

Butler (Union County)

Florida LAKEWATCH Water Chemistry Summary

Location: Latitude 30°2'6", Longitude 82°20'17"

Period of record: 5 sampling dates; December 5, 2000 to October 9, 2001

Surface Area (Shafer et al. 1986): 420 acres

Lake Region (Griffith et al. 1997): Upper Santa Fe Flatwoods (75-03)

Geologic formation (Brooks 1981a):

The geology is dominated by phosphatic sand, clayey fine sand, and clay of the Bone Valley Formation

Physiographic region (Brooks 1981b):

The lake lies in the High Flatwoods subdivision of the Okefenokee Upland division of the Sea Island District

Supplemental water chemistry data

Data reported are means from 5 sampling dates:

pH	6.1	Total alkalinity (mg/L as CaCO ₃)	2.2
Conductance (µS/cm @ 25 °C)	53	Color (Pt-Co units)	53
Chloride (mg/L)	9.4	Silicon (mg/L)	0.5
Sulfate (mg/L)	6.5	Calcium (mg/L)	3.0
Magnesium (mg/L)	3.7	Sodium (mg/L)	4.9
Potassium (mg/L)	0.6	Iron (mg/L)	0.2

Periodic water chemistry data

Numbers reported below are the minimum, average, and maximum value for the 4 sampling dates:

	<u>Minimum</u>	<u>Average</u>	<u>Maximum</u>
Long-term color concentrations (Pt-Co units)	10	13	15

Long-term Florida LAKEWATCH Data

Numbers reported below are the minimum, average and maximum value for the 5 months sampled:

	<u>Minimum</u>	<u>Average</u>	<u>Maximum</u>
Long-term total phosphorus concentrations (µg/L)	11	18	25
Long-term total nitrogen concentrations (µg/L)	447	481	507
Long-term total chlorophyll concentrations (µg/L)	2.0	4.6	7.0
Long-term Secchi depth (ft)	2.5	3.8	5.3

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-17	12	507	3.3	5.3
May-07	25	483	4.7	2.8
Jul-25	23	487	7.0	2.5
Oct-09	17	483	6.0	3.0
2001 Average	19	490	5.3	3.4

Butler (Union County)
Florida LAKEWATCH Bacteria Summary

The following table lists bacteria concentrations found in Butler (Union 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.

May 29, 2001

Lake	County	Station	Station Location	Total Coliforms (MPN)	Fecal Coliforms (MPN)
Butler	Union	1	Off vegetation	370	0
Butler	Union	2	Off vegetation	1100	0
Butler	Union	3	Off vegetation	290	0
Butler	Union	4	Off vegetation	570	0
Butler	Union	5	Off vegetation	450	0
Butler	Union	6	Off vegetation	1080	10
Butler	Union	7	Off vegetation	180	0
Butler	Union	8	Off vegetation	400	0
Butler	Union	9	Off vegetation	200	0
Butler	Union	10	Open water	120	0
Butler	Union	11	Open water	570	0
Butler	Union	12	Open water	110	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 Butler on May 29, 2001 ranged from 110 to 1100 MPN. Total coliform bacteria exceeded 1,000 MPN in 17% of the samples. Total coliform bacteria did not exceed 2,400 at any station. Total coliform bacteria were within the acceptable range as defined by the Florida Administrative Code (FAC), Section 62-302.530.

Fecal coliform bacteria counts for Butler on May 29, 2001 ranged from 0 to 10 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.

Butler (Union County)
Florida LAKEWATCH Aquatic Plant Summary

Aquatic plant data collected on May 29, 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)	4.1
Average floating-leaved plant biomass (kg wet wt/m ²)	1.7
Average submersed plant biomass (kg wet wt/m ²)	1.7
Average width of emergent and floating-leaved zone (ft)	68.9
Average lake depth (m)	.

Frequency that plant species occur in 10 evenly spaced transects around the lake.

<u>Common Name</u>	<u>Plant Species</u>	<u>Frequency (%)</u>
buttonbush	<i>Cephalanthus occidentalis</i>	100
maidencane	<i>Panicum hemitomon</i>	100
bald cypress	<i>Taxodium distichum</i>	100
pickerelweed	<i>Pontederia cordata</i>	90
lemon bacopa	<i>Bacopa caroliniana</i>	90
water Star-Wort	<i>Callitriche heterophylla</i>	90
slender spikerush	<i>Eleocharis baldwinii</i>	80
banana-lily	<i>Nymphoides aquatica</i>	80
fragrant water-lily	<i>Nymphaea odorata</i>	70
variable-leaf milfoil	<i>Myriophyllum heterophyllum</i>	60
spatterdock	<i>Nuphar luteum</i>	50
bog-moss	<i>Mayaca fluviatilis</i>	50
cat-tail	<i>Typha spp.</i>	40
variableleaf pondweed	<i>Potamogeton diversifolius</i>	40
water-pennywort	<i>Hydrocotyle umbellata</i>	30
southern water-grass	<i>Hydrochloa caroliniensis</i>	30
St. John's wort	<i>Hypericum spp.</i>	30
three-square	<i>Scirpus americanus</i>	30
cone-spur bladderwort	<i>Utricularia gibba</i>	20
willow	<i>Salix spp.</i>	20
giant bulrush	<i>Scirpus californicus</i>	20
hydrilla	<i>Hydrilla verticillata</i>	10
wax myrtle	<i>Myrica cerifera</i>	10
respinata bladderwort	<i>Utricularia resupinata</i>	10
giant spikerush	<i>Eleocharis interstincta</i>	10