

75-21 Orlando Ridge Lake Values

Mean Value	pH (lab) n=40	Total Alkalinity (mg/l) n=40	Conductivity ($\mu\text{S}/\text{cm}@25^\circ\text{C}$) n=40	Total phosphorus ($\mu\text{g}/\text{l}$) n=89	Total Nitrogen ($\mu\text{g}/\text{l}$) n=89	Chlorophyll_a ($\mu\text{g}/\text{l}$) n=89	Color (pcu) n=40	Secchi (m) n=85
minimum	5.7	1.6	13	6	118	0.5	0	0.4
25th %	7.7	29.8	169	21	650	14	10	1.0
median	7.8	48.1	183	31	761	22	14	1.3
75th %	8.1	56.6	205	47	940	35	17	1.9
maximum	9.3	88.7	267	179	2177	116	68	8.1

75-22 Tampa Plain

The low-relief Tampa Plain has elevations ranging from 5 to 90 feet and contains some karst features. Medium to fine sand and silt cover the Quaternary Ft. Thompson Formation clastics and shell deposits, and the Miocene Tampa Member of the Arcadia Formation. The lake region includes the Odessa Flats, Lake Tarpon Basin, and parts of the Land-o-Lakes physiographic subdistricts of Brooks (1981b). Common soil associations include Smyrna-Sellers-Myakka (Pasco County) and Myakka-Bassinger-Holopaw (Hillsborough County). Pine flatwood vegetation was dominant in this area. The region has slightly acidic, darkwater, mesotrophic lakes, in contrast to the clearer lakes of the bordering Keystone Lakes (75-23) and Land-o-Lakes (75-24) regions.

75-22 Tampa Plain Lake Values

Mean Value	pH (lab) n=6	Total Alkalinity (mg/l) n=6	Conductivity ($\mu\text{S}/\text{cm}@25^\circ\text{C}$) n=6	Total phosphorus ($\mu\text{g}/\text{l}$) n=8	Total Nitrogen ($\mu\text{g}/\text{l}$) n=5	Chlorophyll_a ($\mu\text{g}/\text{l}$) n=5	Color (pcu) n=6	Secchi (m) n=8
minimum	6.6	3.5	39	11	635	4	45	0.4
25th %	6.7	4.2	52	21	807	9	52	0.9
median	6.8	11.1	106	27	812	9	70	1.3
75th %	7.4	24.9	203	38	1319	16	85	1.6
maximum	7.8	69.3	596	136	1450	43	174	2.0

75-23 Keystone Lakes

The Keystone Lakes region is a small, well-drained, sandy upland area within the Tampa Plain, with elevations generally 30 to 60 feet and numerous lakes. Zolfo fine sand soils are common on the better-drained upland areas, with Myakka and Basinger soils in more poorly-drained depressional areas. The lakes of the region are slightly acidic, low nutrient, mostly clearwater lakes. The Keystone Lakes region has lower pH, alkalinity, and nitrogen values than in the nearby Land-o-Lakes region (75-24), and there is also less citrus and residential development.

75-23 Keystone Lakes Lake Values

Mean Value	pH (lab) n=19	Total Alkalinity (mg/l) n=19	Conductivity (μ S/cm@25°C) n=19	Total phosphorus (μ g/l) n=32	Total Nitrogen (μ g/l) n=33	Chlorophyll_a (μ g/l) n=32	Color (pcu) n=19	Secchi (m) n=25
minimum	4.6	0.0	100	3	103	1	2	0.7
25th %	6.3	2.2	134	8	413	2	13	1.7
median	6.7	7.2	162	13	567	5	26	2.3
75th %	6.8	10.1	175	18	692	10	34	2.9
maximum	7.6	34.0	248	27	1078	21	75	4.5

75-24 Land-o-Lakes

This is a sandy upland region that separates the Tampa Plain (75-22) and Hillsborough Valley (75-25). Elevations of the region are mostly 30-80 feet, and there is a high density of lakes. Soils are generally similar to those in region 75-23. Natural vegetation was dominated by longleaf pine and turkey oaks, now mostly removed for citrus groves and residential development. The lakes are neutral to slightly alkaline, low to moderate nutrient, clearwater lakes. Some lakes are occasionally augmented with groundwater.

75-24 Land-o-Lakes Lake Values

Mean Value	pH (lab) n=20	Total Alkalinity (mg/l) n=20	Conductivity (μ S/cm@25°C) n=20	Total phosphorus (μ g/l) n=39	Total Nitrogen (μ g/l) n=38	Chlorophyll_a (μ g/l) n=38	Color (pcu) n=20	Secchi (m) n=31
minimum	6.1	2.1	56	6	260	1	12	0.4
25th %	7.0	12.3	126	11	537	3	17	1.5
median	7.3	23.0	178	14	734	6	21	2.3
75th %	7.6	40.1	211	21	921	12	33	3.4
maximum	8.4	93.7	257	42	1960	35	93	4.0

75-25 Hillsborough Valley

This is a plain of low-relief containing relatively sluggish surface drainage of the Hillsborough River watershed. Natural vegetation is varied, including longleaf pine/turkey oak, pine flatwoods, and hardwood swamp forests (Davis 1967). There are karst features, but almost no lakes in this region. Data for three lakes indicate that generally alkaline, moderate to high nutrient, darkwater lakes are found in this region. Lake Thonotosassa is the largest, and is alkaline and hypereutrophic (Brenner et al. 1996). High nutrient loadings from urban and industrial sources also enter the lake, and algae blooms and fish kills have been observed (Hand and Paulic 1992, Hand et al. 1994).

75-25 Hillsborough Valley Lake Values

Lake	pH (lab)	Total Alkalinity (mg/l)	Conductivity (μ S/cm@25°C)	Total phosphorus (μ g/l)	Total Nitrogen (μ g/l)	Chlorophyll_a (μ g/l)	Color (pcu)	Secchi (m)
no name	7.1	7.1	91	29	-	-	105	1.3
Ten Mile	-	-	-	40	1094	43	-	0.9
Thonoto-sassa	8.3	47.9	214	834	1452	67	82	0.7

75-26 Green Swamp

The Green Swamp is a distinctive feature of the central Florida peninsula. It is an extensive area of flatland and swampland at a relatively high elevation, 75-150 feet, and it contains the headwaters of the Withlacoochee, Oklawaha, Hillsborough, Peace, and Kissimmee rivers. It is not a continuous expanse of swamp, but a composite of many swamps interspersed with low ridges, hills, and flatlands (Pride et al. 1966). Our Green Swamp region includes the Webster Limestone Wet Plain in the west that overlies the Eocene Ocala limestone, as well as the Green Swamp area to the east above the Mioce Hawthorn Group sediments. The overlying layer of clastic deposits of sand and clay are thinner to the west (Pride et al. 1966). The vegetation includes cypress in the swampy areas, pine flatwoods, and some pine and oak in the upland, better-drained areas.

The water table is at or near the surface in much of the region, with large areas of standing water after heavy rainfall. Surface waters are generally colored and acidic, but there are few, if any, natural lakes. Mill Stream Swamp was sampled under the Lakewatch program.

75-26 Green Swamp Lake Values

Lake	pH (lab)	Total Alkalinity (mg/l)	Conductivity ($\mu\text{S}/\text{cm}@25^\circ\text{C}$)	Total phosphorus ($\mu\text{g}/\text{l}$)	Total Nitrogen ($\mu\text{g}/\text{l}$)	Chlorophyll_a ($\mu\text{g}/\text{l}$)	Color (pcu)	Secchi (m)
Mill Stream Swamp	-	-	-	46	1346	33	-	-

75-27 Osceola Slope

This region is composed of Pleistocene lagoonal deposits with a top layer of medium to fine sands and silts. Elevations are generally 60-90 feet, and somewhat higher than the Lake Toho area lakes to the west, and the soils are more heterogeneous as well. Smyrna, Myakka, and Tavares soils are on the better-drained low ridges and knolls, and Basinger and Samsula soils are found in the wet and swampy areas adjacent to parts of some lakes. Vegetation is primarily pine flatwoods (Davis 1967), but some low, dry ridges have turkey oak and sand scrub. Osceola Slope lakes are acidic, relatively low nutrient, colored lakes. The lakes have lower color, pH, alkalinity, conductivity, and nutrient values than lakes in the Kissimmee/Okeechobee Lowland (75-35).

75-27 Osceola Slope Lake Values

Mean Value	pH (lab) n=17	Total Alkalinity (mg/l) n=17	Conductivity ($\mu\text{S}/\text{cm}@25^\circ\text{C}$) n=17	Total phosphorus ($\mu\text{g}/\text{l}$) n=18	Total Nitrogen ($\mu\text{g}/\text{l}$) n=16	Chlorophyll_a ($\mu\text{g}/\text{l}$) n=16	Color (pcu) n=16	Secchi (m) n=15
minimum	4.5	0.0	56	10	389	2	22	0.2
25th %	5.6	0.5	88	14	637	4	64	0.6
median	5.8	2.2	101	17	847	7	135	1.1
75th %	6.1	3.1	116	23	985	9	219	1.6
maximum	7.1	11.5	152	84	1280	11	300	2.6

75-28 Pinellas Peninsula

The coastal geology changes in this region from the exposed limestone in regions to the north to a covering of clastic sediments. The northern part of the Pinellas Peninsula is underlain by deeply weathered sand hills of the Miocene Hawthorn Group, with Pleistocene sand, shell, and clay deposits covering the southern part. Besides the coastal strand, the natural vegetation consisted of longleaf pine/xerophytic oak on the north and west, and pine flatwoods on the southeast (Davis 1967). The dominant characteristic of the region now is the Clearwater/St. Petersburg urbanization.

Several small lakes are found in this region, with sampling done at Cliff Stephens Park, Harbor, Loch Haven, Maggiore, Moccasin, and Seminole. They are high nutrient lakes, and this may be a result of phosphoritic pebbles in the Hawthorn Group sediments, as well as due to anthropogenic impacts. Alkalinity and pH values also appear high, although this is based on data only from lakes Maggiore and Seminole.

75-28 Pinellas Peninsula Lake Values

Mean Value	pH (lab) n=2	Total Alkalinity (mg/l) n=2	Conductivity (μ S/cm@25°C) n=2	Total phosphorus (μ g/l) n=6	Total Nitrogen (μ g/l) n=6	Chlorophyll_a (μ g/l) n=6	Color (pcu) n=2	Secchi (m) n=6
minimum	8.6	90.4	404	14	545	4	27	0.3
25th %	-	-	-	78	930	45	-	0.4
median	8.7	100.2	706	87	1370	49	29	0.9
75th %	-	-	-	98	1837	61	-	1.2
maximum	8.8	109.9	1008	122	2330	67	32	3.2

75-29 Wimauma Lakes

This very small region includes only Lake Wimauma and Carlton Lake. These are clear, acidic, low nutrient, small water bodies. No lake data were collected from this region for this project. The soils in this area are a complex mosaic of alkaline and acid sands. The extent of these relatively anomalous clear, acidic, oligotrophic lakes within the Southwestern Flatlands (75-36) region is not known, although there are probably very few other lakes similar to Wimauma and Carlton.

75-30 Lakeland/Bone Valley Upland

The lake region includes the Lakeland Ridge, the Bone Valley Uplands, and part of the Bartow Embayment physiographic subdistricts of Brooks (1981b; 1982). The Lakeland Ridge consists of sand hills near 200 feet in elevation with many solution depression lakes; the Bone Valley Uplands and the Bartow Embayment, within White's (1970) Polk Upland physiographic region, tend to be more poorly drained flatwoods areas. All of these areas are covered by phosphatic sand or clayey sand from the Miocene-Pliocene Bone Valley Member of the Peace River Formation in the Hawthorn Group (Scott 1992; Scott and

MacGill 1981). The region generally encompasses the area of most intensive phosphate mining, but phosphate deposits and mining activities are also found south of this region.

As one might expect, the dominant characteristic of all lakes in this region is high phosphorus, along with high nitrogen and chlorophyll-*a* values. The lakes are alkaline, with some receiving limestone-influenced groundwater.

75-30 Lakeland/Bone Valley Upland Lake Values

Mean Value	pH (lab) n=17	Total Alkalinity (mg/l) n=17	Conductivity (μS/cm@25°C) n=17	Total phosphorus (μg/l) n=18	Total Nitrogen (μg/l) n=18	Chlorophyll_a (μg/l) n=18	Color (pcu) n=17	Secchi (m) n=13
minimum	7.3	22.7	101	59	1276	40	15	0.3
25th %	7.5	24.0	152	120	1703	79	18	0.6
median	8.0	50.8	163	344	1852	91	28	0.7
75th %	9.1	66.0	197	526	2420	136	33	0.9
maximum	9.8	143.7	408	965	4493	252	40	1.0

75-31 Winter Haven/Lake Henry Ridges

This upland karst area, 130-170 feet in elevation, has an abundance of small to medium sized lakes. Candler-Tavares-Apopka is the dominant soil association of the well-drained upland areas, with longleaf pine and xerophytic oak natural vegetation. Pliocene quartz pebbly sand and the phosphatic Bone Valley Member (Peace River Formation) of the Hawthorn Group comprise the underlying geology. The lakes can be characterized as alkaline, moderately hardwater lakes of relatively high mineral content, and are eutrophic.

