Lake Jackson Lead Shot Assessment
March 11, 2004

DEP's Environmental Resource Permitting Program requested staff from the DEP Bureau of Laboratories to conduct an assessment of potential effects associated with unidentified individuals discharging lead shot into the littoral zone of Lake Jackson, Leon County, at the Miller Road boat landing.

On March 11, 2004, Russel Frydenborg and Tom Frick visited the site and observed several hundred shotgun shells on the south side of the boat ramp at the edge of the water. Plastic inserts were seen in the water up to 10 m from the shore. The investigators sampled the sediments with a stainless steel petite Ponar dredge at three stations located in an approximately 50 m radius from the highest concentration of shells. The three stations were about 25 m apart and in 1 meter deep water. A background site, located farther away from the shells on the north side of the boat ramp, was sampled for the purpose of testing the leaching potential of the sediment when a single lead shot was purposely added in the laboratory. Sampling followed DEP SOP FS 4000. The sediment was transferred to wide-mouth glass containers via a stainless steel scoop, placed on ice, and transported the DEP Chemistry Laboratory, where the Synthetic Precipitation Leaching Procedure (SPLP, EPA 1312) test was performed. The SPLP procedure is designed to determine the mobility of environmental contaminants (in this case, lead) in soils, etc. The samples are agitated and exposed to a weak acid solution, which mimics the region's environmental condition. The resulting leachate is then analyzed to determine the potential contamination from the sediment.

Vascular plants observed in the vicinity of the sampling sites included *Alternanthera philoxeroides, Bacopa carolina, Brasenia schreberi, Eleocharis baldwinii, Juncus effusus, Ludwigia repens, Luziola flutians, Myriophyllum heterophyllum, Nelumbo lutea, Nymphaea odorata, Panicum hemitomon, Pontederia cordata,* and *Scirpus* sp.

Lake habitat assessment scores were as follows:

Lake Habitat Component	Score
Secchi depth	10
Vegetation Quality	18
Stormwater Inputs	8
Bottom Substrate Quality	18

Lakeside Adverse Human Alterations	15
Upland Buffer Zone	14
Adverse Watershed Land Use	14
Total Score	97

Synthetic Precipitation Leaching Potential sediment lead results were as follows:

Location/Sample	Lead (ug/L)
Station 1	12 U
Station 2	12 U
Station 3	12 U
"Lead Addition" Sample	68 AJ

U- Not detected, number shown is minimum detection limit
A- Result is the average of two sub-samples
J- Estimated value

Conclusions

Based on the vegetation and lake habitat score, this portion of Lake Jackson appeared reasonably healthy. No lead shot was found in any of the three samples collected in the vicinity of the highest concentration of shotgun shells, therefore, lead was undetected in those samples. Based on the number of shells observed however, there are areas in the lake where one may expect to find several lead shot per square meter of lake bottom.

The "lead addition" sample was divided into two aliquots, and a single lead shot pellet was added to each aliquot. The average amount of lead leached during these two SPLP tests was 68 ug/L. This exceeds the 15 ug/L Maximum Concentration Level for lead as specified in the Drinking Water Quality Standards (Rule 62-550 FAC). These results suggest that discharging lead shot into Lake Jackson, which is directly connected to the Floridan Aquifer, represents a potential source of lead contamination to Tallahassee's drinking water supply. For these reasons, the practice of discharging lead shot into the State's waters should be discouraged.