

# Proposed Wetland Restoration Case Study Submittal

1. **Project Name and Location:**  
Deep Lagoon Preserve Site No. 78  
Lee County, Florida, USA

Latitude 26°31'38.93"N Longitude 81° 55' 17.65"W

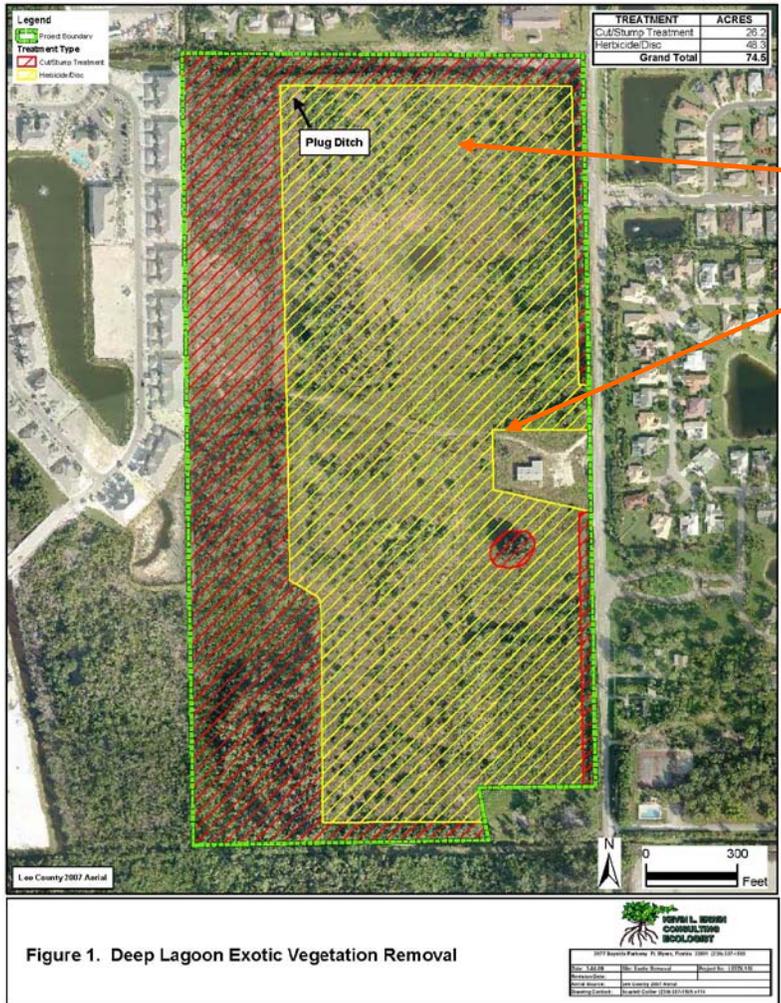


Figure 1. Deep Lagoon Exotic Vegetation Removal



2. **Wetland Hydro-geomorphic Type(s):** Saltwater forested; saltwater herbaceous; freshwater forested; freshwater herbaceous, herbaceous upland.
3. **Project size:** 76± acres  
**Watersheds:** Deep Lagoon; Tidal Caloosahatchee  
**Spatial Location:** Lee County, Southwest Florida, USA 26° 36'N 82° 05'W
4. **Project sponsor:** Lee County Parks & Recreation
5. **Role:** Kevin L. Erwin Consulting Ecologist, Inc. collected topography and hydrology information and subsequently designed a Conceptual Restoration Plan for Lee County Parks & Recreation. KLECE was instrumental in obtaining the required permits from the appropriate regulatory agencies prior to restoration. While applying for the permits, KLECE conducted wildlife surveys, marked seasonal high water levels and mapped the existing vegetation communities onsite. During the restoration process, KLECE provided oversight for the ditch plug and exotic removal activities. KLECE continues to make site inspections and lead the restoration process to date, primarily consisting of exotic vegetation identification and control.

**6. Purpose/drivers:** The Deep Lagoon Site No. 78 property is a 76± acre wetland/upland restoration project sponsored by Lee County Parks and Recreation. Lee County obtained the site through the Conservation 20/20 Program. The Conservation 20/20 Program was established in 1996 for the purpose of purchasing and protecting environmentally sensitive lands. The restoration of the Deep Lagoon site is an important step in accomplishing the Conservation 20/20 goals.

**7. Project goals and degree of goal attainment:**

- Enhancement and restoration of forested and herbaceous saltwater habitats, forested and herbaceous freshwater habitats and herbaceous uplands, with the potential for the creation of forested uplands. – Goal nearly achieved [An area of forested saltwater habitat (mangroves) still needs to be eradicated of exotic tree species. This portion of the project is on hold pending additional funding].
- Restore natural hydrology – Goal fully achieved via ditch plug.
- Return of native wildlife species – Goal fully achieved as evidenced by wildlife use of the site.

**8. Methods of restoration and approximate time to complete:**

This low-impact restoration project consisted of restoring hydrology via plugging a small agricultural drainage ditch and biodiversity via removal of exotic vegetation. Exotic vegetation removal consisted of herbicide application and subsequent discing of a fallow farm field, and cut/stump treatment of exotic tree species. All restoration activities were overseen by an ecologist certified by the Ecological Society of America ([www.esa.org](http://www.esa.org)).

Prior to KLECE's active involvement with the project a large amount of exotic tree species were either removed from the site or killed in place. This process removed some of the biomass, but the exotic seed source was still present and abundant. Under KLECE's oversight, the ditch plug was installed and initial herbicide application of the fallow farm field was conducted in the spring of 2010. The farm field was sprayed with a tractor with an herbicide tank then allowed to season for several days before discing. Discing was repeated to expose soils and allow for re-growth of plants, both native and exotic. Later in the summer of 2010, the farm field received a combination of mowing and herbicide treatments to target exotic and nuisance species. The farm field and the portions of the saltwater forested habitat that were originally treated for exotics were treated again with herbicide during the spring of 2011. Additional follow-up herbicide treatments of each are scheduled for the fall of 2011 and the spring of 2012. Activities such as mowing and prescribed burning may also be used in the future.

**9. How was the project monitored?** Monitoring was conducted periodically throughout the restoration process to document vegetation re-growth patterns and guide future restoration activities.

**10. Is the project part of a larger initiative at a watershed or regional level?** Yes, the restoration project provides a regional benefit to the Deep Lagoon Watershed and subsequently the Tidal Caloosahatchee Watershed.

**11. Is the project considered a success or failure? Please explain why.**

The project is mostly a success to date; however, some exotic tree species have not been removed from portions of the forested saltwater wetlands due to a lack of adequate funding to

complete the task efficiently. Otherwise, native species are rapidly returning to the site, including vegetation and wildlife species. Continued success will depend upon perpetual treatment of exotic and nuisance plant species to prevent them from colonizing large areas of the site.

**12. How could the project have been improved – e.g. location, design, hydrology, construction methods, data collection, etc?** Through additional funding.

**13. Please provide any citations where additional information may be found.**

Deep Lagoon Preserve Land Stewardship Plan. Lee County Parks and Recreation. Lee County, Florida. 2005

[Deep Lagoon Preserve](#)

Kevin L. Erwin Consulting Ecologist, Inc. Lee County Deep Lagoon Preserve Site No. 78 Conceptual Restoration Plan. March 2009.

[Deep Lagoon Conceptual Restoration Plan](#)

**14. Is there any other information on the project you would like to provide?**

- This project is an excellent example of a public-private partnership to achieve successful restoration of environmentally sensitive public lands.
- <http://www.environment.com>