75-31 Winter Haven/Lake Henry Ridges Lake Values

Mean Value	pH (lab) n=25	Total Alkalinity (mg/l) n=25	Conductivity (μS/cm@25°C) n=25	Total phosphorus (μg/l) n=44	Total Nitrogen (μg/l) n=43	Chlorophyll_a (μg/l) n=44	Color (pcu) n=26	Secchi (m) n=40
minimum	6.6	3.2	147	8	358	1.5	8	0.3
25th %	7.5	31.0	191	21	695	13	12	0.8
median	7.8	37.6	275	26	870	24	20	1.1
75th %	8.0	59.4	331	39	1312	40	26	1.8
maximum	9.0	87.0	417	470	1997	105	57	3.7

75-32 Northern Lake Wales Ridge

This narrow ridge forms the topographic crest of central Florida, with our lake region extending south from the Clermont Uplands in Lake County to the Livingston Creek drainage in Highlands County. Elevations are generally 100-300 feet. An unnamed unit of non-marine coarse clastic sediments of Miocene age (poorly sorted quartz sands and pebbles imbedded in kaolinitic clay) form the ridge (Scott 1980). Although the Iron Mountains (Brooks 1981b) are shown as the Miocene Hawthorn Formation, Interlachen facies, other parts of this region are classified as Pleistocene beach and dune sand and Pliocene undifferentiated sand (Brooks 1981a). The well-drained sandy soils are dominated by the Candler-Tavares-Apopka association, covered by citrus groves, pasture,

and urban and residential development. The lakes are mostly alkaline, low to moderate nutrient, clearwater lakes. Nitrogen values tend to be high. These lakes are richer in nutrients than lakes in the Southern Lake Wales Ridge (75-33), although the cause of this is not readily apparent. Citrus production and land cover appear similar in both regions.

75-32 Northern Lake Wales Ridge Lake Values

Mean Value	pH (lab) n=15	Total Alkalinity (mg/l) n=15	Conductivity ($\mu\text{S}/\text{cm}@25^\circ\text{C}$) n=15	Total phosphorus ($\mu\text{g}/\text{l}$) n=20	Total Nitrogen ($\mu\text{g}/\text{l}$) n=18	Chlorophyll_a ($\mu\text{g}/\text{l}$) n=18	Color (pcu) n=15	Secchi (m) n=16
minimum	6.0	0.2	79	3	331	1	6	0.5
25th %	7.2	15.2	125	8	632	4	7	1.0
median	7.9	35.0	192	16	1015	11	10	1.9
75th %	8.3	56.5	291	22	1760	20	17	2.6
maximum	8.9	130.6	425	38	5970	52	96	7.5

75-33 Southern Lake Wales Ridge

This lake region contains parts of the southern ridge and the Intraridge Valley where there are mostly clearwater lakes. Elevations range from 70-150 feet, and soils are generally in the sandy, well-drained Astatula-Paola-Tavares association. The landcover is primarily citrus groves, with rapidly expanding urban and residential areas. The lakes in the region range from acidic to alkaline, but almost all are clear with low color and low nutrients.

75-33 Southern Lake Wales Ridge Lake Values

Mean Value	pH (lab) n=35	Total Alkalinity (mg/l) n=35	Conductivity ($\mu\text{S}/\text{cm}@25^\circ\text{C}$) n=35	Total phosphorus ($\mu\text{g}/\text{l}$) n=42	Total Nitrogen ($\mu\text{g}/\text{l}$) n=31	Chlorophyll_a ($\mu\text{g}/\text{l}$) n=29	Color (pcu) n=35	Secchi (m) n=41
minimum	5.0	0.0	36	2	233	1	2	0.8
25th %	6.3	1.9	132	5	418	3	5	2.0
median	7.3	14.3	161	8	517	4	9	3.1
75th %	7.7	22.6	233	12	882	6	11	4.8
maximum	9.4	37.1	367	125	4803	35	28	7.2

75-34 Lake Wales Ridge Transition

This lake region includes the ridge margin or transition lakes that are darker colored with higher nutrients than the lakes found on the Southern Lake Wales Ridge (75-33). Elevations are 70-130 feet, and there are more extensive areas of poorly-drained soils, such as the Satellite and Basinger series. Peaty muck Samsula soils border many of the lakes. The lake region also includes the narrow Bombing Range Ridge on the east. This is a narrow, 20 mile long sand ridge located in the Avon Park Bombing Range between Lake Kissimmee and Lake Istokpoga. Elevations reach near 150 feet. The ridge may have been an offshore sand bar associated with and created together with the Lake Wales Ridge (Lane et al. 1980). The sand pine and scrub covered ridge contains soils of the Satellite-Archbold-Pomello association, similar to the edges of the Lake Wales Ridge where the

more colored lakes are located. There are several very small lakes on this ridge, but little is known about them. About ten small lakes are shown within Bombing Range Ridge on the Bartow 1:100, 000-scale topographic map with two named lakes: Submarine Lake and Little Lake. The lake region also includes a small area of upland soils near Lake Buffum on the west. Most of the lakes in the region are acidic, although about one-third of them tend to be alkaline. They have low to moderate nutrients, and are slightly to moderately colored.

75-34 Lake Wales Ridge Transition Lake Values

Mean Value	pH (lab) n=28	Total Alkalinity (mg/l) n=28	Conductivity (μ S/cm@25°C) n=28	Total phosphorus (μ g/l) n=27	Total Nitrogen (μ g/l) n=25	Chlorophyll_a (μ g/l) n=25	Color (pcu) n=28	Secchi (m) n=30
minimum	4.4	0.0	50	0	279	4	5	0.1
25th %	5.8	2.3	76	14	517	6	22	0.8
median	6.6	4.9	93	19	810	11	41	1.1
75th %	7.8	26.6	189	42	977	23	68	1.5
maximum	8.9	96.0	346	148	2940	75	250	3.4

75-35 Kissimmee/Okeechobee Lowland

This region includes the Kissimmee Valley, a lowland with prairie type grasslands, flatwoods, and some swamp forest. The regional boundaries also enclose most of the Fisheating Creek drainage to capture the hydrologic inputs to Lake Okeechobee. The wet prairies of this region are seasonally flooded, and dry prairies on seldom-flooded flatland have mostly been converted to pasture (Davis 1967). Pleistocene lagoonal deposits of coastal sand and shelly silty sand characterize the geology (Brooks 1981a). Lakes are alkaline, eutrophic, and colored. The shallow, subtropical Lake Okeechobee is one of the largest lakes in the United States, and historically formed the direct link between waters of the Kissimmee basin and the Everglades (76-01). Now encircled by a flood-control dike, with regulated inflows and outflows, the lake serves as a water supply for urban and agricultural areas, as well as supporting habitat for migratory waterfowl and a valuable fishery (Havens et al. 1996).

75-35 Kissimmee/Okeechobee Lowland Lake Values

Mean Value	pH (lab) n=13	Total Alkalinity (mg/l) n=13	Conductivity (μ S/cm@25°C) n=13	Total phosphorus (μ g/l) n=13	Total Nitrogen (μ g/l) n=13	Chlorophyll_a (μ g/l) n=13	Color (pcu) n=13	Secchi (m) n=13
minimum	6.9	8.4	76	17	455	2	42	0.5
25th %	7.0	14.7	102	34	847	10	53	0.6
median	7.3	21.7	118	43	1063	15	91	0.7
75th %	7.8	25.9	126	57	1111	18	116	1.0
maximum	8.5	100.3	443	146	1276	44	216	1.2

75-36 Southwestern Flatlands

This lowland lake region includes barrier islands, Gulf coastal flatlands and valleys, and gently sloping coastal plain terraces at higher elevations. The elevations range from sea level to 150 feet. Much of the pine flatwoods and wet and dry grassland prairies have been converted to extensive areas of pasture, rangeland, and young citrus groves. Urban areas are growing rapidly near the coast. Lakes in this region can range from slightly acidic to alkaline, but almost all are eutrophic and have dark colored water. Some lakes near the Lake Wales/WinterHaven area appear more similar to the Lake Wales Ridge Transition (75-34) lakes, that is, with more moderate levels of nutrients and color, such as in South Crooked, Myrtle, and Lowery lakes in Polk County. The larger number of lakes shown in the phosphorus, nitrogen, chlorophyll-*a*, and Secchi columns in the table below are mostly from small ponds and waterbodies on Sanibel Island and from a small area south of Punta Gorda sampled in the Lakewatch program.

75-36 Southwestern Flatlands Lake Values

Mean Value	pH (lab) n=17	Total Alkalinity (mg/l) n=17	Conductivity (μS/cm@25°C) n=17	Total phosphorus (μg/l) n=44	Total Nitrogen (μg/l) n=42	Chlorophyll_a (μg/l) n=39	Color (pcu) n=16	Secchi (m) n=37
minimum	5.4	1.8	82	16	618	3	23	0.2
25th %	6.6	4.8	121	54	1245	11	60	0.4
median	6.7	10.2	167	101	1662	34	91	0.7
75th %	7.3	30.3	201	219	2182	52	125	1.2
maximum	8.6	76.0	319	564	3686	190	390	2.8

75-37 Immokalee Rise

This area of slightly elevated land, with elevations of 25-35 feet, includes the Immokalee Rise, Corkscrew Swamp, and Devils Garden physiographic subdistricts of Brooks (1981b; 1982). Pine flatwoods and wet prairies are dominant natural vegetation types. Geologic formations include Miocene-age Tamiami Formation sands and clays, and Pleistocene-age calcareous shelly sand of the Caloosahatchie Formation and clastic and shell deposits of the Fort Thompson Group (Brooks 1981a; Vernon and Puri 1964). Lake Trafford is the largest lake in the region. It was characterized as an alkaline, hardwater lake of high mineral content (Canfield 1981). There are few other lakes in the region, and these would tend to be small, swampy, and seasonal.

75-37 Immokalee Rise Lake Values

Lake	pH (lab)	Total Alkalinity (mg/l)	Conductivity (μS/cm@25°C)	Total phosphorus (μg/l)	Total Nitrogen (μg/l)	Chlorophyll_a (μg/l)	Color (pcu)	Secchi (m)
Trafford	8.5	111	225	65	1270	28	48	1.0

76-01 Everglades

This region begins south of Lake Okeechobee to include the Everglades Agricultural Area, the water conservation areas, and the sawgrass and sloughs of the national park.

The eastern and western boundaries of the region are from Griffith et al. (1995). The flat plain of saw-grass marshes, tree-islands, and marsh prairies, with cropland in the north, ranges in elevation from sea level to twenty feet. Peat, muck, and some clay are the main surficial materials over the limestone. Wide sloughs, marshes, and some small ponds contain most of the surface waters in this "River of Grass" region. Canals drain much of the water in some areas. No data for the small ponds were collected for this study.

76-02 Big Cypress

The Big Cypress is a flat region, 5 to 30 feet in elevation and slightly higher than the Everglades, covered by pine flatwoods, open scrub cypress, prairie type grasslands, and extensive marsh and wetlands. Poorly drained soils overlie limestone, calcareous sandstones, marls, swamp deposit mucks, and algal muds. Lakes are absent from the region.

76-03 Miami Ridge/Atlantic Coastal Strip

This is a heavily urbanized region, sea level to 25 feet in elevation, with coastal ridges on the east and flatter terrain to the west that grades into the Everglades. The western side originally had wet and dry prairie marshes on marl and rockland and sawgrass marshes (Davis 1967), but much of it now is covered by cropland, pasture, and suburbs. To the south, the Miami Ridge extends from near Hollywood south to Homestead and west into Long Pine Key of Everglades National Park. It is a gently rolling rock ridge of oolitic limestone that once supported more extensive southern slash pine forests as well as islands of tropical hardwood hammocks. The northern part of the region is occupied by the Green Acres Sand Prairie (Brooks 1981), a plain of pine flatwoods and wet prairie, and coastal sand ridges with scrub vegetation and sand pine. There are few natural lakes in the region, but three types of ponded surface waters occur: 1) Pits dug deep into underlying "rock" containing water that is clear, high pH and alkaline, with moderate nutrients; 2) Shallow, surficial dug drains that are darker water; and 3) flow-through lakes (e.g., Lake Osborne) that are colored and nutrient rich. Data for only two lakes were collected in this region, Osborne in Palm Beach County was sampled by Canfield (1981) and Lakewatch, and Tigertail in Broward County by Canfield (1981).

76-03 Miami Ridge/Atlantic Coastal Strip Mean Lake Values

Lake	pH (lab)	Total Alkalinity (mg/l)	Conductivity ($\mu\text{S}/\text{cm}@25^\circ\text{C}$)	Total phosphorus ($\mu\text{g}/\text{l}$)	Total Nitrogen ($\mu\text{g}/\text{l}$)	Chlorophyll_a ($\mu\text{g}/\text{l}$)	Color (pcu)	Secchi (m)
Osborne	8.2	204	477	138	1168	40	60	1.0
Tigertail	8.9	66	166	14	607	2.5	4	-

76-04 Southern Coast and Islands

This region includes the Ten Thousand Islands and Cape Sable, the islands of Florida Bay, and the Florida Keys. It is an area of mangrove swamps and coastal marshes, coral reefs, various coastal strand type vegetation on beach ridge deposits and limestone rock islands. Although freshwater habitats are limited or non-existent in this region, any freshwater that does occur for periods of time may have great ecological significance.

