tracts of NATL's pineland during those 13 years (see p. 4), four plans are required. Each plan outlined here offers opportunities for class or independent student projects, and the intent of the Natural Area Advisory Committee [NAAC] is to encourage the development and execution of such projects. Examples of how projects may be encouraged include help from the NATL Graduate Teaching Assistant in setting up class projects and minigrants of up to $500 offered by NAAC for approved student projects.

The following restoration plans were developed with generously offered input from Anne Barkdoll, Stephen Coates, Shibu Jose, Leda Kobziar, Alan Long, Hector Perez, Jack Putz, Carrie Reinhardt, Tom Workman, and others.

(1) Public area pine (nPAP and sPAP)

***Prescribed burns*.**

Burn annually unless such frequent burning is judged counter productive or conflicting with some management goal other than restoring the ecosystem to near pre-settlement condition as quickly as possible. Plan to burn during the early growing season (April or early May). Should spring drought make an early growing season burn impractical, resort to an early rainy season burn (June).

Examples of management goals that would justify deviations from annual burning include (1) showing the difference in the effects of annual and biennial burning by scheduling burns of the small portion of the public area pine that is east of the Upland Pine Nature Trail every other year instead of every year; (2) enhancing the understory by direct seeding, which may require skipping an annual burn for all or portions of the public area pine to improve the results.

Ground cover restoration

Develop or select a means of measuring progress in ground cover restoration and use it.

Facilitate efforts by Carrie Adams and Jack Putz to develop class project(s) related to speeding progress by direct seeding of ground cover species or by other means.

Encourage Hector Perez to study or to sponsor study of the germination of seeds of selected ground cover species and to produce slips of these species to be planted.

Planting longleaf pines

No further planting is needed. Natural seeding has already produced grass-stage longleaf pines.

Tree removal

Girdle and poison out-of-place trees--namely, loblolly pine (except for two or three at north end of area, as examples for the Upland Pine Nature Trail), laurel oak, sweet gum, and black cherry*.

(2) North restricted area pine (nRAP)

Prescribed burns

Burn annually unless such frequent burning is judged counter productive or conflicting with some management goal other than restoring the ecosystem to near pre-settlement condition as quickly as possible. Plan to burn during the early growing season (April or early May). Should spring drought make an early growing season burn impractical, resort to an early rainy season burn (June).

An example of a management goal that would justify deviation from annual burning would be to facilitate a project by a class or individual to determine the effect of skipping a burn the year after planting containerized pines on the long-term success of the transplants. (This would use the 1742 pines planted 27 Jun to 14 Jul 2007 and require parts of nRAP to be left unburned in 2008.)

Ground cover restoration

Apply lessons learned from efforts in PAP.

Planting longleaf pines

Rely on natural seeding to take over the regeneration of longleaf pine. If it appears that natural seeding will not be sufficient (i.e., if few longleaf seedlings establish), plant containerized seedlings once ground cover is appropriately restored.

Tree removal

Girdle and poison out-of-place trees--namely, loblolly pine, laurel oak, sweet gum, and black cherry*.

(3) South restricted area pine (sRAP)

Prescribed burns

Tom Workman is willing to divide the area into plots that will demonstrate the effects of different frequencies and/or timing of burns. No later than March 2008, those who wish to have their students observe or study the effects of different burning regimes should let Tom know what regimes would be of greatest interest.

Ground cover restoration

If plots are burned at different frequencies and/or at different seasons, the plots should be monitored for differences in ground cover. If burning is on the same schedule as elsewhere, apply lessons learned from efforts in PAP to restore ground cover.

Planting longleaf pines

Plant no longleaf pines until ground cover is judged to be restored. Then plant containerized pines if natural seeding is judged deficient.

Tree removal

Girdle and poison out-of-place trees--namely, loblolly pine, laurel oak, sweet gum, and black cherry*.

(4) Eastward extension of sRAP

The south block of restricted area upland pine should be extended to include what was inadvertently cut off from the current sRAP in 1997. This requires the Natural Area Advisory Committee to change the management of the area from no-burn to burn. Such a change must be

approved at two successive meetings. If special meetings are called the change can occur in time for a burn in 2008.

Prescribed burns
Burns should be annual and on the same schedule as PAP and nRAP.

Tree removal
Alternative plans have been proposed.

(1) Start by girdling and poisoning the out-of-place trees that are impinging on mature longleaf pines. This will leave the others to provide a partial canopy that may reduce or eliminate the surge of unwanted understory growth experienced in all earlier efforts to restore upland pine in NATL. Schedule the removal of the remaining out-of-place trees to accommodate a study of the effects of a staged removal of the hardwood canopy.

(2) Contract to have the hardwoods harvested. This would speed the tree removal and resemble what would be done in most large scale restoration efforts.

Choice of alternatives could be based on what studies were proposed for this restoration area.

Ground cover restoration
Selecting alternative (1) for tree removal would enable a study of what happens with no intervention other than annual burning and staged out-of-place tree removal. If alternative (2) is selected, the ground cover restoration plan should be integrated with the plan for the rest of sRAP.

Planting longleaf pines
Plant no longleaf pines until ground cover is judged to be restored. Then plant containerized pines only if natural seeding is judged deficient.

* Because black cherry is an historic component of high pine forest (according to Myers and Ewel), a few large black cherry trees will be left in the areas being restored.

NATL Upland Pine Restoration, 1995-2007