

# LSU Coastal Roots Program

## School Seedling Nursery Program for Habitat Restoration

<http://coastalroots.lsu.edu/>



### PROGRAM STAFF

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### PROGRAM GOALS AND OBJECTIVES:

The overall goal of the *Coastal Roots* Seedling Nursery Program is to assist students in developing an attitude of stewardship toward our natural resources and to provide for them a constructive active learning situation in which they can explore strategies for sustaining our coastal ecosystems.

The following objectives support this goal:

- ✎ Conduct an on-going school-based nursery program growing native plants
- ✎ Involve students in a hands-on habitat restoration planting
- ✎ Engage teachers and students with information on critical coastal environmental issues such as ecological stewardship, wetlands functions and values, wetland loss, habitat restoration and conservation, while learning basic geologic and horticultural concepts and skills.



### PROGRAM DESCRIPTION

The *LSU Coastal Roots* Seedling Nursery Program began in 2000 with the establishment of school-based nurseries at six schools located within the coastal zone in Louisiana. There are currently 35 schools participating in the program in fifteen parishes (2008-9). These student-managed school plant nurseries are capable of producing native wetland plants for use in habitat restoration plantings. Students managing these nurseries oversee the entire growth cycle of the plants, from seed collection to the planting of the seedlings in the restoration programs. Between 2000 and 2009, more than 3,500 students have planted over 29,000 plants on 90 restoration trips. Initial funding for these nurseries was derived from three primary sources: Louisiana Sea Grant College Program, the Barataria-Terrebonne National Estuary Program and the Coalition to Restore Coastal Louisiana. Current funding is from the LA Sea Grant College Program, the LA Department of Natural Resources, the Coalition to Restore Coastal Louisiana, and the NOAA Bay-Watershed Education and Training Grant Program.

Louisiana's coastal marshes and estuarine basins are under assault - mostly from wind and wave action, storms, altered hydrology and sediment replenishment regimes, and the natural process of subsidence. The program goal and objectives of the *Coastal Roots Program* support the goals of Coast 2050: Toward a Sustainable Coastal Louisiana, which are to create and sustain marsh habitats, to maintain habitat diversity, and to maintain the exchange of energy and organisms within our coastal environments. Vegetative planting is listed among the nine 'coast wide common strategies' delineated in Coast 2050. The concept of ecological stewardship is integral to the Coast 2050 goals and to the goals of the *Coastal Roots Program*. The *Coastal Roots Program* enables students to become well-informed about the issues of coastal stewardship and sustainability and to actively participate in coastal habitat restoration.



Students in different educational settings participate in this program. For instance, most school nurseries are under the direction of biology, Earth, or environmental science teachers, while in a few schools the agricultural science teachers are the main point of contact. In others, environmental science clubs organize the participation.

# LSU COASTAL ROOTS PROGRAM ORGANIZATION

*Integration into school curriculum.* The *Coastal Roots Program* is integrated into the curriculum in several ways. It is an ideal vehicle to learn about science concepts related to plant growth (life science), constructive and destructive forces at work on the Earth's surface (Earth science), ecology and ecosystems of the coastal plant (life & environmental science). Horticultural and earth science lessons are available that relate to the program. Other connections exist with mathematics and geography.

*Program timeline.* The *Coastal Roots Program* is an ongoing long-term program that is managed by teachers and students at participating schools with the assistance of program staff and technical advisors. The continuing nature of this program is of particular importance because some seedlings, particularly tree seedlings, will need to be maintained for at least a year before they reach suitable size for planting.



Students from St. Martin Episcopal (Metairie) carrying a tray of their cypress seedlings to plant. October 2007. Photo by Pam Blanchard.

Native plants selected for the *Coastal Roots Program* are chosen based on their potential use in Louisiana coastal restoration projects. Plants grown thus far by schools in the program include black mangrove, southern wax myrtle, red mulberry, live oak, water oak, nuttall oak, loblolly pine, longleaf pine, tupelo gum, smooth cordgrass, bitter panicum and southern baldcypress. Seeds are ordered from a commercial seed supplier in Louisiana and are planted by students in the spring. During the first nine months of growth (spring through summer), students keep track of germination rate, growth rates, water and fertilization regimens. During the late fall, students transport their seedlings to their long-term restoration partner site and transplant the seedlings. Students return from their planting trip, clean the now empty reusable plant cells and prepare the nursery for the next seed planting in late winter. The whole cycle begins again.



Pierre Part Elementary Coastal Roots Nursery. October 2006. Photo by Ann Gray.

*Program Equipment.* Schools install a can yard, or nursery area, that is equipped with automatic irrigation equipment. Seeds are planted in reusable bullet cells and grown in trays inside the can yard. Everything is reusable except seeds and soil.

*Seedling Maintenance.* Students, with supervision of the teacher, will monitor the daily irrigation of seedlings and alert *Coastal Roots* staff of any problems that develop. Students apply fertilizer as the seedlings mature.

*Restoration Planting Field Trip.* On the restoration planting trip, students will have occasion to plant the seedlings they have nurtured through the year at a partner restoration site. This trip is scheduled during the late fall and winter months (for tree seedlings) or in the spring (for grasses).

The long-term planting site partner is identified in consultation with school personnel. Final site selection is based on: (1) ease of access by students and student's personal safety during planting, (2) the site's need for the specific plants available for planting from these school nurseries, and (3) proximity to school location due to budget and parish school district constraints. Restoration planting field trips are supervised jointly by the Coastal Roots staff and the cooperating teachers. Chaperones are needed and welcome.

*Continued Program Participation.* It is emphasized to participating schools that *Coastal Roots* is an ongoing program and not a one-year activity. Equipment purchased through grant monies, e.g. planting cells, fiberglass trays, etc., are recycled through several growing seasons.

For further information, contact:

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