Coastal rockland lakes are small in size and number, occurring primarily in the Florida Keys. With a limestone rock substrate, the waters are alkaline, with high mineral content and highly variable salinity levels. These rockland lakes provide important habitat for several kinds of fish, mammals, and birds of the Keys (Florida Natural Areas Inventory 1990). Reduction in the fresh groundwater lens that floats on the more dense saline groundwater can severely affect these lakes. Chemistry data for these lakes were not available for this study.

CONCLUSIONS AND RECOMMENDATIONS

The lakes of Florida contain a wide range of variation in their limnological characteristics. Similar to findings of other regional lake surveys, there is a strong relationship between the chemical composition of Florida's lakes and factors such as soils, physiography, and surficial geology. In addition to the natural variation of lake characteristics through time and space, a variety of human activities have modified surrounding landscapes, with certain modifications affecting some groups of lakes more than others. The lake region classification for Florida appears to be a useful framework for generalizing some of these complexities as an aid to lake resource assessment and management. It is a formalization of some commonly recognized regions in Florida and has similarities to several other frameworks of the state, but this framework is designed for the specific purpose of lake classification.

The interest in such a regional framework should be in its usefulness as a general stratifier, rather than with the potential correspondence of any single aquatic component. Does the framework and the associated data provide a mechanism to better understand the spatial variations in the characteristics and quality of Florida lakes? Does it help clarify the general limnological capabilities and potentials of these lakes? We believe this work is one piece of the foundation needed to achieve such lake management goals.

Modifications of the lake region framework might be warranted, however, as more information and understanding is gained. Aggregations of several upland regions, for example, might be useful for certain assessments. Small regions such as the Wimauma Lakes (75-29) might be excluded, while large regions such as the Eastern Flatlands (75-10) could be divided. Additional research will be needed to account for the natural variability within the lake regions. If the selected lakes in a region show a high range of variability, additional stratification or classification within the region may be necessary.

Regional maps of the parameters such as phosphorus and alkalinity that appear on the lake region poster, along with their associated histograms of the distribution of lakes, can

be useful in assessing issues such as eutrophication and acidification. With the continued growth of the UF lake database, along with other data sources, more precise maps of various lake parameters should be developed.

The hypothesis that a regional framework and some type of reference lake condition can give managers and scientists a better understanding of the spatial variations in the chemical, physical, and biological components of Florida lakes is intuitive but remains to be tested. Significant time and effort will be required for the collection and creative analysis of data to develop biological or chemical criteria and regional water quality standards, and to more fully understand attainable water conditions. The State of Florida continues to be a national leader in this effort.

Water cannot be viewed in isolation from its watershed and that is why holistic perspectives are important. Although watersheds and basins are useful study units for understanding certain aspects about the quantity and quality of water, it must be recognized that the spatial distribution of factors that affect water quantity and quality (such as vegetation, land cover, soils, geology, etc.), does not coincide with topographic watershed boundaries (Omernik and Griffith 1991). Watershed management or ecosystem management requires a spatial framework that considers the regional tolerances and capacities of landscapes. That is why the ecoregion framework and lake region framework can help in the DEP's ecosystem management approach.

Improving the quality of aquatic and terrestrial ecosystems in Florida will require the cooperation and coordination of local, state, and federal interests, both private and public. It is our hope that these regional frameworks will help improve communication and assessment within and among different groups and agencies. Although pollution of water bodies, fragmentation or loss of habitat, and alteration of landscapes have many causes, regional assessment tools can be valuable to both resource managers and researchers for stratifying natural variability and addressing the nature of these issues.

REFERENCES

- Bachmann, R.W., B.L. Jones, D.D. Fox, M. Hoyer, L.A. Bull, and D.E. Canfield, Jr. 1996. Relations between trophic state indicators and fish in Florida (USA) lakes. *Canadian Journal of Fisheries and Aquatic Sciences* 53(4):842-855.
- Baker, L.A., C.D. Pollman, and J.M. Eilers. 1988. Alkalinity regulation in softwater Florida lakes. *Water Resources Research* 24(7):1069-1082.
- Barbour, M.T., J. Gerritsen, G.E. Griffith, R. Frydenborg, E. McCarron, J.S. White, M.L. Bastian. 1996. A framework for biological criteria for Florida streams using benthic macroinvertebrates. *Journal of the North American Benthological Society* 15(2):185-211.
- Barnett, E., J. Lewis, J. Marx, and D. Trimble (eds.). 1995. *Ecosystem Management Implementation Strategy*. Ecosystem Management Implementation Strategy Committee and Florida Department of Environmental Protection. Tallahassee, FL.
- Beaver, J.R. and T.L. Crisman. 1991. Importance of latitude and organic color on phytoplankton primary productivity in Florida lakes. *Canadian Journal of Fisheries and Aquatic Sciences* 48(7):1145-1150.
- Beaver, J.R., T.L. Crisman, and J.S. Bays. 1981. Thermal regimes of Florida lakes. *Hydrobiologia* 83: 267-273.
- Berner, L. and M.L. Pescador. 1988. *The mayflies of Florida*. University Presses of Florida, Gainesville, FL. 415p.
- Bradley, J.T. 1974. The climate of Florida. In: *Climates of the States. Volume I - Eastern States*. U.S. Department of Commerce, National Oceanic and Atmospheric Administration. pp.45-70.
- Brenner, M., M.W. Binford, and E.S. Deevey. 1990. Lakes. In: *Ecosystems of Florida*. R.L. Myers and J.J. Ewel (eds.). University of Central Florida Press, Orlando, FL. pp. 364-391.
- Brenner, M., T.J. Whitmore, and C.L. Schelske. 1996. Paleolimnological evaluation of historical trophic state conditions in hypereutrophic Lake Thonotosassa, Florida, USA. *Hydrobiologia* 331(1-3):143-152.
- Brooks, H.K. 1981a. Geologic map of Florida. Scale 1:500,000. Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL.
- Brooks, H.K. 1981b. Physiographic divisions. Scale 1:500,000. Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL.
- Brooks, H.K. 1982. Guide to the physiographic divisions of Florida. Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville.

- Burgess, G.H. and S.J. Walsh. 1991. Final report: Cooperative UF/DER/EPA Florida ichthyofaunal regionalization/bioassessment project. Florida Museum of Natural History, Gainesville, FL. 12p.
- Bush, P.W. 1974. Hydrology of the Oklawaha lakes area of Florida. Map Series No. 69. Florida Department of Natural Resources, Bureau of Geology. Tallahassee, FL.
- Caldwell, R.E. and R.W. Johnson. 1982. General soil map - Florida. Scale 1:1,000,000. U.S. Department of Agriculture, Soil Conservation Service in cooperation with University of Florida Institute of Food and Agricultural Sciences and Agricultural Experiment Stations, Soil Science Department. Gainesville, FL.
- Canfield, D.E., Jr. 1981. Chemical and trophic state characteristics of Florida lakes in relation to regional geology. University of Florida, Gainesville, FL. 444p.
- Canfield, D.E., Jr. 1983a. Prediction of chlorophyll -a concentration in Florida lakes: the importance of phosphorus and nitrogen. *Water Resources Bulletin* 19: 255-262.
- Canfield, D.E., Jr. 1983b. Sensitivity of Florida lakes to acid precipitation. *Water Resources Research* 19(3):833-839.
- Canfield, D.E., Jr., and M.V. Hoyer. 1988a. Regional geology and the chemical and trophic state characteristics of Florida lakes. *Lake and Reservoir Management* 4(1):21-31.
- Canfield, D.E., Jr., and M.V. Hoyer. 1988b. The eutrophication of Lake Okechobee. *Lake and Reservoir Management* 4(2):91-99.
- Canfield, D.E., Jr., and M.V. Hoyer. 1989. Managing lake eutrophication: The need for careful lake classification and assessment. In: *Proceedings of a National Conference on Enhancing States' Lake Management Programs*. North American Lake Management Society, Washington, D.C. pp.17-25.
- Canfield, D.E., Jr., S.B. Linda, and L.M. Hodgson. 1984. Relations between color and some limnological characteristics of Florida lakes. *Water Resources Bulletin* 20(3):323-329.
- Canfield, D.E., Jr., M.J. Maceina, L.M. Hodgson, and K.A. Langeland. 1983. Limnological features of some northwestern Florida lakes. *Journal of Freshwater Ecology* 2(1):67-79.
- Canfield, D.E., Jr., K.A. Langeland, M.J. Maceina, W.T. Haller, and J.V. Shireman. 1983. Trophic state classification of lakes with aquatic macrophytes. *Canadian Journal of Fisheries and Aquatic Sciences* 40(11):1713-1718.
- Clewell, A.F. 1985. Guide to the vascular plants of the Florida panhandle. Florida State University Press, Tallahassee. 605p.
- Conover, C.S., J.J. Geraghty, and G.C. Parker, Sr. 1984. Groundwater. Chapter 4. In: *Water Resources Atlas of Florida*. E.A. Fernald and D.J. Patton (eds.). Florida State University, Tallahassee, FL. pp36-53.

- Cooke, C.W. 1939. Scenery of Florida interpreted by a geologist. Florida Geological Survey Bulletin No. 17. pp 1-118.
- Cooke, C.W. 1945. Geology of Florida. Florida Geological Survey Bulletin No. 29. Tallahassee, FL. pp.1-339.
- Copeland, C.W., Jr., K.F. Rheams, T.L. Neathery, W.A. Gilliland, W. Schmidt, W.C. Clark, Jr., and D.E. Pope. 1988. Quaternary geologic map of the Mobile 4° x 6° quadrangle, United States. U.S. Geological Survey. Miscellaneous Investigations Series, Map I-1420 (NH-16). Scale 1:1,000,000.
- Craig, A.K. 1991. The physical environment of south Florida. In: South Florida: The Winds of Change. T.D. Boswell (ed.). Prepared for the Annual Conference of the Association of American Geographers, Miami. pp.1-16.
- Davis, J.H. Jr., 1943. The natural features of southern Florida, especially the vegetation and the Everglades. Florida Geological Survey Bulletin No. 25. Tallahassee, FL
- Davis, J.H. Jr., 1946. The peat deposits of Florida. Florida Geological Survey Bulletin No. 30:1-247. Tallahassee, FL.
- Davis, J.H. Jr., 1967. General map of the natural vegetation of Florida. Circular S-178. Institute of Food and Agricultural Sciences, Agricultural Experiment Station, University of Florida, Gainesville, FL.
- Deevey, E.S. Jr., 1988. Estimation of downward leakage from Florida lakes. *Limnology and Oceanography* 33(6):1308-1320.
- Deevey, E.S., M.W. Binford, M. Brenner, and T.J. Whitmore. 1986. Sedimentary records of accelerated nutrient loadings in Florida lakes. *Hydrobiologia* 143:49-53.
- Deuerling, R.J., Jr., and P.L. MacGill. 1981. Environmental Geology Series, Tarpon Springs Sheet. Map Series No. 99. Florida Bureau of Geology, Tallahassee, FL.
- Dierberg, F.E., V.P. Williams, and W.H. Schneider. 1988. Evaluating water quality effects of lake management in Florida. *Lake and Reservoir Management* 4(2):101-111.
- Doolittle, J.A. and G. Schellentrager. 1989. Soil survey of Orange County, Florida. U.S. Department of Agriculture, Soil Conservation Service. 175p.
- Eilers, J.M., D.H. Landers, and D.F. Brakke. 1988. Chemical and physical characteristics of lakes in the southeastern United States. *Environmental Science and Technology* 22(2):172-177.
- Estevez, E.D., B.J. Hartman, R. Kautz, and E.D. Purdum. 1984. Ecosystems of surface waters. Chapter 7. In: *Water Resources Atlas of Florida*. E.A. Fernald and D.J. Patton (eds.). Florida State University, Tallahassee. pp.92-107.

- Fenneman, N.M. 1938. Physiography of eastern United States. McGraw-Hill, New York. 714p.
- Fernald, E.A. (ed.). 1981. Atlas of Florida. Institute of Science and Public Affairs. Florida State University. Tallahassee, FL. 276p.
- Fernald, E.A. and D.J. Patton (eds.). 1984. Water resources atlas of Florida. Florida State University. Tallahassee, FL. 291p.
- Florida Agricultural Experiment Stations and U.S. Department of Agriculture, Soil Conservation Service. 1962. General soil map of Florida. Scale 1:1,000,000.
- Florida Department of Environmental Protection. 1994 (Draft). Lake bioassessments for the determination of nonpoint source impairment in Florida. Biology Section, Division of Administrative and Technical Services, Tallahassee, FL.
- Florida Natural Areas Inventory. 1990. Guide to the natural communities of Florida. Florida Natural Areas Inventory and Florida Department of Natural Resources, Tallahassee, FL. 111p.
- Florida Resources and Environmental Analysis Center. 1989. Florida rivers assessment. Florida Department of Natural Resources, Tallahassee, FL. 452p.
- Friedemann, M. and J. Hand. 1989. Typical water quality values for Florida's lakes, streams, and estuaries. Florida Department of Environmental Regulation, Bureau of Surface Water Management, Tallahassee, FL. 23pp + appendix.
- Frydenborg, R. 1991. Water quality standards meeting, August 21. US EPA Region IV. Atlanta, GA.
- Frydenborg, R. and K.M. Lurding. 1994. Resource-effective lake bioassessments for the determination of nonpoint source impairment in Florida. (Abstract). *Lake and Reservoir Management* 9(2):75.
- Fulmer, D.G. and G.D. Cooke. 1990. Evaluating the restoration potential of 19 Ohio reservoirs. *Lake and Reservoir Management* 6(2):197-206.
- Furman, A.L., H.O. White, O.E. Cruz, W.E. Russell, and B.P. Thomas. 1975. Soil survey of Lake County area, Florida. U.S. Department of Agriculture, Soil Conservation Service.
- Gallant, A.L., T.R. Whittier, D.P. Larsen, J.M. Omernik, and R.M. Hughes. 1989. Regionalization as a tool for managing environmental resources. EPA/600/3-89/060. U.S. Environmental Protection Agency, Corvallis, Oregon. 152p.
- Gottgens, J.F. and T.L. Crisman. 1993. Quantitative impacts of lake-level stabilization on material transfer between water and sediment in Newnans Lake, Florida. *Canadian Journal of Fisheries and Aquatic Sciences* 50:1610-1616.

