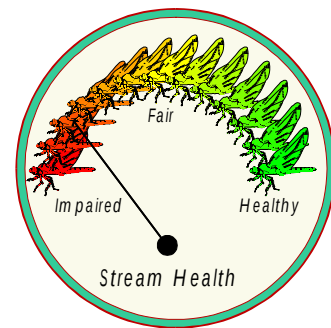


EcoSummary

BioRecon Report



Crane Strand upstream of C.R. 436, Orange Co. October 4, 1995 & March 27, 1996

BioReconnaissance (BioRecon): A rapid, cost effective screening mechanism for identification of biological impairment.

Purpose

This site was chosen for test assessment during development of the BioRecon methodology because of suspected impacts caused by stormwater runoff entering the system, stream channelization, and riparian zone alteration.



Basin Characteristics

Crane Strand historically flowed through a wetland system which existed in the area where the Interlachen golf course is now located. Prior to the mid-1950's, the stream was converted into a canal used to drain adjacent wetlands and convey stormwater runoff downstream to the Little Econlockhatchee River. During the 1970's, effluents from the Tanglewood and Winter Park Estates wastewater treatment plants made up a considerable portion of the flow of Crane Strand, and contributed heavily to impacts to the stream. Although these WWTP's no longer have outfalls into Crane Strand, non-point source pollution enters the stream via runoff from surrounding developments, such as golf courses, homes, strip malls, parking lots, and roads. During rainfall events, water levels rise rapidly, potentially sending nutrient- and bacteria-laden "slugs" of water into Crane Strand, and eventually into the Little Econlockhatchee River.

Results

BioRecon assessment results indicate that Crane Strand is impaired. October 1995 sampling yielded 20 macroinvertebrate species, marginally passing the threshold value of 18. Out of a target of 10, only five points were scored for good water quality ("Florida Index") species. The threshold value for the number of mayfly, stonefly, and caddisfly larvae species ("EPT") also was not reached, with only two mayfly species present. In March 1996, none of the three criteria were achieved. Only 14 species were collected, with a Florida Index score of four, and a EPT value of (the same) two. In both

cases, the aquatic invertebrate community was dominated by pollution-tolerant animals. Due to sediment deposition, channelization, and poor quality bank vegetation, Crane Strand provides little productive habitat for aquatic organisms. Water quality measurements were within normal ranges, with the exception of dissolved oxygen, which was below state standards in October 1995.

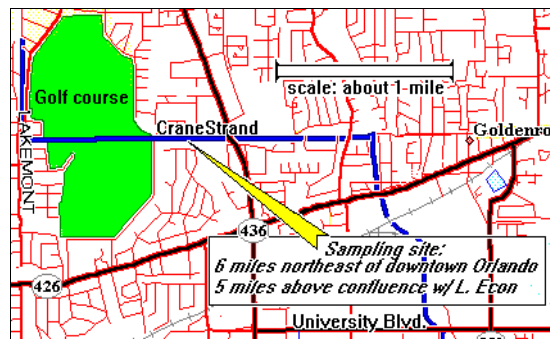
Significance

The large volume of stormwater runoff entering Crane Strand eventually makes its way into the Little Econlockhatchee River. The imbalanced aquatic invertebrate community present in Crane Strand attests to the negative effects brought on by run-off, poor habitat, and sediment deposition. Such factors impact not only Crane Strand, but also threaten the Econlockhatchee River system downstream, potentially depressing its ecological integrity, and reducing its re-creational, commercial, and aesthetic value.

Suggestions

Stormwater management practices which reduce the amount of untreated stormwater entering Crane Strand could help

alleviate part of the problem caused by nonpoint source runoff. From an ecological stand-point, restoration of the natural wetland would be ideal. In the absence of such measures, however, good stormwater management and streamside land use practices would help to reduce the amount of contaminated stormwater entering the Econlockhatchee system via Crane Strand.



For more information, contact Dana Denson, FDEP Central District, 3319 Maguire Blvd, Suite 232, Orlando, FL 32803 (407)893-3313 or SunCom 325-3313, e-mail: denson_d@orl1.dep.state.fl.us

Published by the Florida Department of Environmental Protection, Tallahassee, FL, 1997.