

Farm 13 (Indian River County) Florida LAKEWATCH Water Chemistry Summary

Location: Latitude 27°47'20", Longitude 80°43'16"

Period of record: 9 sampling dates; January 30, 2001 to December 11, 2001

Lake Region (Griffith et al. 1997): Eastern Flatlands (75-10)

Geologic formation (Brooks 1981a):

The geology is dominated clastic and shell deposits of the Fort Thompson Group Formation

Physiographic region (Brooks 1981b):

The lake lies in the Upper St Johns Karst division of the Eastern Flatwoods District

Supplemental water chemistry data

Data reported are means from 1 sampling date:

pH	8.0	Total alkalinity (mg/L as CaCO ₃)	124.0
Conductance (µS/cm @ 25 °C)	925	Color (Pt-Co units)	66
Chloride (mg/L)	175.0		

Periodic water chemistry data

Numbers reported below are the minimum, average, and maximum value for the 2 sampling dates:

	<u>Minimum</u>	<u>Average</u>	<u>Maximum</u>
Long-term color concentrations (Pt-Co units)	71	114	156

Long-term Florida LAKEWATCH Data

Numbers reported below are the minimum, average and maximum value for the 9 months sampled:

	<u>Minimum</u>	<u>Average</u>	<u>Maximum</u>
Long-term total phosphorus concentrations (µg/L)	38	115	217
Long-term total nitrogen concentrations (µg/L)	1437	1682	1893
Long-term total chlorophyll concentrations (µg/L)	8.3	24.7	47.0
Long-term Secchi depth (ft)	2.3	3.8	5.0

2001 Florida LAKEWATCH Data

Numbers reported below are monthly averages calculated from 3 stations for total phosphorus (TP, µg/L), total nitrogen (TN, µg/L), chlorophyll (CHL, µg/L) and Secchi depth (SECCHI, ft) during 2001:

<u>Date</u>	<u>TP (µg/L)</u>	<u>TN (µg/L)</u>	<u>CHL (µg/L)</u>	<u>SECCHI (ft)</u>
Jan-30	49	1893	38.7	2.3
Apr-04	40	1653	17.3	5.0
May-08	41	1847	11.7	3.5
Jul-03	38	1697	9.3	4.2
Aug-06	184	1837	42.3	3.0
Sep-05	109	1437	47.0	3.9
Oct-05	191	1660	18.3	3.5
Nov-08	168	1497	8.3	4.5
Dec-11	217	1620	29.0	4.0
2001 Average	115	1682	24.7	3.8

Farm 13 (Indian River County)
Florida LAKEWATCH Bacteria Summary

The following table lists bacteria concentrations found in Farm 13 (Indian River County). These data are part of a statewide survey that Florida LAKEWATCH is conducting to determine patterns in the abundance of total coliforms and fecal coliforms among Florida water bodies. This is a one-time sample and can be used to describe the bacteria concentrations for that day and not throughout a year. It is important to remember that results could differ over the course of one year or several years based on varying environmental factors such as changes in water temperature, rainfall, aquatic plant abundance, algae blooms and others.

July 11, 2001

Lake	County	Station	Station Location	Total Coliforms (MPN)	Fecal Coliforms (MPN)
Farm 13	Indian River	1	Off Vegetation	3100	100
Farm 13	Indian River	2	Off Vegetation	1700	0
Farm 13	Indian River	3	Off Vegetation	1600	0
Farm 13	Indian River	4	Off Vegetation	900	0
Farm 13	Indian River	5	Off Vegetation	1700	100
Farm 13	Indian River	6	Off Vegetation	2100	0
Farm 13	Indian River	7	Off Vegetation	2900	100
Farm 13	Indian River	8	Off Vegetation	3400	0
Farm 13	Indian River	9	Off Vegetation	1500	0

The Florida Administrative Code (FAC), Section 62-302.530 defines criteria for both total and fecal coliform bacteria for Class III waters. The FAC states that total coliform bacteria shall not exceed a count or Most Probable Number (MPN) of 1,000 bacteria per 100 milliliters of water in 20% or more of the samples examined during any month, nor exceed a MPN of 2,400 at any individual station. The FAC also states that fecal coliform bacteria shall not exceed a MPN of 400 in 10% or more of the samples, nor exceed a MPN of 800 at any individual station.