- Griffith, G.E. and J.M. Omernik. 1990. Mapping and regionalizing acid-sensitive surface waters of the United States. International Conference on Acidic Deposition: Its Nature and Impacts, Conference Abstracts. Royal Society of Edinburgh. p.447.
- Griffith, G.E., J.M. Omernik, C.M. Rohm, and S.M. Pierson. 1994. Florida regionalization project. EPA/600/Q-95-002. U.S. Environmental Protection Agency, Corvallis, OR. 83p.
- Grigg, D. 1965. The logic of regional systems. *Annals of the Association of American Geographers* 55:465-491.
- Hampson, P.S. 1984. Wetlands in Florida. U.S. Geological Survey, Florida Bureau of Geology Map Series No. 109. Tallahassee, FL.
- Hand, J. and M. Paulic. 1992. 1992 Florida water quality assessment, 305(b) technical appendix. Bureau of Surface Water Management, Florida Department of Environmental Regulation. Tallahassee, FL. 355p.
- Hand, J., J. Col, and E. Grimson. 1994. Southwest Florida district water quality 1994 305(b) technical appendix. Bureau of Surface Water Management, Florida Department of Environmental Protection. Tallahassee, FL. 122p.
- Harper, R.M. 1914. Geography and vegetation of northern Florida. Florida Geological Survey, 6th Annual Report. pp163-487.
- Havens, K.E., N.G. Aumen, R.T. James, V.H. Smith. 1996. Rapid ecological change in a large subtropical lake undergoing cultural eutrophication. *Ambio* 25(3):150-155.
- Head, C.M. and R.B. Marcus. 1984. The face of Florida. Kendall-Hunt, Dubuque, IA.
- Heath, R.C. and C.S. Conover. 1981. Hydrologic almanac of Florida. U.S. Geological Survey Open File Report 81-1107. Tallahassee, FL. 239p.
- Heiskary, S.A. 1989. Integrating ecoregion concepts into state lake management programs. In: Enhancing Lake Management Programs, Proceedings of the National Conference, May 12-13, 1988, Chicago, IL. pp.89-100.
- Heiskary, S.A. 1994. Use of the ecoregion framework for lake and watershed management in Minnesota. (Abstract). *Lake and Reservoir Management* 9(2):81.
- Heiskary, S.A. and C.B. Wilson. 1989. The regional nature of lake water quality across Minnesota: an analysis for improving resource management. *Journal of the Minnesota Academy of Sciences* 55(1):71-77.
- Hendry, C.D. Jr., and P.L. Brezonik. 1984. Chemical composition of softwater Florida lakes and their sensitivity to acid precipitation. *Water Resources Bulletin* 20(1):75-86.
- Hoyer, M.V. and D.E. Canfield, Jr. 1990. Limnological factors influencing bird abundance and species richness on Florida lakes. *Lake and Reservoir Management* 6(2):133-141.

- Hoyer, M.V., D.E. Canfield, Jr., C.A. Horsburgh, and K. Brown. 1996. Florida freshwater plants: A handbook of common aquatic plants in Florida lakes. University of Florida. 280p.
- Huber, W.C., P.L. Brezonik, J.P. Heaney, R.E. Dickinson., S.D. Preston, D.S. Dwornik, and M.A. DeMaio. 1983. A classification of Florida lakes. Two volumes. Final Report to the Florida Department of Environmental Regulation. ENV-05-82-1. Department of Environmental Engineering Sciences. University of Florida, Gainesville, FL.
- Hughes, R.M. 1989. Ecoregional biological criteria. In: Proceedings of an EPA Conference, Water Quality Standards for the 21st Century, Dallas, Texas, March 1989. pp.147-151.
- Hughes, R.M. 1995. Defining biological status by comparing with reference conditions. In: Biological Assessment and Criteria: Tools for Water Resource Planning and Decision Making. T.P. Simon and W. Davis (eds.). Lewis Publishing.
- James, R.T. 1991. Microbiology and chemistry of acid lakes in Florida: I. Effects of drought and post-drought conditions. *Hydrobiologia* 213:205-225.
- Jordan, C.L. 1984. Florida's weather and climate: implications for water. Chapter 3. In: Water Resources Atlas of Florida. E.A. Fernald and D.J. Patton (eds.). Florida State University, Tallahassee. pp.18-35.
- Kanciruk, P., J.M. Eilers, R.A. McCord, D.H. Landers, D.F. Brakke and R.A. Linthurst. 1986. Characteristics of lakes in the eastern United States. Volume III: Data compendium of site characteristics and chemical variables. EPA/600/4-86/007c. U.S. Environmental Protection Agency, Washington, D.C. 439p.
- Keller, A.E. and T.L. Crisman. 1990. Factors influencing fish assemblages and species richness in subtropical Florida lakes and a comparison with temperate lakes. *Canadian Journal of Fisheries and Aquatic Sciences* 47:2137-2146.
- King, P.B. and H.M. Biekman. 1974. Geologic map of the United States. Map scale 1:2,500,000. U.S. Geological Survey, Reston, VA.
- Klein, H.F., J. Armbruster, B.F. McPherson, and H.J. Freiburger. 1975. Water and the south Florida environment. U.S. Geological Survey Water Resources Investigations 75-24. Tallahassee, FL.
- Knapp, M.S. 1978a. Environmental Geology Series, Gainesville Sheet. Map Series No. 79. Florida Bureau of Geology, Tallahassee, FL.
- Knapp, M.S. 1978b. Environmental Geology Series, Valdosta Sheet. Map Series No. 88. Florida Bureau of Geology, Tallahassee, FL.
- Kunneke, T. and T.F. Palik. 1984. Northwestern Florida ecological characterization: an ecological atlas. Map narratives. U.S. Fish and Wildlife Service, FWS/OBS-82/47.1. 323p.
- Lane, E. 1986. Karst in Florida. Special Publication No. 29. Florida Geological Survey, Tallahassee, FL. 100p.

- Lane, E., M.S. Knapp, and T. Scott. 1980. Environmental Geology Series, Fort Pierce Sheet. Map Series No. 80. Florida Bureau of Geology, Tallahassee, FL.
- Loveland, T.R., J.W. Merchant, D.O. Ohlen, J.F. Brown. 1991. Development of a land-cover characteristics database for the conterminous U.S. *Photogrammetric Engineering and Remote Sensing* 57(11):1453-1463.
- McLane, W.M. 1955. The fishes of the St. Johns River system. PhD. Dissertation, University of Florida, Gainesville, FL.
- McDiffett, W.F. 1980. Limnological characteristics of several lakes on the Lake Wales Ridge, south-central Florida. *Hydrobiologia* 71:137-145.
- McPherson, B.F., G.Y. Hendrix, H. Klein, and H.M. Tyus. 1976. The environment of south Florida: a summary report. U.S. Geological Survey Professional Paper 1011. Washington, D.C. 77p.
- Miller, J.A. 1990. Ground water atlas of the United States, Segment 6, Alabama, Florida, Georgia, and South Carolina. Hydrologic Investigations Atlas 730-G. U.S. Geological Survey. 28p.
- Myers, V.B. and H.L. Edmiston. 1983. Florida lake classification and prioritization. Project #S004388: Final report. Florida Department of Environmental Regulation, Tallahassee. 77pp+ appendices.
- Omernik, J.M. 1987. Ecoregions of the conterminous United States. *Annals of the Association of American Geographers* 77(1):118-125.
- Omernik, J.M. 1994. Distinguishing between ecoregions, lake phosphorus regions, and lake management regions. (Abstract) *Lake and Reservoir Management* 9(2):101.
- Omernik, J.M. 1995. Ecoregions: A spatial framework for environmental management. In: *Biological Assessment and Criteria: Tools for Water Resource Planning and Decision Making*. W.S. Davis and T. Simon (eds.). Lewis Publishers. Boca Raton, FL. pp.49-62.
- Omernik, J.M. and R.G. Bailey. 1997 (in press). Distinguishing between watersheds and ecoregions. *Journal of the American Water Resources Association*.
- Omernik, J.M. and A.L. Gallant. 1990. Defining regions for evaluating environmental resources. In: *Global Natural Resource Monitoring and Assessments. Proceedings of the International Conference and Workshop, Venice, Italy*. pp.936-947.
- Omernik, J.M. and G.E. Griffith. 1991. Ecological regions vs. hydrological units: Frameworks for managing water quality. *Journal of Soil and Water Conservation* 46(5):334-340.

- Omernik, J.M., G.E. Griffith, J.T. Irish, and C.B. Johnson. 1988a. Total alkalinity of surface waters: a national map. Corvallis Environmental Research Laboratory, U.S. Environmental Protection Agency, Corvallis, OR.
- Omernik, J.M., D.P. Larsen, C.M. Rohm, and S.E. Clarke. 1988b. Summer total phosphorus in lakes: a map of Minnesota, Wisconsin, and Michigan, USA. *Environmental Management* 12(6):815-825.
- Omernik, J.M., C.M. Rohm, R.A. Lillie, and N. Mesner. 1991. Usefulness of natural regions for lake management: analysis of variation among lakes in northwestern Wisconsin, USA. *Environmental Management* 15(2):281-293.
- Palmer, S.L. 1984. Surface water. Chapter 5. In: *Water Resources Atlas of Florida*. E.A. Fernald and D.J. Patton (eds.). Florida State University, Tallahassee, FL. pp.54-67.
- Pascale, C.S., J.R. Wagner, and J.E. Sohm. 1978. Hydrologic, geologic, and water quality data, Ochlockonee River basin area, Florida. U.S. Geological Survey, Water Resource Investigation 70-97.
- Parker, G.G. et al., 1955. Water resources of southeastern Florida. U.S. Geological Survey Water Supply Paper No. 1255.
- Paulic, M. and J. Hand. 1994. Florida water quality assessment 1994 305(b) main report. Bureau of Surface Water Management, Florida Department of Environmental Protection. Tallahassee, FL. 261p.
- Pfischner, F.L., Jr. 1968. Relation between land use and chemical characteristics of lakes in southwestern Orange County, Florida. U.S. Geological Survey Professional Paper 600-B. pp.B190-B194.
- Pirkle, E.C. and H.K. Brooks. 1959. Origin and hydrology of Orange Lake, Santa Fe Lake, and Levys Prairie Lakes of north-central peninsular Florida. *Journal of Geology* 63(3):302-317.
- Pollman, C.D. and D.E. Canfield, Jr. 1991. Florida. In: *Acidic Deposition and Aquatic Ecosystems, Regional Case Studies*. D.F. Charles and S. Christie (eds). Springer-Verlag, New York. pp.367-416.
- Pride, R.W., F.W. Meyer, and R.N. Cherry. 1966. Hydrology of Green Swamp area in central Florida. Report of Investigations No.42. Florida Geological Survey, Tallahassee, FL. 137p.
- Puri, H.S. and R.O. Vernon. 1964. Summary of the geology of Florida and a guidebook to the classic exposures. Florida Geological Survey Special Publication No. 5. Tallahassee, FL. 312p.
- Readle, E.L. 1987. Soil survey of Putnam County area, Florida. U.S. Department of Agriculture, Soil Conservation Service.

