

ABBEVILLE RED IRIS—IRIS NELSONII

There are about 200 kinds of irises worldwide. The “Louisiana Irises” consist of a group of 4 closely related species which have been crossed with each other to produce ornamental plants for sale in the nursery trade. The Louisiana irises include zig-zag iris (*Iris brevicaulia*), copper iris (*Iris fulva*), large blue-flag (*Iris giganticaerulea*), and Abbeville red iris (*Iris nelsonii*). Zig-zag, copper and large blue-flag are probably more abundant in Louisiana than in any other state. The Abbeville red iris is only found in Louisiana. There is one additional iris native to Louisiana that is not included in the Louisiana iris group, southern blue-flag (*Iris virginica*), which is distributed throughout eastern North America. If you see a large yellow-flowered iris in Louisiana it may be a yellow-flag (*Iris pseudacorus*), which is native to Eurasia and Africa and is an exotic pest in the United States.

The Abbeville Red Iris: The rarest species of Louisiana iris is *Iris nelsonii*. It was discovered by W.B. MacMillan, and was officially named in 1966 by professor and botanist L.F. Randolph. It was named in honor of horticulturist Ira S. Nelson. **This iris is very special because it is the only plant that is endemic to Louisiana, which means that it does not naturally grow anywhere else.** *Iris nelsonii* is relatively large, growing 4-6 feet tall. The flowers are red or red-purple (sometimes pale yellow). Its natural range is restricted to a single swamp in Vermilion Parish, which is privately owned. It has been introduced to Palmetto Island State Park to make it viewable to the public. For its habitat it prefers cypress-tupelo gum swamps with fluctuating water levels. Randolph reported encountering Abbeville reds in water that was waist-deep and in the shady swamp interior. The hydrology of the swamp has changed over the years possibly due to agricultural use and modification of waterways to improve drainage, resulting in the shallower swamp today. There are some *Iris nelsonii* colonies in the interior of the swamp, but the most robust stands occur in the ditches and along the banks of waterways, possibly because these sites are wetter.

The Birth of a Species: In this part of Louisiana, bottomland hardwood forests, cypress-tupelo swamps and open coastal marshes are very near each other. This close proximity of wetland habitats increases the chances that irises adapted to these different habitats will interbreed and form hybrids. The Abbeville red iris is of hybrid origin. By studying the physical features and genetics of the Abbeville red irises, scientists have discovered that three “parental” iris species were involved in its creation. These species are copper iris and large blue-flag, with a small contribution from zig-zag iris. Copper iris occupies seasonally wet, shady bottomland hardwood forest (*though it can adapt to high sunlight roadside ditches on today’s landscapes*). Large blue-flag grows in marshes and on shorelines and likes a lot of sunlight. *The habitat preference of Abbeville red iris is intermediate between these parents. It possibly gets shade tolerance from copper iris and preference for very wet areas from large blue-flag. By occupying a habitat that is different from the parental species, the Abbeville red iris has become reproductively isolated from them. This isolation prevents “swamping” with parental genes and has allowed the Abbeville red iris to stabilize and persist as a separately evolving lineage.*

Threats to the Abbeville Red Iris: With such a small natural range, *Iris nelsonii* has “all its eggs in one basket”, unlike many other plants that have population in many different places. Therefore the loss or degradation of the swamp could have a severe impact on the species. It appears that the swamp is drier now than it was historically. This change in habitat may affect the extent and abundance of Abbeville red iris. While the Abbeville red iris initially arose through hybridization, isolation from parental species due to differences in habitat allowed the Abbeville reds to persist. Habitat change could cause reproductive barriers between Abbeville reds and parental species to collapse, threatening the integrity of the species. Salt water intrusion caused by hurricanes and magnified by coastal erosion also poses a threat.

Planting Palmetto Island : On October 18th, 2011, Friends of Palmetto Island joined Palmetto Island State Park, Wildlife and Fisheries and Office of State Park’s staff to plant 100 bulbs of native Abbeville Red Iris back within the park for everyone to enjoy. Establishing the Abbeville Red Iris in the park was a cooperative effort through a partnership between LA Office of State Parks and LA Dept. of Wildlife and Fisheries. Wildlife and Fisheries provided the funding and Office of State Parks provided the location. **Friends of Palmetto Island published a colored brochure about the Abbeville Red for Palmetto Island State Park.** Stop by the park's entrance station or nature center to get a copy.