Total coliform bacteria counts for Farm 13 on July 11, 2001 ranged from 900 to 3400 MPN. Total coliform bacteria exceeded 1,000 MPN in 89% of the samples. Total coliform bacteria did exceed 2,400 at three stations. Total coliform bacteria were not within the acceptable range as defined by the Florida Administrative Code (FAC), Section 62-302.530.

Fecal coliform bacteria counts for Farm 13 on July 11, 2001 ranged from 0 to 100 MPN. Fecal coliform bacteria exceeded 400 MPN in 0% of the samples. Fecal coliform bacteria did not exceed 800 at any station. Fecal coliform bacteria were within the acceptable range as defined by the Florida Administrative Code (FAC), Section 62-302.530.

Farm 13 (Indian River County)
Florida LAKEWATCH Aquatic Plant Summary

Aquatic plant data collected on July 10, 2001

Percent area covered with aquatic vegetation (PAC, %)	.
Percent of lake's volume filled with vegetation (PVI, %)	.
Average emergent plant biomass (kg wet wt/m ²)	5.4
Average floating-leaved plant biomass (kg wet wt/m ²)	4.3
Average submersed plant biomass (kg wet wt/m ²)	12.3
Average width of emergent and floating-leaved zone (ft)	29.9
Average lake depth (m)	.

Frequency that plant species occur in 20 evenly spaced transects around the lake.

<u>Common Name</u>	<u>Plant Species</u>	<u>Frequency (%)</u>
southern water-hemp	<i>Amaranthus australis</i>	100
flat-sedge	<i>Cyperus odoratus</i>	95
hydrilla	<i>Hydrilla verticillata</i>	90
smartweed	<i>Polygonum densiflorum</i>	75
floating water-hyacinth	<i>Eichhornia crassipes</i>	55
Walter's-millet	<i>Echinochloa walteri</i>	55
cat-tail	<i>Typha spp.</i>	45
coontail	<i>Ceratophyllum demersum</i>	45
willow	<i>Salix spp.</i>	35
silk reed	<i>Negraudia regnaudiana</i>	30
common duckweed	<i>Lemna minor</i>	20
water-pennywort	<i>Hydrocotyle umbellata</i>	15
green algae	<i>Chlorophyta</i>	15
water-lettuce	<i>Pistia stratiotes</i>	10
salt-bush	<i>Baccharis spp.</i>	10
wax myrtle	<i>Myrica cerifera</i>	10
water primrose	<i>Ludwigia octovalvis</i>	10
torpedograss	<i>Panicum repens</i>	10
common salvinia	<i>Salvinia rotundifolia</i>	5
alligator-weed	<i>Alternanthera philoxeroides</i>	5
southern naiad	<i>Najas guadalupensis</i>	5