- Schmidt, W. 1978. Environmental geology series, Pensacola sheet. Florida Department of Natural Resources, Bureau of Geology. Map Series No.78. Tallahassee, FL.
- Scott, T.M. 1978. Environmental geology series, Orlando sheet. Florida Department of Natural Resources, Bureau of Geology. Map Series No. 85. Tallahassee, FL.
- Scott, T.M. 1979. Environmental geology series, Daytona Beach sheet. Florida Department of Natural Resources, Bureau of Geology. Map Series No. 93. Tallahassee, FL.
- Scott, T.M. 1992. A geological overview of Florida. Florida Department of Natural Resources, Florida Geological Survey, Open File Report No. 50. Tallahassee, FL.
- Scott, T.M and P.L. MacGill. 1981. The Hawthorn formation of central Florida. Part I. Geology of the Hawthorn formation in central Florida. Report of Investigation No. 91. Florida Bureau of Geology, Tallahassee, FL.
- Scott, T.M., R.W. Hoenstine, M.S. Knapp, E. Lane, G.M. Odgen, Jr., R. Deuerling, and H.E. Neel. 1980. The sand and gravel resources of Florida. Report of Investigation No. 90. Florida Bureau of Geology, Tallahassee, FL. 41p.
- Scott, T.M., M.S. Knapp, M.S. Friddell, and D.L. Weide. 1986. Quaternary geologic map of the Jacksonville 4° x 6° quadrangle, United States. U.S. Geological Survey. Miscellaneous Investigations Series, Map I-1420 (NH-17). Scale 1:1,000,000.
- Scott, T.M., M.S. Knapp, and D.L. Weide. 1986. Quaternary geologic map of the Florida Keys 4° x 6° quadrangle, United States. U.S. Geological Survey. Miscellaneous Investigations Series, Map I-1420 (NG-17). Scale 1:1,000,000.
- Shafer, M.D., R.E. Dickinson, J.P. Heaney, and W.C. Huber. 1986. Gazeteer of Florida lakes. Florida Water Resources Research Center, Publication No. 96. University of Florida, Gainesville, FL.
- Shannon, E.E. and P.L. Brezonik. 1972. Limnological characteristics of north and central Florida lakes. *Limnology and Oceanography* 17:97-110.
- Sinclair, W.C. and J.W. Stewart. 1985. Sinkhole type, development, and distribution in Florida. Bureau of Geology Map Series No. 110. U.S. Geological Survey in cooperation with Department of Environmental Regulation, Bureau of Water Resources Management, Florida Department of Natural Resources. Tallahassee, FL.
- Smeltzer, E. and S.A. Heiskary. 1990. Analysis and applications of lake user survey data. *Lake and Reservoir Management* 6(1):109-118.
- Snell, L.J. and W.E. Kenner. 1974. Surface water features of Florida. U.S. Geological Survey, Florida Bureau of Geology Map Series No. 66. Stauffer, R.E. 1991. Effects of citrus agriculture on ridge lakes in central Florida. *Water, Air, and Soil Pollution* 59:125-144.
- Stauffer, R.E. and D.E. Canfield, Jr. 1992. Hydrology and alkalinity regulation of soft Florida waters: an integrated assessment. *Water Resources Research* 28(6):1631-1648.

- Sweets, P.R. 1992. Diatom paleolimnological evidence for lake acidification in the Trail Ridge region of Florida. *Water, Air, and Soil Pollution* 65:43-57.
- Thomas, B.P., E. Cummings, and W.H. Wittstruck. 1985. Soil survey of Alachua County, Florida. U.S. Department of Agriculture, Soil Conservation Service.
- Thomas, B.P., L. Law, Jr., and D.L. Stankey. 1979. Soil survey of Marion County area, Florida. U.S. Department of Agriculture, Soil Conservation Service.
- U.S. Department of Agriculture. 1914. Soil Survey of Bradford County, Florida. U.S. Department of Agriculture Bureau of Soils, in cooperation with Florida State Geological Survey.
- U.S. Department of Agriculture. 1927. Soil Survey, Polk County, Florida. U.S. Department of Agriculture Bureau of Chemistry, in cooperation with Florida State Geological Survey.
- U.S. Department of Agriculture. 1928. Soil Survey, Lake County, Florida. U.S. Department of Agriculture Bureau of Chemistry, in cooperation with Florida State Geological Survey.
- U.S. Department of Agriculture. 1954. Soil Survey, Alachua County, Florida. U.S. Department of Agriculture, Soil Conservation Service, in cooperation with University of Florida Agricultural Experiment Station.
- U.S. Department of Agriculture, Soil Conservation Service. 1985. 26 ecological communities of Florida. USDA-SCS, Gainesville, FL.
- Vernon, R.O. and H.S. Puri. 1964. Geologic map of Florida. Scale approx. 1:2,000,000. Division of Geology Map Series No. 18. U.S. Geological Survey in cooperation with Florida Board of Conservation, Tallahassee, FL.
- Welch, E. 1993. The case for lake quality standards. *Lake Line* 13(3):4.
- White, W.A. 1958. Some geomorphic features of central peninsular Florida. *Florida Geological Survey Bulletin* No. 41. Tallahassee, FL.
- White, W.A. 1970. The geomorphology of the Florida peninsula. Florida Department of Natural Resources, *Geological Bulletin* No. 51. Tallahassee, FL.
- Wilson, C.B. and W.W. Walker, Jr. 1989. Development of lake assessment methods based on the aquatic ecoregion concept. *Lake and Reservoir Management* 5(2):11-22.
- Wolfe, S.H., (ed.). 1989. An ecological characterization of the Florida Springs Coast - Draft. U.S. Fish and Wildlife Service, FWS/OBS-88/xx.x.
- Wolfe, S.H., J.A. Reidenauer, and D.B. Means. 1988. An ecological characterization of the Florida panhandle. U.S. Fish and Wildlife Service, Biological Report 88(12); Minerals Management Service OCS Study MMS 88-0063. 277p.

