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Mangrove replanting project a bust

Only 9 percent of seedlings placed around Naples Bay since 2000 have survived

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A pilot project to replant mangroves along Naples Bay has not had much more success than Mother Nature.

Crews from the Conservancy of Southwest Florida planted 114 red and white mangrove seedlings at various spots around Naples Bay in two planting cycles between 2000 and 2002.

Of those, only 95 red mangrove seedlings have survived, or about 9 percent, according to monitoring results reported in a December 2005 report to the U.S. Fish and Wildlife Service. The fish and wildlife service awarded the Conservancy a \$25,000 grant in 2000 to conduct the pilot project.

The results illustrate the high hurdles scientists will have to jump to regrow mangroves as part of a larger effort to restore Naples Bay.

It will take more than a green thumb. Conservancy researchers have estimated that Naples Bay has lost some 70 percent of its mangrove forest to development. Mangrove loss has dealt a significant blow to the bay's ecosystem.

Fish find meals and hide from predators

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among mangrove roots. The roots keep water clean by holding sediment. Migratory birds roost in mangrove branches. When mangrove leaves fall and rot, they become food for organisms at the base of the food chain.

A healthy mangrove forest can produce millions of floating seeds each year and a small percentage of them find a place where they can grow on their own, said wetlands scientist and mangrove expert Roy "Robin" Lewis III, president of Lewis Environmental Services in Salt Springs, Fla.

If mangroves have not moved into an area, the problem could be with the site, not necessarily the planter, he said.

On Naples Bay, water along most seawalls is too deep for mangroves to grow, and riprap is placed at too steep an angle in many places.

The solution: Either don't plant mangroves where they won't grow or find ways to rewrap the shoreline, Lewis said.

"It doesn't mean you can't correct it," Lewis said.

Restoration also will depend on quelling homeowners' fears that water views and mangroves are not mutually exclusive.

Homeowners volunteered to allow mangroves to be planted on the edge of their lots as part of the pilot project.

Besides inhospitable shoreline structure, boat wakes contaminating the shoreline also contributed to mangrove seedlings' failure, according to the Conservancy report.

An unexpected freeze in late December 2000 took a toll on the first planting cycle, according

to the report.

Vandalism or honest mistakes by ill-informed gardeners were other problems, according to the report. The report theorizes that misguided shoreline fishermen pulled out seedlings at Bayview Park.

"It's not an easy thing," said Brad Kleck, a fish and wildlife service biologist in the agency's project planning division in Vero Beach.

"You just don't walk up and down the shoreline, plant propagules at the mean high water line, walk away and a couple years later have a nice stand of mangroves."

Although most of the seedlings didn't make it, crews did what they could to give them a leg up when they were planted.

Workers collected about 2,750 mangrove seeds and propagules and cultivated them in a nursery the Conservancy set up.

About 18 percent of the white mangrove seeds and 72 percent of the red mangrove propagules germinated and grew roots for replanting, according to the report.

Monitoring after the planting showed a survival rate of 19 percent for the first cycle and 71 percent in the second cycle, according to the report.

The report attributes the difference to more mature seedlings planted in the second cycle.

In both planting cycles, some of the mangroves were plant-

ed inside plastic tubes and the rest were planted directly into riprap.

In the second planting cycle, the root systems of half of the mangroves seedlings were wrapped in cheesecloth filled with soil and then wedged into riprap, packed with more soil and supported with bamboo stakes.

Unwrapped seedlings had a survival rate of 69 percent compared with an 81 percent survival rate of wrapped seedlings, according to the report.

Seedlings planted in riprap had a 56 percent survival rate compared with 50 percent surviving in plastic tubes along seawalls, according to the report.

By the end of the monitoring period in November 2005, though, the overall survival rate had dropped to 9 percent.

Conservancy biologist Kathy Worley said the results should not discourage future plantings, but the problems that kept mangroves from growing should be fixed first.

"We're not saying it can't be done; it can," she said.

Conservancy of Southwest Florida biologist Kathy Worley said the results should not discourage future plantings, but the problems that kept mangroves from growing should be fixed first.

Trouble with mangroves

Less than 10 percent of the mangrove seedlings the Conservancy of Southwest Florida planted along Naples Bay have survived, according to a Conservancy report. The report cites problems with vandalism, water depths and boat wakes. Some 70 percent of the bay's original mangroves have been destroyed by development.

