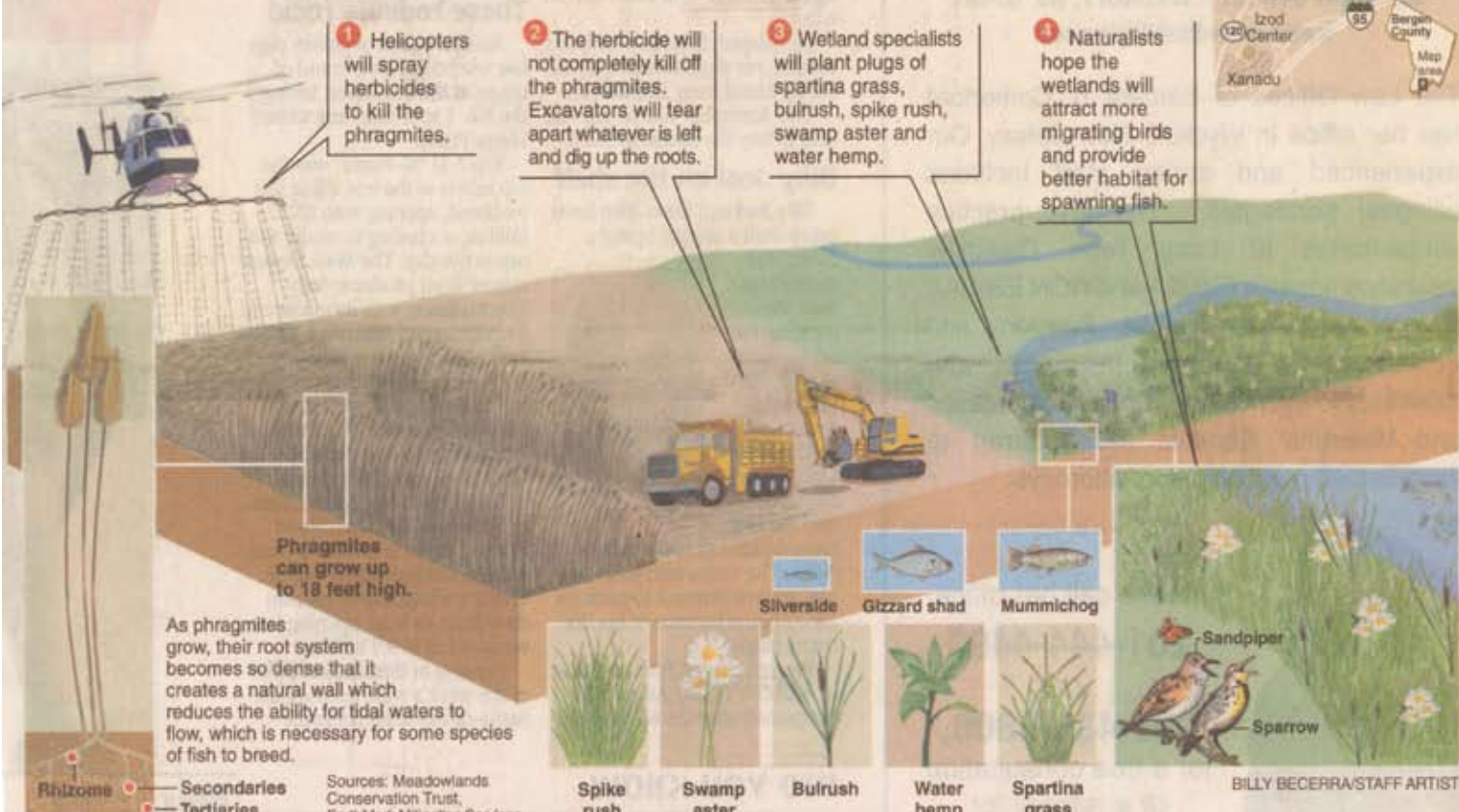


War on reeds

About 250 acres of Hackensack River wetlands in Carlstadt, now overrun by the invasive phragmites, or common reed plant, will be the focus of a project to improve the tidal flow and introduce native species of plants to provide a better habitat for breeding fish and migrating birds. The Richard P. Kane Natural Area will provide North Jersey with a site for kayaking, hiking and birding.



Project to bring new life to Meadowlands site

By JAMES M. O'NEILL
STAFF WRITER

The aerial bombardment will be first, with herbicides sprayed by helicopter. Next, long-necked excavators will tear apart whatever is left. Channels will be dug. Berms will be heaped high.

That's the battle plan to eradicate what some call the kudzu of the Meadowlands — invasive, life-choking reeds — from 250 acres of wetlands.

Once the reeds, known as phragmites or common reeds, are removed, wetlands specialists will plant more than a million plugs of spartina grass, along with bulrush, spike rush, swamp aster and water hemp. They hope it will attract more migrating birds and provide better habitat for spawning fish.