APPENDIX A
LAKE REGION MAPS AND GRAPHS

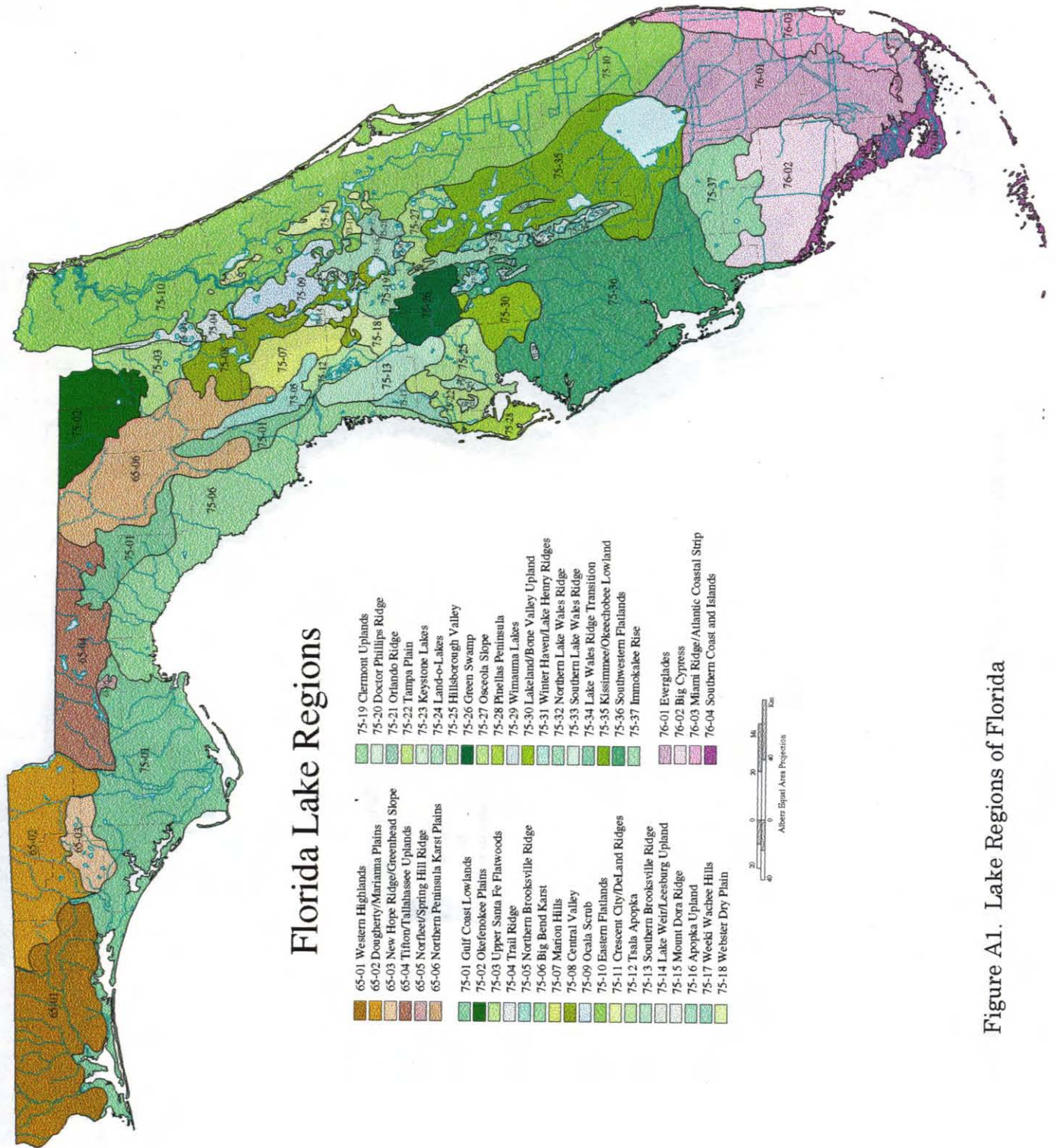


Figure A1. Lake Regions of Florida

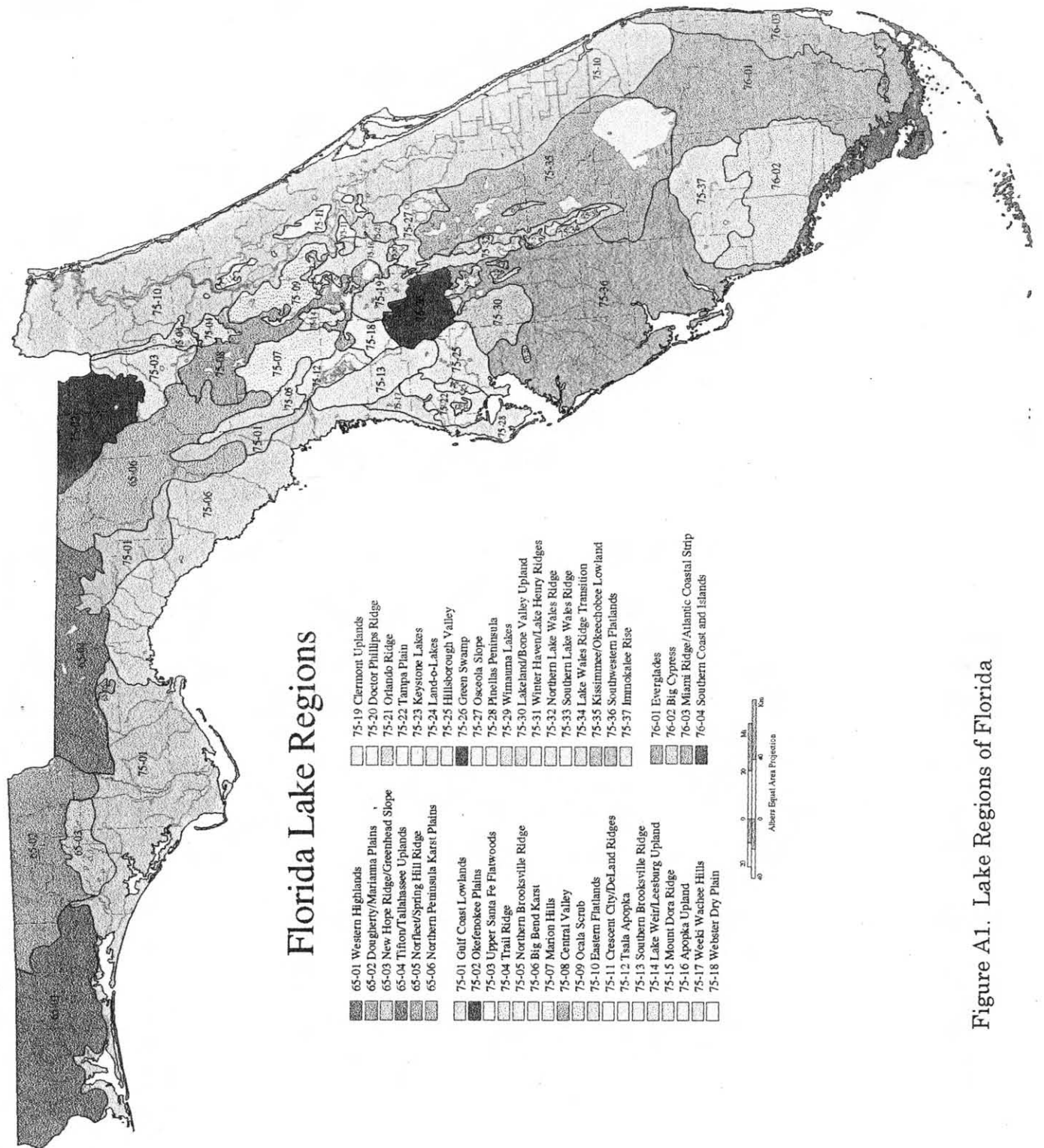


Figure A1. Lake Regions of Florida

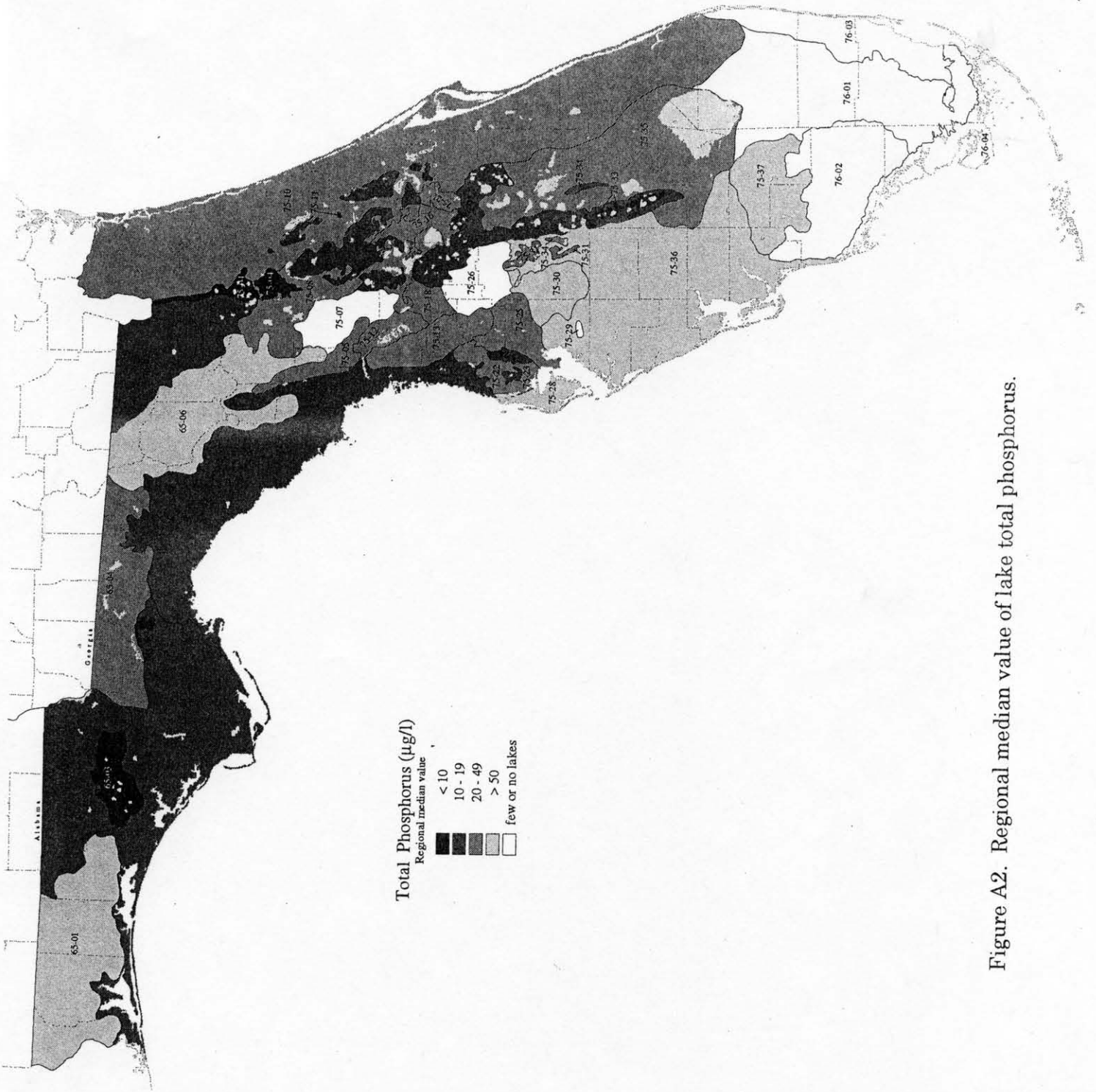


Figure A2. Regional median value of lake total phosphorus.

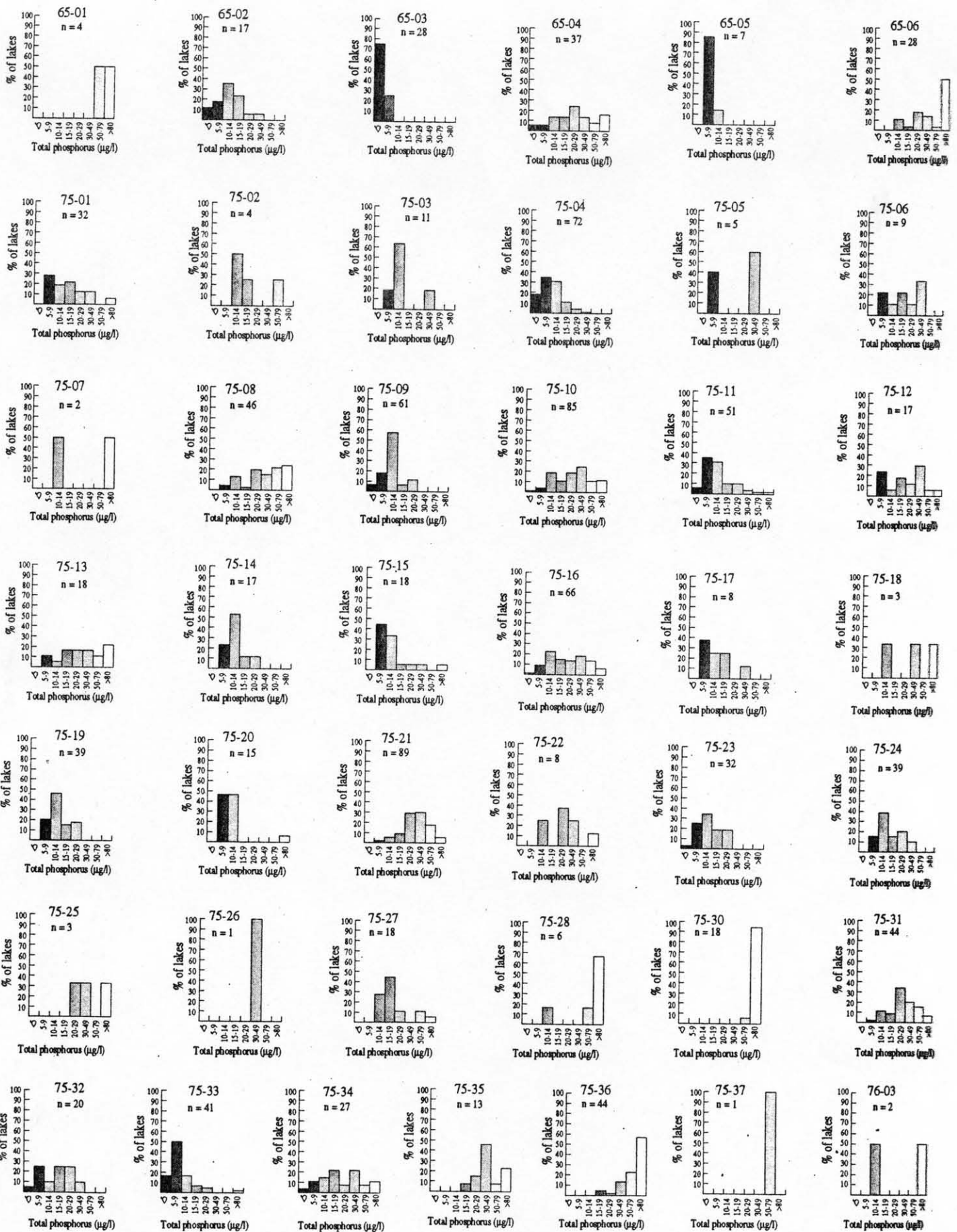


Figure A3. Distribution of lake phosphorus values by region (n=number of lakes sampled).

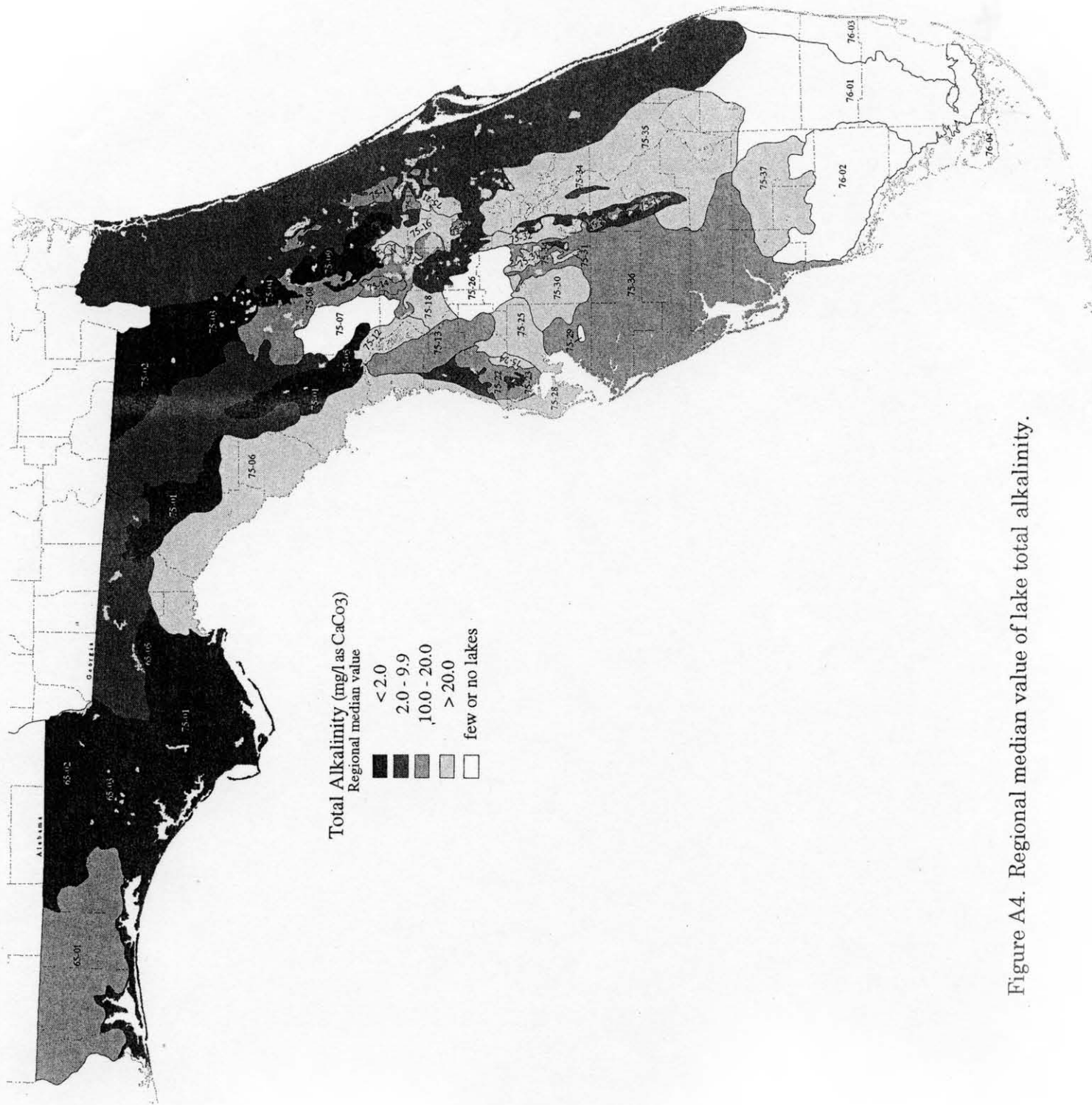


Figure A4. Regional median value of lake total alkalinity.

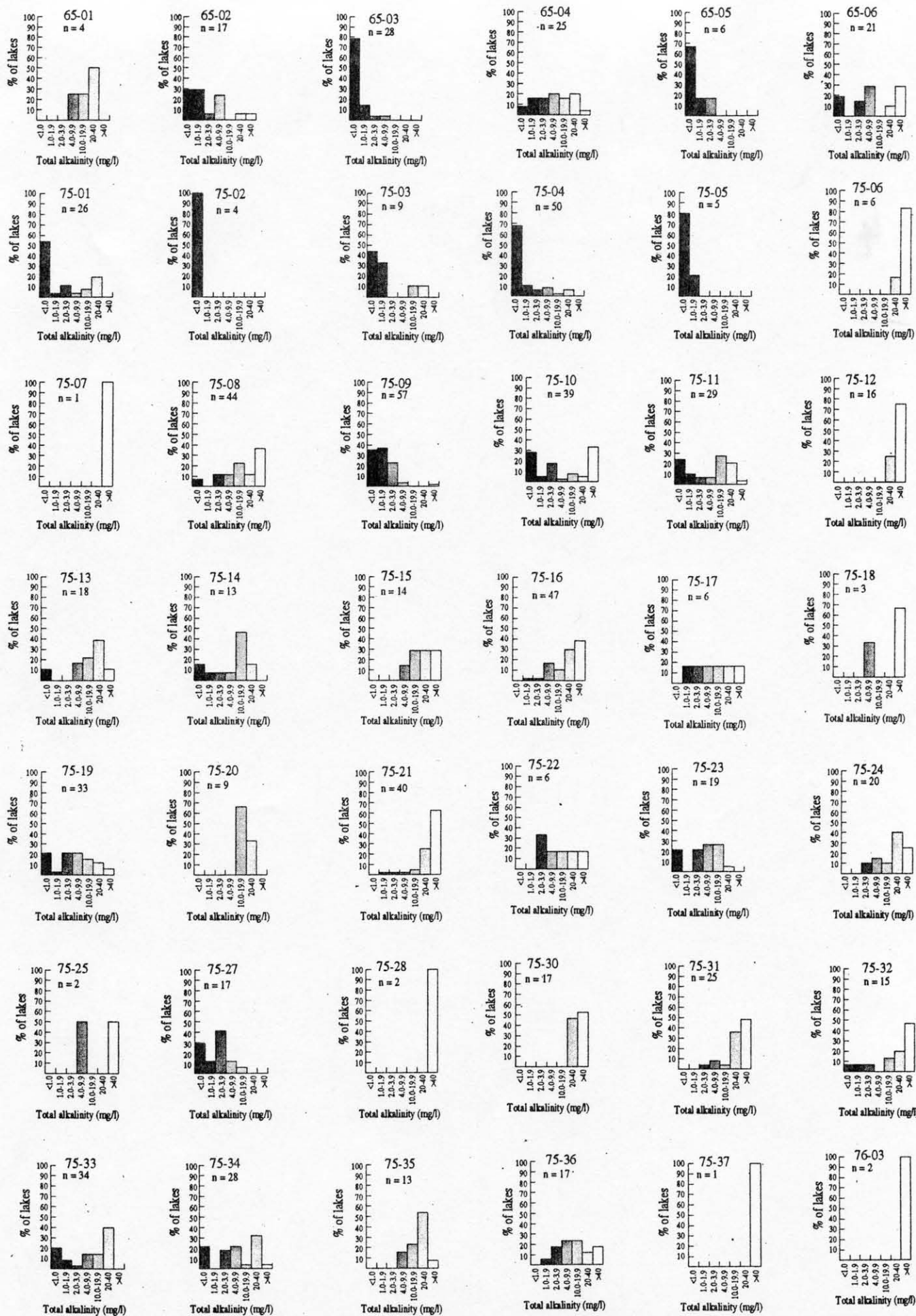


Figure A5 . Distribution of lake alkalinity values by region (n=number of lakes sampled).