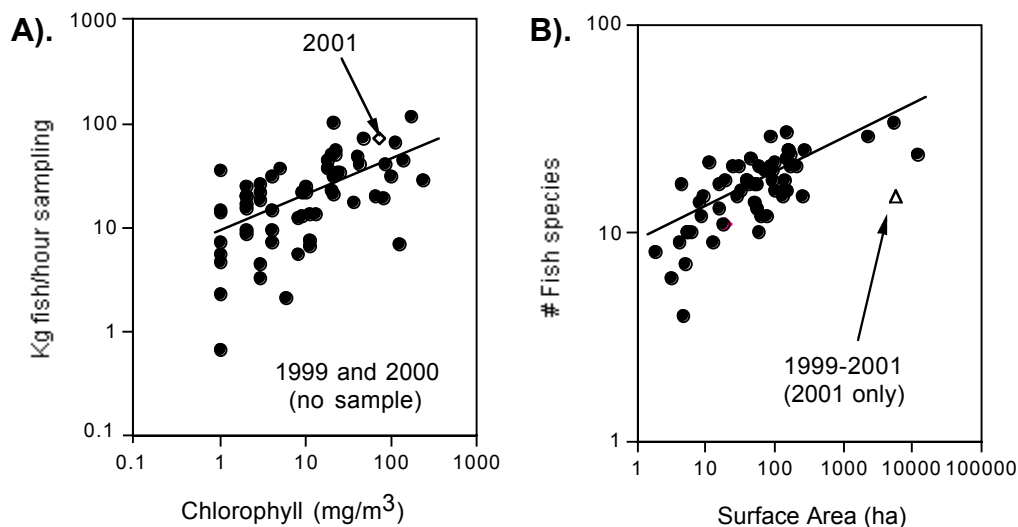
Stick Marsh/ Farm 13 (Indian River County)

2001 LAKEWATCH Electrofishing Data

Species [†]	#/hr	kg/hr [‡]	Canfield and Hoyer (1992) Ranges		
			min weight (kg/hr)	mean weight (kg/hr)	max weight (kg/hr)
Black crappie	2	0.398	0.008	0.667	2.866
Blue catfish	2	1.286	.	.	.
Blue tilapia	1	1.327	0.611	2.635	6.963
Bluegill	223	7.431	0.039	4.966	44.702
Bowfin	2	3.494	0.746	6.049	22.497
Chain pickerel	4	1.157	0.042	2.181	5.706
Florida gar	10	8.493	0.08	5.393	32.858
Gizzard shad	38	15.721	0.019	1.099	3.95
Golden shiner	24	0.505	0.004	0.625	6.504
Lake chubsucker	15	6.306	0.03	4.234	16.19
Largemouth bass	95	23.326	0.112	9.084	32.667
Redear sunfish	77	3.041	0.037	2.615	18.31
Seminole killifish	17	0.425	0.002	0.414	2.234
Threadfin shad	5	0.070	0.002	0.339	1.087
Warmouth	1	0.049	0	0.151	1.196
Total	516	73.029			

[†] Total # of species = 15.

[‡] Weights calculated using regressions from Hoyer and Canfield 1994 and from Bill Schaeffer, Florida Fish and Wildlife Conservation Commission (personal communication).



A) Catch per unit of effort (kg of fish / hour of sampling) versus total chlorophyll (mg/m³) for 60 Florida lakes sampled by Canfield and Hoyer (1992) (●) and Stick Marsh/Farm 13 Reservoir (Indian River County) 1999 (○) and 2000 (⊕) and 2001 electrofishing sampling (◇). B) Number of fish species collected versus surface area of lake for 60 Florida lakes sampled by Canfield and Hoyer (1992) (●), and cumulative Stick Marsh/Farm 13 Reservoir(1999-2001) (Δ) electrofishing sampling. The lines represent linear regressions for log values of the 60 Florida lakes.

Farm 13 (Indian River County)

Florida LAKEWATCH Largemouth Bass Mercury Summary

The following table lists mercury concentrations found in largemouth bass collected from Farm 13 (Indian River County). These data were collected in cooperation with Florida Fish and Wildlife Conservation Commission (FFWCC) to evaluate mercury concentrations in largemouth bass for water bodies that have several years of water chemistry data. These data can be used to estimate concentrations in the largemouth bass collected on an individual date and not necessarily all fish in the water body. It is important to remember results could differ over the course of one year or several years based on varying environmental factors.

