A site map can be viewed by clicking on the report site name.

# EcoSummary

## Buck Lake in Ocala National Forest

**July 8, 2002**

*VERY GOOD*

*LAKE BIOASSESSMENTS*

Lake Condition Index (LCI): A developmental biological assessment tool used by FDEP biologist to indicate ecosystem health and identify impairment in Florida lakes

**For samples collected before June 8, 2004**
All field and laboratory methods followed FDEP Standard Operating Procedures and met FDEP quality assurance/quality control standards.
**For samples collected on or after June 8, 2004**
All field and laboratory methods followed FDEP Standard Operating Procedures (SOPs) and met DEP quality assurance/quality control standards.

## Purpose



The purpose of this bioassessment was to monitor the health of Buck Lake and to provide data useable in the ongoing refinement of FDEP's bioassessment tools. This report focuses on the two most recent sampling events: October 25, 1999 and July 8, 2002. Two LCIs were performed on the latter date to provide a duplicate sample for quality assurance purposes.

## Watershed Characteristics

The 56-acre lake lies within sand pine scrub area in the southern half of Ocala National Forest just east of SR 19, and just south of Lake Sellers. The only development on the lake is a National Forest camping area and boat ramp located on the north shore. Otherwise, there is very little development within the lakeshed, there being a few low-density residences about 0.75 miles away. The rest of the land is either natural, or is sustainably-managed pine timberland. Buck Lake is a part of the 45 square mile Ninemile Creek drainage basin. Ninemile Creek is a tributary of Alexander Springs Creek.

## Results

Buck Lake received an excellent rating on all LCI samples. In 1999, there were 19 different

macroinvertebrate taxa collected. The 2002 samples averaged 25 taxa, including the burrowing mayfly *Hexagenia*, which is a sensitive water quality indicator found in central Florida lakes. Because *Hexagenia* tends to become locally extinct with perturbation of its lake habitat, its presence is a strong indication of the health of a lake. Hulbert Index values for Buck Lake were 12 in 1999 and 20 in 2002. (The Hulbert Index is based on the number of pollution-intolerant macroinvertebrate species present. Lakes with values equal to or greater than 20 are considered "unaltered".) Shannon-Weiner diversity values were 3.29 in 1999 and averaged 3.69 in 2002. (Values above 3 are generally considered good.) The most abundant macroinvertebrates collected in 1999 were the amphipod *Hyalella azteca* and larval biting gnats of the family Ceratopogonidae, better known to most people as "no-see-ums". In 2002, the most abundant macroinvertebrates were the larval chironomid midge (a.k.a. "bloodworm") *Polypedilum halterale* group and oligochaete worms of the family Tubificidae.

Water chemistry results were good on both occasions. All nutrients were present at very low levels, many below detection limits. Coliform bacteria levels were very low. *In situ* physicochemical measurements were all good, as well. The Secchi depth (a measure of water clarity) was nearly identical on the two dates: 2.3 m in 1999 and 2.4 m in 2002.

Results of the lake habitat assessment performed in July 2002 were good. Buck Lake received a score of 119 out of a possible 140 points, or 85%.

## Significance

These results show that Buck Lake is currently in good ecological health. The diverse and robust benthic macroinvertebrate community, the good water chemistry results, and the good habitat assessment all illustrate the healthy condition of this water body.

## Suggestions

Since Buck Lake is within the Ocala National Forest, its health should be safeguarded for the foreseeable future. The lake should continue to be sampled to make sure that it remains healthy.

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