The ambitious project along the Hackensack River in Carlstadt aims to rebuild these wetlands. The goal is to



AMY NEWMAN/STAFF PHOTOGRAPHER

turn an ecologically moribund corner of the Meadowlands into a vibrant habitat offering a place for hiking, birding and kayaking.

"A lot of real science has gone into

the design. It's going to be one of the biggest mitigation projects ever in the Meadowlands," said Bill Sheehan, the Hackensack Riverkeeper and chairman of the Meadowlands Conserva-

tion Trust, which owns the land. "The wetlands will work better as a filter and flood storage area."

The tract, part of the Richard P. Kane Natural Area, lies just northeast of the new Meadowlands football stadium and the Izod Center. This spring the area was covered by a sea of brown and gray phragmites stems rustling in the breeze. The Mudabock Creek, which bisects the tract, ran a muddy orange. In 2005, about 50 acres of the site burned, which killed off some phragmites and allowed native wetlands species to grow. A 2006 report noted that the clam shrimp, a rare

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crustacean not previously reported in New Jersey, lives in the tract.

"To think we have a chance to enhance a square mile of wetlands, and in an area that's a huge migratory bird way, is just incredible," said Kristina Schvejda, executive director of the Meadowlands Conservation Trust. "The property certainly is a treasure."

The trust gained ownership of the land, formerly called the Empire Tract, in 2005. It was protected from development in the deal that allowed the Xanadu retail and entertainment complex to be built.

EarthMark, a North Carolina company, will do the work. Richard K. Mogensen, EarthMark's mid-Atlantic regional director, said the company will pay the trust \$6 million over five years to lease the site and spend up to \$25 million to restore the wetlands. EarthMark expects to make all that money back — and earn a profit — by selling what is known as mitigation credits.

Those credits are a way for developers to offset wetlands harmed by construction elsewhere. They purchase credits and the money is used to preserve or enhance wetlands nearby.

For this project, mitigation bank credits can be used only to offset wetlands lost to transportation projects by the New Jersey Turnpike Authority, the state Department of Transportation, NJ Transit or the Port Authority of New York and New Jersey.

No contamination

The restoration work on the Kane Tract is helped by the fact that unlike other areas of the Meadowlands, it is not known to be contaminated.

But the invasive reeds have wrought their own destruction. The plants likely first took root more than a century ago from Europe. Reeds, common around ports, were used as a packing material, the organic equivalent of Styrofoam peanuts.

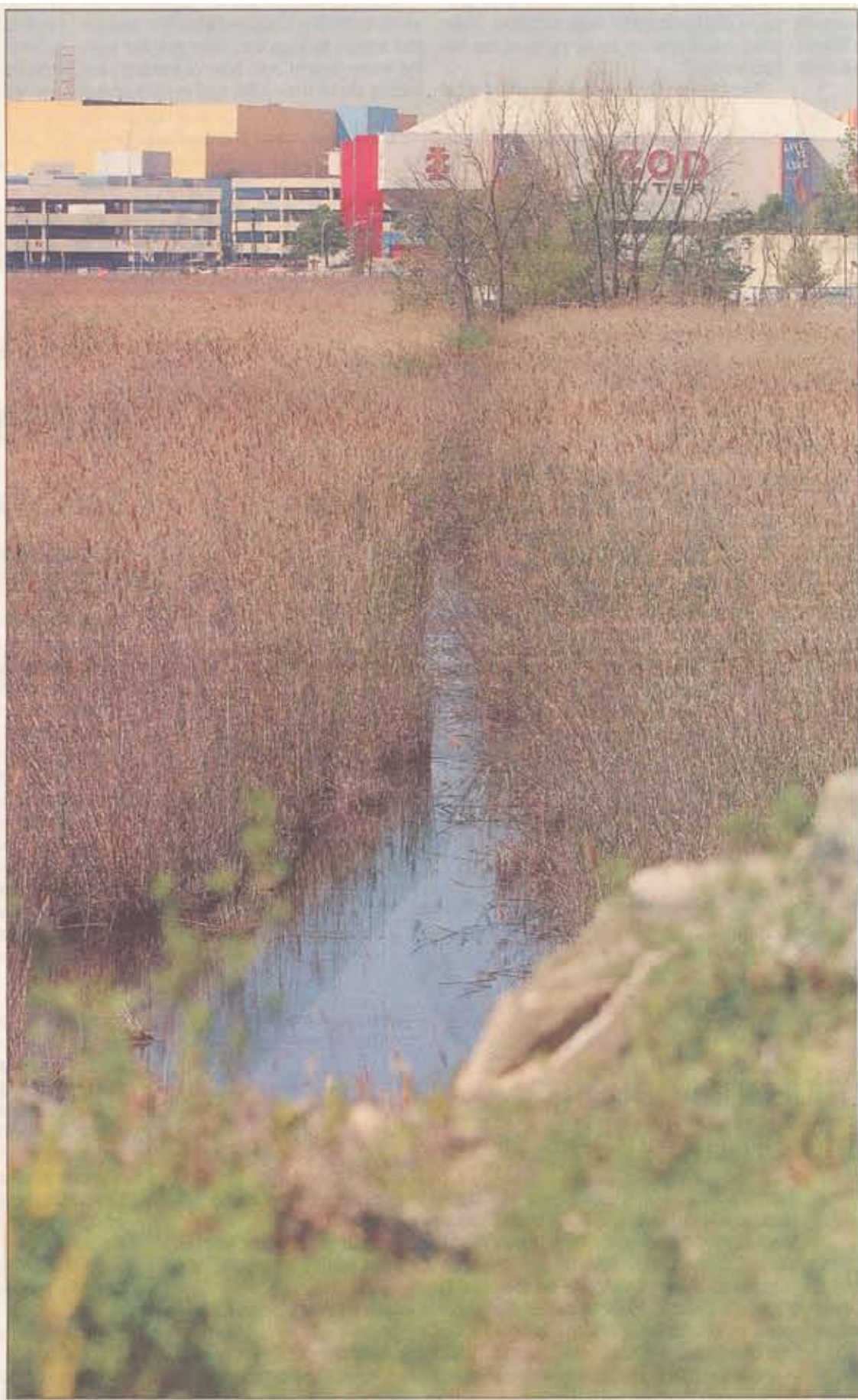
The reeds are destructive because, as they grow, their root systems becomes incredibly dense and create a wall that reduces the ability for tidal waters to flow through a marshland, a process necessary for some species of fish to breed.