April 3, 1992

Lake	County	Total Length (mmTL)	Total Weight (g)	Sex*	Age	Mercury Concentration (ppm)
Farm 13	Indian River	329	500	F	2	0.03
Farm 13	Indian River	170	59	F	1	0.05
Farm 13	Indian River	170	59	.	.	0.05
Farm 13	Indian River	345	588	M	2	0.07
Farm 13	Indian River	165	53	F	1	0.08
Farm 13	Indian River	335	548	M	2	0.08
Farm 13	Indian River	432	1285	M	4	0.20
Farm 13	Indian River	454	1543	M	4	0.20
Farm 13	Indian River	442	1424	M	4	0.21
Farm 13	Indian River	541	3037	F	4	0.22
Farm 13	Indian River	516	2201	M	11	0.47
Farm 13	Indian River	591	4692	F	4	0.35
Farm 13	Indian River	572	4873	F	4	0.33

The Florida Department of Health (FDOH) has established guidelines for three consumptive use advisories that are issued by FDOH. If the average mercury concentration of harvested fish is below 0.5 ppm, then an *Unrestricted Consumption of Fish Advisory* is issued and there is no limit set to the amount of fish that you should eat in a given amount of time. If the average mercury concentration is between 0.5 ppm to 1.5 ppm, then a *Limited Consumption of Fish Advisory* is issued. A *Limited Consumption of Fish Advisory* means that fish "should not be eaten more than once a week by adults. If you are pregnant, a nursing mother, a woman who intends to have children, or a child under 15 years old, you should not eat those fish more than once a month (One portion equals 8 ounces or one-half pound of fish)". If the average mercury concentration is above 1.5 ppm, then a *No Consumption of Fish Advisory* is issued. A *No Consumption of Fish Advisory* means that no fish should be eaten from the lake sampled.

This data was provided to the FDOH by the FFWCC. To find out if an advisory was issued on this water body, please contact either:

Florida Fish and Wildlife Conservation Commission
 Ted Lange
 601 West Woodward Avenue
 Eustis, FL 32726
 (352) 742-6438
tlange@mail.state.fl.us

Bureau of Environmental Epidemiology
 Dr. Joe Sekerke
 4052 Bald Cypress Way, Bin A08
 Tallahassee, FL 32399-1712
 850-245-4248
joe.sekerke@doh.state.fl.us

* M represents male, F represents female, U represents unidentified; a dot "." represents data not available.

Farm 13 (Indian River County)

Florida LAKEWATCH Largemouth Bass Mercury Summary

The following table lists mercury concentrations found in largemouth bass collected from Farm 13 (Indian River County). These data were collected in cooperation with Florida Fish and Wildlife Conservation Commission (FFWCC) to evaluate mercury concentrations in largemouth bass for water bodies that have several years of water chemistry data. These data can be used to estimate concentrations in the largemouth bass collected on an individual date and not necessarily all fish in the water body. It is important to remember results could differ over the course of one year or several years based on varying environmental factors.

July 2, 2001

Lake	County	Total Length (mmTL)	Total Weight (g)	Sex*	Age	Mercury Concentration (ppm)
Farm 13	Indian River	403	695	F	4	0.29
Farm 13	Indian River	507	1528	F	5	0.41
Farm 13	Indian River	363	575	M	4	0.48
Farm 13	Indian River	229	163	M	1	0.09
Farm 13	Indian River	222	151	M	1	0.12
Farm 13	Indian River	456	1192	F	4	0.29
Farm 13	Indian River	195	86	F	1	0.13
Farm 13	Indian River	502	1551	F	5	0.58
Farm 13	Indian River	311	461	M	4	0.34
Farm 13	Indian River	367	602	F	3	0.22
Farm 13	Indian River	404	634	F	4	0.33
Farm 13	Indian River	352	499	M	4	0.31
Farm 13	Indian River	350	388	M	4	0.40
Farm 13	Indian River	378	637	M	5	0.43

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Stick Marsh (Indian River County) Florida LAKEWATCH Water Chemistry Summary

Location: Latitude 27°47'57", Longitude 80°42'33"

Period of record: 9 sampling dates; January 30, 2001 to December 11, 2001

Lake Region (Griffith et al. 1997): Eastern Flatlands (75-10)

Geologic formation (Brooks 1981a):