APPENDIX B
SELECTED PARAMETERS FROM LAKE DATABASE

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
	Study	Region	Lake	County	Latitude DMS	Longitude DMS	pH	Total Alkalinity (mg/l)	Conductivity (µS/cm @ 25C)	Total Phosphorus (µg/l)	Total Nitrogen (µg/l)	Chlorophyll_a (µg/l)	Color (pcu)	Secchi (m)
1														
2	LW(6/96)	0	East Bay	Bay	30 05 34	85 32 50	-	-	-	16	328	4.3	-	2.4
3	LW(6/96)	0	North Bay	Bay	30 15 29	85 40 07	-	-	-	12	276	2.7	-	2.3
4	LW(6/96)	0	St. Andrew Bay	Bay	30 08 25	85 41 37	-	-	-	14	300	2.9	-	4.0
5	LW(6/96)	0	West Bay	Bay	30 15 55	85 47 18	-	-	-	14	309	3.6	-	2.0
6	LW(6/96)	0	Worth	Palm Beach	26 45 00	80 02 60	-	-	-	48	519	5.2	-	1.9
7	Regions	6501	Bear	Santa Rosa	30 51 51	86 49 49	7.9	20.0	50	91	657	27.5	15	1.0
8	Regions	6501	Hurricane	Okaloosa	30 56 19	86 45 18	8.2	21.0	51	79	570	21.1	14	1.7
9	Regions	6501	Karick	Okaloosa	30 53 45	86 38 38	7.0	9.6	33	70	417	14.8	15	1.5
10	Regions	6501	Stone	Escambia	30 57 55	87 17 27	7.4	13.0	42	135	637	28.4	19	1.4
11	Regions	6502	Back	Walton	30 44 31	86 08 35	6.7	6.1	36	16	497	10.8	12	1.5
12	Regions	6502	Blue	Washington	30 44 33	85 33 04	7.1	5.4	29	20	503	9.2	12	1.7
13	Regions	6502	Cassidy	Holmes	30 49 00	86 01 56	5.2	0.0	20	4	100	1.5	3	4.5
14	Canfield (1981)	6502	Charles Bay	Washington	30 44 26	85 40 42	5.0	1.9	11	14	473	2.5	45	1.5
15	Regions	6502	Compass	Jackson	30 43 14	85 23 13	6.3	0.7	18	3	200	2.0	6	3.9
16	Regions	6502	DeFuniak	Walton	30 43 02	86 06 46	6.4	1.7	20	6	303	3.7	5	3.3
17	LW(6/96)	6502	Haven	Walton	30 48 14	86 06 59	-	-	-	15	435	11.8	-	1.5
18	Canfield (1981)	6502	Jackson(Walton)	Walton	30 59 44	86 19 27	6.4	4.1	19	13	359	2.8	10	2.7
19	Regions	6502	Juniper	Walton	30 46 18	86 07 54	5.8	0.6	17	16	500	4.6	33	2.2
20	Regions	6502	Kings	Walton	30 46 60	86 11 39	6.2	1.4	16	11	433	5.1	9	-
21	Canfield (1981)	6502	Merritts Mill	Jackson	30 46 35	85 10 09	8.2	95.6	191	19	1497	1.1	2	-
22	Regions	6502	Ocheesee	Jackson	30 41 16	84 59 09	5.5	0.8	18	10	440	6.9	27	2.3
23	Regions	6502	Pate	Washington	30 41 44	85 44 33	4.7	0.0	20	8	270	4.5	37	1.3
24	Canfield (1981)	6502	Seminole	Gadsden	30 42 42	84 51 15	6.8	20.1	66	44	514	10.5	20	0.5
25	Summer '96	6502	Spring	Walton	30 45 06	86 03 40	6.2	1.4	15	-	510	12.1	10	-
26	Regions	6502	Stanley	Walton	30 44 16	86 08 14	6.4	2.7	28	8	440	4.9	18	2.3
27	Canfield (1981)	6502	Sun	Holmes	30 45 12	85 41 45	5.3	1.8	15	14	420	2.0	10	-
28	Canfield (1981)	6502	Victor	Holmes	30 56 54	85 53 54	6.4	6.1	25	12	294	2.9	15	2.7
29	EPA-ELS 1984	6503	(NO NAME)	3B1-098	30 29 32	85 48 40	6.6	1.5	23	3	-	-	10	5.0
30	EPA-ELS 1984	6503	BLACK	3B1-113	30 31 48	85 45 14	5.3	0.0	16	8	-	-	15	3.4
31	Regions	6503	Black Double	Washington	30 35 34	85 33 27	5.3	0.0	13	5	170	3.0	23	2.4
32	Regions	6503	Boat	Washington	30 32 07	85 36 26	4.5	0.0	31	1	40	0.6	1	-
33	Regions	6503	Bream	Washington	30 34 09	85 32 60	5.3	0.0	12	2	87	0.8	3	5.6
34	EPA-ELS 1984	6503	COMPASS	3B3-195	30 27 34	85 42 37	6.5	1.2	14	2	-	-	5	7.0
35	Regions	6503	Crystal	Washington	30 27 10	85 42 08	6.3	0.9	18	2	113	1.5	2	6.3
36	Canfield (1981)	6503	Dunford	Washington	30 33 08	85 40 59	5.0	1.0	15	7	220	0.8	6	5.0
37	Regions	6503	Gap	Washington	30 33 02	85 34 18	5.1	0.0	16	3	213	1.7	5	-
38	Regions	6503	Gin	Washington	30 34 22	85 33 01	5.4	0.0	12	3	217	2.3	9	3.0
39	Regions	6503	Hicks	Washington	30 33 22	85 42 39	5.1	0.0	18	2	230	1.5	4	3.7
40	EPA-ELS 1984	6503	HOMESTEAD POND	3B1-064	30 31 17	85 42 15	4.9	0.0	14	1	-	-	5	5.5
41	Regions	6503	Lighter Log	Washington	30 33 10	85 35 20	5.5	0.5	15	3	153	1.7	29	2.6
42	Regions	6503	Lucas	Washington	30 32 47	85 41 45	5.7	0.7	17	5	233	1.9	8	-
43	Regions	6503	McCormick	Jackson	30 38 13	85 20 01	5.4	0.0	16	6	100	1.6	3	-

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
	Study	Region	Lake	County	Latitude DMS	Longitude DMS	pH	Total Alkalinity (mg/l)	Conductivity (µS/cm@25C)	Total Phosphorus (µg/l)	Total Nitrogen (µg/l)	Chloro- phyll_a (µg/l)	Color (pcu)	Secchl (m)
1														
44	Regions	6503	McKenzie	Calhoun	30 30' 44"	85 18' 40"	4.7	0.0	19	2	187	1.9	9	3.4
45	Canfield (1981)	6503	Merial	Bay	30 23' 24"	85 40' 37"	4.7	0.4	19	6	64	0.5	0	3.2
46	Regions	6503	Mirrow	Calhoun	30 31' 15"	85 20' 32"	5.2	0.0	19	3	163	1.2	4	5.2
47	EPA-ELS 1984	6503	OPEN	3B1-022	30 29' 10"	85 42' 40"	5.0	0.0	15	2	-	-	5	3.3
48	Regions	6503	Owens	Washington	30 39' 49"	85 35' 37"	4.9	0.0	20	4	150	1.8	7	2.6
49	EPA-ELS 1984	6503	PAYNE	3B1-130	30 33' 25"	85 39' 55"	5.0	0.0	18	6	-	-	10	5.0
50	Regions	6503	Porter	Washington	30 30' 38"	85 32' 12"	5.0	0.0	16	3	193	1.8	4	3.5
51	Regions	6503	Round	Jackson	30 39' 12"	85 23' 33"	7.1	6.7	36	4	227	2.0	5	3.8
52	Regions	6503	Silver(Seventeen Mile)	Jackson	30 34' 40"	85 18' 50"	4.9	0.0	20	3	23	0.8	2	-
53	EPA-ELS 1984	6503	SPARKLEBERRY	3B1-025	30 27' 40"	85 31' 03"	5.7	0.0	11	1	-	-	5	0.9
54	Regions	6503	Stewart	Washington	30 32' 25"	85 42' 25"	6.8	1.6	17	2	60	0.9	3	-
55	Canfield&Hoyer1991	6503	Turkey Pen	Calhoun	30 33' 25"	85 17' 11"	4.7	0.4	21	2	132	1.0	1	3.2
56	Regions	6503	White Double	Washington	30 35' 19"	85 33' 33"	6.6	2.7	15	1	77	1.1	3	4.8
57	EPA-ELS 1984	6504	(NO NAME)	3B3-001	30 33' 18"	84 21' 17"	8.5	29.0	198	202	-	-	150	0.7
58	Regions	6504	Anderson	Madison	30 26' 49"	83 25' 37"	6.5	12.0	45	15	377	2.3	21	2.9
59	LW(6/96)	6504	Arrowhead	Leon	30 34' 00"	84 13' 03"	-	-	-	29	425	12.1	-	1.0
60	LW(6/96)	6504	Belmont	Leon	30 33' 01"	84 10' 45"	-	-	-	47	1130	22.9	-	0.9
61	Regions	6504	Blair	Madison	30 35' 23"	83 22' 53"	5.4	0.4	19	3	487	2.3	16	-
62	LW(6/96)	6504	Blairstone	Leon	30 24' 50"	84 15' 25"	-	-	-	71	1187	42.4	-	0.7
63	LW 93	6504	Blue Heron	Leon	30 36' 02"	84 14' 15"	7.4	20.0	57	26	610	11.6	15	-
64	LW(6/96)	6504	Bockus	Leon	30 35' 05"	84 13' 09"	-	-	-	16	399	4.3	-	1.8
65	LW(6/96)	6504	Carolyn	Leon	30 33' 06"	84 12' 25"	-	-	-	34	344	18.3	-	1.4
66	Regions	6504	Carr	Leon	30 34' 24"	84 17' 48"	6.5	6.7	27	25	717	12.2	20	1.3
67	Regions	6504	Cherry	Madison	30 36' 48"	83 24' 47"	6.1	0.7	40	27	543	21.5	6	1.2
68	Regions	6504	Cobb	Madison	30 31' 11"	83 25' 46"	5.7	1.2	15	10	423	3.9	28	1.4
69	LW 93	6504	Diane	Leon	30 35' 38"	84 14' 21"	6.9	4.9	31	7	277	2.0	6	-
70	LW(6/96)	6504	Elizabeth	Leon	30 29' 36"	84 17' 49"	-	-	-	24	336	13.3	-	3.7
71	LW(6/96)	6504	Etie	Leon	30 22' 05"	84 07' 46"	-	-	-	6	424	2.3	-	2.3
72	Summer '96	6504	Hall	Leon	30 31' 14"	84 14' 52"	6.8	3.4	26	10	300	1.5	6	5.8
73	Regions	6504	Hay Pond	Jefferson	30 36' 46"	83 49' 20"	6.3	1.1	11	21	533	31.1	8	-
74	Regions	6504	Iamonia	Leon	30 38' 01"	84 14' 48"	5.8	2.8	23	17	567	6.8	40	-
75	Regions	6504	Jackson	Leon	30 31' 47"	84 19' 40"	6.9	13.3	45	24	527	8.8	13	2.0
76	Summer '96	6504	Maclay	Leon	30 30' 57"	84 14' 47"	6.7	3.5	27	10	353	1.7	6	5.3
77	Regions	6504	Mays Pond	Jefferson	30 35' 31"	83 57' 11"	9.9	27.3	88	91	3323	124.1	157	0.3
78	Regions	6504	Miccosukee	Jefferson	30 33' 56"	83 58' 16"	6.0	5.0	26	17	443	5.8	25	1.9
79	LW 93	6504	Monkey Business	Leon	30 36' 21"	84 13' 56"	7.2	16.0	54	42	630	30.3	17	-
80	Regions	6504	Mystic	Madison	30 29' 00"	83 26' 36"	6.6	14.7	64	28	693	5.6	51	1.1
81	Summer '96	6504	Overstreet	Leon	30 31' 45"	84 15' 24"	5.9	1.6	19	11	287	1.4	8	3.6
82	LW(6/96)	6504	Petty Gulf	Leon	30 35' 24"	84 13' 46"	-	-	-	33	547	22.4	-	1.0
83	Regions	6504	Rachel	Madison	30 27' 31"	83 27' 57"	6.0	1.5	16	4	227	1.6	6	-
84	Regions	6504	Razor	Jefferson	30 36' 05"	83 45' 23"	8.0	69.0	152	26	780	3.5	11	-
85	Regions	6504	Rock Island	Madison	30 35' 41"	83 27' 44"	6.2	5.1	38	127	607	40.7	88	0.5

