

Phragmites Management and Restoration Combined: Catching Two Birds with One Net

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Michael D. Byer

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Phragmites australis (introduced form) almost-monocultures occupy more total area within Gateway National Recreation Area than any other invasive plant species, in fact more than any other plant species, native or exotic. No data on total acreage occupied is available at present, but it is obviously far greater than what we could hope to eradicate with our limited resources.

Selected sites, however, can be turned into native plant communities appropriate to the soils, hydrology, and other physical environmental conditions of the particular site. With lots of sweat, time, one cooperative agreement, and ample frustration we are accomplishing this in several small areas, all in the "North Forty" of Floyd Bennett Field and in Deadhorse Bay (we also have restoration sites at Great Kills, the Wildlife Refuge, and Fort Tilden/Breezy Point, but none of them in Phrag-dominated areas). Our goal is not to reduce the area covered by Phrag, for even if we increased the area 10-fold or 50-fold, we would not make a significant dent in total Phrag-infested acreage in the park. Rather, we are trying to increase biodiversity within Gateway by creating eventually self-sustaining and self-perpetuating communities of native species, some of which are rare or absent within park boundaries. We try to locate these areas along roads and trails much traveled by visitors.

wonderful American girl and this old geezer. We then planted stock that was mostly a donation from the Victory Nursery on Staten Island. Some areas were cleared by volunteers arranged for by Friends of Gateway and Educators for Gateway. Volunteers arranged for by these groups, as well as summer SCA's and interns, Boy and Girl Scouts, public school students and clients of institutions for the handicapped have also helped over the years with annual clearing, greenhouse propagation, and planting of replacement plants.

The most ambitious restoration effort at Gateway to date was carried out by the New York State DOT, as a mitigation required by the New York State DEC for wetland damage caused by DOT's construction activities. In a 1.5 acre (0.6 ha) area near Return-a-Gift Pond in the North Forty, the top one foot (30 cm) of Phrag-infested soil, containing most of the rhizomes of this grass, was removed by bulldozer and disposed of off-site. Then a fabric, similar to the Weedblocker™6 that we used but thicker and harder, was placed on the new surface and then covered with one foot of "clean" topsoil. A great variety of wetland plants was installed in the new soil, not seedlings but young trees of 2-inch caliper up to 10 feet (3 m) tall, as well as about 18 species of wetland shrubs.

The DOT mitigation has been quite successful. Phragmites has re-invaded mainly by growing in from the edges of the area only; the initial soil removal apparently included most of the Phrag rhizomes or else the remaining ones are too deep to produce new shoots. Although many herbaceous species, native and exotic, seeded in and established in the new soil, the crowns of the installed native plants have coalesced in many places, producing a layer of leaf litter typical of a forest floor. The combination of litter and shade has suppressed most growth of weedy sun-loving herbs.

Future plans include providing signage explaining the nature and purpose of the restoration, the process, and identifying some of the principal species.