"Because it deposits a lot of biomass, phragmites elevates out of the water and there's no tidal inundation, so it's not useful for fish breeding," said Mogensen. "Spartina is shorter and allows for a tidal flush, and it can take up more pollutants, acting as a filter." Spartina grows 4 to 6 feet tall, while phragmites can reach 15 feet.

"Phragmites is even worse than kudzu along the edges of forests," said Bernd Blossley, a Cornell University expert on invasive plants. "We think phragmites is so successful here because of the absence of natural enemies."

Blossley is studying whether European insects that feed on the reeds could be used to attack phragmites in the United States without harming native plants. In the meantime, the wetlands restoration will rely on spraying and digging.

EarthMark's first step will be to spray a herbicide similar to Roundup. Its active ingredient, an



AMY NEWMAN/STAFF PHOTOGRAPHER

The phragmites-threatened portion of the Richard P. Kane Natural Area is located just northeast of Izod Arena and the new Meadowlands football stadium.

acid known as glyphosate, is considered non-toxic or only slightly toxic to fish, birds and other wildlife, and breaks down in days to weeks. The spraying by helicopter will begin this fall.

But the herbicide won't completely kill off the reeds because they reproduce by sending out horizontal stems, or rhizomes, along the soil; these develop cloned shoots of the original plant. So early in 2010, excavators will dig up the roots.

Improved tidal flow

Another goal of the project is to improve the tidal flow through the site, which was blocked decades ago when Bergen County built dikes and berms in an unsuccessful bid to control mosquitoes. EarthMark will remove the old berms and dig new channels to help water flow, essential for native vegetation to thrive.

Mudabock Creek will also be realigned so it will no longer need a tide gate. A new 8-foot-high berm along the western perimeter of the property will prevent flood-

ing in South Hackensack's industrial area.

Another berm will be created in the tract's northern portion to create a freshwater forest with river birch, sycamore, aspen, cottonwood and willow trees. The Meadowlands used to be a freshwater system, but after the Oradell Dam was constructed in 1923, freshwater flow was restricted down the Hackensack River, and salt water washed up, killing freshwater plant species and creating the environment for phragmites to thrive.

One complication is a natural gas pipeline that runs across the property. The pipeline will be buried deeper in several spots so the new channels, each 4 feet deep and 50 feet wide, can flow above.

Once the tract is free of phragmites next spring, EarthMark will plant up to 1.3 million plugs of spartina.

The plants are growing right now in at Pinelands Nursery in Columbus, Burlington County.

Last fall, the nursery collected seeds from spartina growing in Jer-

sey City, Bayonne and the Meadowlands. The seeds are placed in buckets of salt water and stored in coolers for three to four months. Then the seeds are mixed with soil and put into plugs about the size of a typical single plant at a garden store.

The plugs are placed in thousands of flats in greenhouses and set into frames, where they sit in salt water to acclimate to their future home.

"It's a very big order," said Don Knezick, owner of the nursery.

EarthMark's Mogensen knows the site well — he helped work on about 200 acres just east of the tract for Williams, the natural gas company. "It's fascinating to build an ecosystem back to what Mother Nature intended," he said.

"The Meadowlands was set up to be a dump and it became a forgotten ecosystem," Mogensen said. "But there are people who recognized its potential, and are doing some very nice work helping it to recover."

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