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Study	Region	Lake	County	Latitude DMS	Longitude DMS	pH	Total Alkalinity (mg/l)	Conductivity (µS/cm@25C)	Total Phosphorus (µg/l)	Total Nitrogen (µg/l)	Chlorophyll_a (µg/l)	Color (pcu)	Secchi (m)
86	LW(6/96)	6504	Shelly Pond	Leon	30 34 35	84 16 17	-	-	-	96	1057	41.5	-	0.9
87	Regions	6504	Silver	Jefferson	30 34 29	83 46 32	6.2	2.8	23	13	387	4.6	18	2.9
88	Regions	6504	Simpson	Jefferson	30 33 51	83 50 58	9.1	31.0	133	297	1593	170.6	77	0.7
89	Regions	6504	Sneads Smokehouse	Jefferson	30 36 42	83 43 17	6.0	5.1	24	31	620	15.5	40	-
90	LW(6/96)	6504	Sommerset	Leon	30 34 26	84 15 47	-	-	-	219	2008	216.3	-	0.5
91	LW(6/96)	6504	Tallavana	Gadsden	30 35 59	84 27 53	-	-	-	59	707	34.7	-	0.9
92	LW 93	6504	Talquin	Gadsden	30 26 23	84 34 10	8.2	22.0	114	50	580	16.6	27	-
93	LW(6/96)	6504	Wooten	Jefferson	30 23 58	83 59 25	-	-	-	16	490	7.6	-	2.0
94	Regions	6505	Andrew	Leon	30 24 04	84 24 25	5.3	0.0	14	5	197	2.7	12	-
95	Regions	6505	Dog	Leon	30 22 39	84 23 45	5.0	0.0	16	5	217	2.5	4	-
96	Regions	6505	Dog Pond	Leon	30 21 02	84 24 47	4.6	0.0	24	5	300	2.1	9	-
97	Canfield&Hoyer1991	6505	Loften	Leon	30 21 16	84 22 52	4.9	1.0	20	5	633	2.0	20	2.5
98	Regions	6505	Lost	Leon	30 21 45	84 23 11	5.6	0.2	17	11	257	3.9	11	-
99	Canfield&Hoyer1991	6505	Moore	Leon	30 23 31	84 24 13	5.8	2.2	17	5	353	3.0	19	5.3
100	LW(6/96)	6505	Trout Pond	Leon	30 20 02	84 23 14	-	-	-	7	307	3.6	-	2.5
101	EPA-ELS 1984	6506	(NO NAME)	3B3-060	29 19 55	82 28 05	8.4	74.0	153	12	-	-	15	2.5
102	Regions	6506	Alcyone	Hamilton	30 37 34	83 15 05	5.5	0.4	26	22	283	5.6	12	2.4
103	Regions	6506	Alligator	Columbia	30 10 05	82 37 51	7.2	26.3	77	136	1933	102.1	46	0.8
104	Regions	6506	Amber Jack	Hamilton	30 34 37	83 11 14	4.6	0.0	22	11	910	3.2	33	-
105	Regions	6506	Blue	Suwannee	30 11 25	82 55 48	5.8	4.0	52	178	903	0.9	333	0.5
106	Regions	6506	Burnetts	Alachua	29 47 27	82 28 08	6.9	21.0	117	334	1020	33.4	102	1.2
107	LW(6/96)	6506	Clear	Alachua	29 39 11	82 23 47	-	-	-	97	865	12.1	-	1.4
108	Regions	6506	DeSoto	Columbia	30 11 29	82 37 60	9.2	51.7	144	116	3083	300.5	70	0.3
109	LW(6/96)	6506	Forest	Hamilton	30 31 56	83 07 23	-	-	-	118	567	6.3	-	1.9
110	Regions	6506	Frances	Madison	30 27 57	83 24 26	8.3	80.7	169	111	1750	70.5	17	0.4
111	LW(6/96)	6506	Hammocks	Alachua	29 42 25	82 26 00	-	-	-	170	1044	36.7	-	1.2
112	EPA-ELS 1984	6506	HAVEN WINQUIPIN	3B3-168	29 33 54	82 45 03	6.5	2.4	38	28	-	-	175	0.6
113	Regions	6506	Jeffery	Columbia	30 12 34	82 41 34	5.8	0.8	39	13	597	5.6	64	1.5
114	Summer '96	6506	Kingswood	Alachua	29 40 49	82 24 19	6.5	6.8	71	20	655	5.5	45	-
115	Canfield (1981)	6506	Louise	Suwannee	30 19 05	82 52 40	6.4	5.0	46	22	632	6.5	42	1.8
116	Regions	6506	Low	Suwannee	30 13 16	82 50 09	5.8	2.4	52	296	937	4.7	242	0.6
117	Regions	6506	Mill Pond	Madison	30 28 22	83 24 00	6.7	8.0	38	23	540	13.1	16	2.8
118	LW(6/96)	6506	Mills Creek	Columbia	30 10 15	82 36 52	-	-	-	253	450	-	-	-
119	Regions	6506	Montgomery	Columbia	30 11 01	82 38 40	7.6	43.0	131	38	840	23.4	19	1.5
120	LW(6/96)	6506	Moon	Alachua	29 40 50	82 24 14	-	-	-	148	878	45.8	-	1.4
121	Regions	6506	Octahatchee	Hamilton	30 36 31	83 12 21	5.7	2.1	44	346	850	2.8	246	0.7
122	LW(6/96)	6506	Peacock	Suwannee	30 14 21	82 53 52	-	-	-	84	1286	39.3	-	1.3
123	Regions	6506	Prairie	Alachua	29 47 49	82 22 39	7.3	40.7	155	195	870	28.1	73	1.1
124	Regions	6506	Suwannee	Suwannee	30 22 51	82 56 57	6.5	6.7	48	49	983	37.9	36	0.9
125	LW(6/96)	6506	Timber	Hamilton	30 32 22	83 06 16	-	-	-	64	827	6.0	-	-
126	Regions	6506	Trout	Alachua	29 50 37	82 18 43	5.7	0.1	36	34	340	5.7	15	-
127	Regions	6506	Watertown	Columbia	30 11 34	82 35 54	8.7	42.0	136	32	1073	36.0	29	0.8

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Study	Region	Lake	County	Latitude DMS	Longitude DMS	pH	Total Alkalinity (mg/l)	Conductivity (µS/cm @25C)	Total Phosphorus (µg/l)	Total Nitrogen (µg/l)	Chloro- phyll_a (µg/l)	Color (pcu)	Secchl (m)
128	Regions	6506	White	Suwannee	30 14 52	82 54 51	6.6	7.1	46	15	357	4.6	20	-
129	Regions	7501	Adams	Lafayette	29 58 45	83 02 17	5.3	1.5	51	18	1367	2.3	499	0.4
130	Regions	7501	Andrews	Taylor	30 16 24	83 38 54	5.4	0.5	30	15	527	11.4	85	1.1
131	Regions	7501	Booze	Madison	30 22 48	83 19 55	3.9	0.0	67	31	1303	39.5	196	0.6
132	1-QAQC	7501	Bradford	Leon	30 24 09	84 20 29	5.0	0.2	24	18	518	8.5	121	0.4
133	LW(6/96)	7501	Camp Creek	Walton	30 17 48	86 03 22	-	-	-	6	381	3.0	-	1.2
134	LW(6/96)	7501	Campbell	Walton	30 21 55	86 17 20	-	-	-	5	354	2.5	-	2.9
135	LW(6/96)	7501	Cascade	Leon	30 25 10	84 21 38	-	-	-	15	671	8.3	-	0.7
136	Regions	7501	Christmas	Gilchrist	29 41 17	82 43 32	4.0	0.0	78	11	820	5.3	124	1.2
137	Canfield (1981)	7501	Corn Landing	Franklin	29 57 18	84 26 18	7.0	26.6	199	13	574	2.8	82	1.3
138	Canfield (1981)	7501	Dead	Calhoun	30 14 35	85 10 12	6.3	11.8	38	14	297	3.6	68	2.0
139	Canfield (1981)	7501	Deer Point	Bay	30 16 08	85 26 15	6.9	22.6	60	8	184	1.9	62	2.1
140	Regions	7501	Eilen	Wakulla	30 06 46	84 23 56	5.1	0.0	30	6	450	3.9	95	1.0
141	Regions	7501	Found	Leon	30 21 41	84 22 31	4.3	0.0	30	15	497	6.3	87	-
142	LW(6/96)	7501	Grassy	Leon	30 24 33	84 20 11	-	-	-	20	838	5.0	-	0.7
143	1-QAQC	7501	Hiawatha	Leon	30 24 36	84 20 53	4.5	0.0	31	20	625	9.3	129	0.4
144	Regions	7501	Jones	Livy	29 33 25	82 43 46	5.3	0.0	19	9	693	2.8	43	-
145	Canfield&Hoyer1991	7501	Koon	Lafayette	30 02 24	83 07 35	5.2	2.6	29	5	687	3.0	63	1.4
146	Regions	7501	Middle	Madison	30 22 54	83 19 27	3.9	0.0	65	41	1423	64.5	342	0.6
147	1-QAQC	7501	Minniehaha	Leon	30 24 50	84 21 01	4.6	0.0	30	15	720	11.5	126	0.4
148	Regions	7501	Munson	Leon	30 22 09	84 18 30	10.3	34.0	119	109	693	20.2	28	-
149	Canfield (1981)	7501	Otter	Wakulla	30 01 27	84 25 15	4.9	2.3	128	29	501	2.9	222	0.9
150	Canfield (1981)	7501	Oyster	Walton	30 21 08	86 14 43	6.6	18.8	4338	34	554	4.0	208	0.9
151	LW(6/96)	7501	Peach Creek	Walton	30 22 24	86 06 19	-	-	-	6	440	0.9	-	1.0
152	LW(6/96)	7501	Powell	Bay	30 16 07	85 58 49	-	-	-	14	422	4.3	-	1.7
153	Regions	7501	Ten Mile	Madison	30 17 08	83 18 55	5.6	0.5	23	6	807	6.2	48	1.9
154	Regions	7501	Townsend Pond	Lafayette	30 02 15	83 07 05	5.3	0.4	34	10	1070	4.2	206	0.7
155	Regions	7501	Waccasassa	Gilchrist	29 36 50	82 41 35	6.6	6.9	50	42	987	11.6	64	0.5
156	Regions	7501	Waters	Gilchrist	29 42 07	82 44 00	6.2	2.8	50	340	2500	21.1	521	0.1
157	Regions	7501	Waters Pond	Livy	29 33 10	82 42 52	5.2	0.0	36	16	983	10.0	248	0.8
158	Canfield (1981)	7501	Western	Walton	30 19 37	86 09 15	6.8	21.3	5636	6	289	1.3	141	1.7
159	Canfield (1981)	7501	Wimico	Gulf	29 48 16	85 16 19	6.8	21.3	126	28	493	3.9	113	0.5
160	Regions	7501	Winquippin	Livy	29 31 41	82 43 25	5.2	0.0	25	10	937	2.6	53	-
161	Regions	7502	Fisher	Union	30 04 02	82 22 45	4.4	0.0	70	13	1220	1.1	343	-
162	Regions	7502	Ocean Pond	Baker	30 13 37	82 26 13	4.7	0.0	40	16	383	7.4	120	0.8
163	Regions	7502	Palastine	Union	30 07 05	82 24 30	5.0	0.0	44	11	420	4.6	77	1.2
164	Regions	7502	Swift Creek	Union	30 07 30	82 17 53	4.7	0.0	56	61	1042	15.6	445	0.3
165	Regions	7503	Alto	Alachua	29 46 46	82 08 52	5.8	1.0	69	14	553	5.8	62	1.2
166	Regions	7503	Butler	Union	30 02 06	82 20 17	6.2	1.8	52	14	500	2.6	55	1.7
167	Regions	7503	Crosby	Bradford	29 56 38	82 09 26	5.4	0.3	64	11	637	11.1	43	1.8
168	LW(6/96)	7503	DeValerio	Bradford	29 54 27	82 10 19	-	-	-	33	678	11.4	-	1.0
169	Regions	7503	Hampton	Bradford	29 51 34	82 10 08	5.4	0.2	66	10	557	7.6	72	1.5