The geology is dominated clastic and shell deposits of the Fort Thompson Group Formation

Physiographic region (Brooks 1981b):

The lake lies in the Upper St Johns Karst division of the Eastern Flatwoods District

Supplemental water chemistry data

Data reported are means from 1 sampling date:

pH	8.0	Total alkalinity (mg/L as CaCO ₃)	129.0
Conductance (µS/cm @ 25 °C)	896	Color (Pt-Co units)	68
Chloride (mg/L)	182.5		

Periodic water chemistry data

Numbers reported below are the minimum, average, and maximum value for the 3 sampling dates:

	<u>Minimum</u>	<u>Average</u>	<u>Maximum</u>
Long-term color concentrations (Pt-Co units)	74	86	108

Long-term Florida LAKEWATCH Data

Numbers reported below are the minimum, average and maximum value for the 9 months sampled:

	<u>Minimum</u>	<u>Average</u>	<u>Maximum</u>
Long-term total phosphorus concentrations (µg/L)	57	93	139
Long-term total nitrogen concentrations (µg/L)	1370	1672	2473
Long-term total chlorophyll concentrations (µg/L)	7.3	28.3	44.0
Long-term Secchi depth (ft)	1.8	3.1	3.9

2001 Florida LAKEWATCH Data

Numbers reported below are monthly averages calculated from 3 stations for total phosphorus (TP, µg/L), total nitrogen (TN, µg/L), chlorophyll (CHL, µg/L) and Secchi depth (SECCHI, ft) during 2001:

<u>Date</u>	<u>TP (µg/L)</u>	<u>TN (µg/L)</u>	<u>CHL (µg/L)</u>	<u>SECCHI (ft)</u>
Jan-30	57	2473	39.7	2.4
Apr-04	73	1720	37.3	3.1
May-08	67	1517	44.0	1.8
Jul-03	85	1807	40.7	2.8
Aug-06	122	1707	23.0	3.4
Sep-05	65	1520	24.3	3.9
Oct-05	114	1440	25.3	3.6
Nov-08	115	1370	7.3	3.2
Dec-11	139	1493	12.7	3.9
2001 Average	93	1672	28.3	3.1

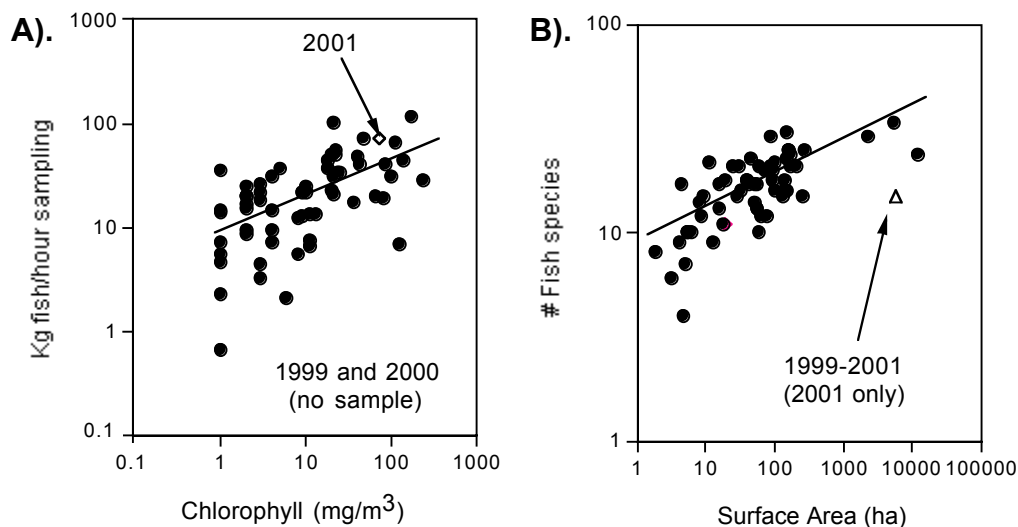
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