

Some Florida lakes failing the new numeric nutrient criteria

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The United States Environmental Protection Agency has set limits on the concentrations of total nitrogen (TN), total phosphorus (TP) and algal chlorophyll *a* (Chl-*a*) allowed in Florida lakes starting in March 2012. If one or more of the respective concentrations exceeds these criteria the lake is considered to be impaired due to pollution and subject to a variety of regulatory actions. We have used water quality data collected primarily by Florida LAKEWATCH to determine which lakes might be failing these numeric nutrient criteria. We looked at 952 Florida lakes with data on annual averages of TP, TN, and Chl-*a* plus data on color and alkalinity and found that 65% (614 lakes) failed one or more of the criteria for TP, TN or Chl-*a*. If we apply this percentage to the 7,700 Florida lakes, then about 5,000 Florida lakes will be on the official impaired list.

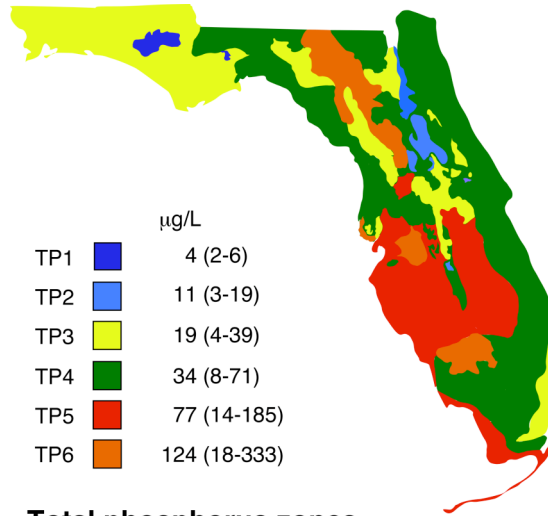
Criteria for Lakes*

Lake Color and Alkalinity	Chl- <i>a</i> (mg/L)	TN (mg/L)	TP (mg/L)
Colored Lakes > 40 PCU	0.020	1.27 [1.27-2.23]	0.05 [0.05-0.16]
Clear Lakes, High Alkalinity ≤ 40 PCU and Alkalinity > 20 mg/L CaCO ₃	0.020	1.05 [1.05-1.91]	0.03 [0.03-0.09]
Clear Lakes, Low Alkalinity ≤ 40 PCU and Alkalinity ≤ 20 mg/L CaCO ₃	0.006	0.51 [0.51-0.93]	0.01 [0.01-0.03]

* All concentrations are annual geometric means not to be surpassed more than once in a three-year period. Bracketed numbers reflect the range in which Florida can adjust the TN and TP criteria when data shows the lake is meeting the relevant Chl *a* criterion.

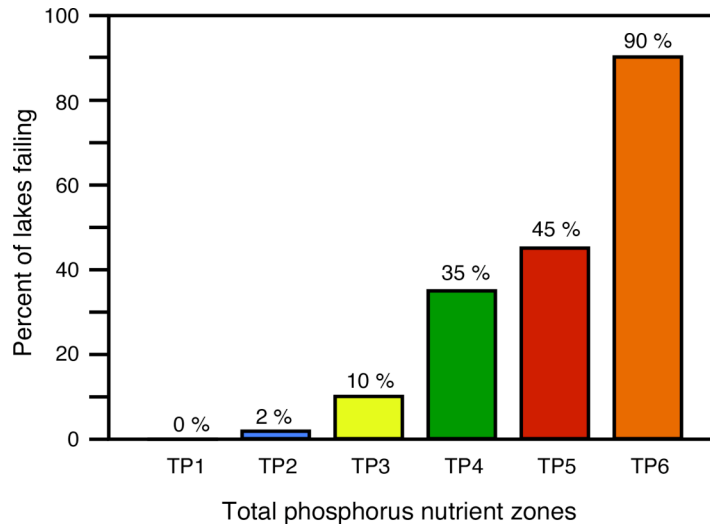
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In our opinion many lakes fail to meet the criteria because they are located in parts of the state that have natural deposits of phosphatic minerals in the soils. The following map shows the areas where lakes have varying amounts of total phosphorus in their waters due to natural factors. Because the EPA nutrient criteria do not take these geographic differences into account, the percent of lakes failing the criteria depends on the geographic location of the lakes rather than man-made pollution.



Total phosphorus zones

Florida lakes can be grouped into six nutrient zones for total phosphorus. In the key the geometric mean for the zone is given followed by the 95% range for the lakes in that zone. The units are in µg/L while the criteria are in mg/L. [20 µg/L is the same as 0.020 mg/L].



The percents of the lakes failing the EPA numeric nutrient criteria vary according to the nutrient zones in which the lakes are located.

For more information see videos at:

http://lakewatch.ifas.ufl.edu/Videos/Dan_video.html

http://lakewatch.ifas.ufl.edu/Videos/Roger_video.html

The following list is not official and does not consider all Florida lakes. If a lake is on the list, we have determined it most likely will fail a sampling program by the Florida Department of Environmental Protection. If a Florida lake is not on the list, it may either pass the standards or not have been sampled. A very large proportion of the 7,700 lakes do not have sufficient data to make a judgment on impairment.

Some Florida lakes failing the new numeric nutrient criteria

County	Lake		
Alachua	Alice	Citrus	Fort Cooper
Alachua	Bivans Arm	Citrus	Hampton
Alachua	Bonnet	Citrus	North
Alachua	Calf Pond	Citrus	Park
Alachua	Clear	Citrus	River Lake Manor
Alachua	Dean Pond	Citrus	Rousseau
Alachua	Elizabeth	Clay	Crystal
Alachua	Gwynn Oaks	Clay	Doctors
Alachua	Hammocks	Clay	Hall
Alachua	Hidden	Clay	Johnson
Alachua	Holden Pond	Clay	Little Crystal
Alachua	Holly Forest	Clay	Little Johnson
Alachua	Johnson Pond	Clay	Margie
Alachua	Kingswood	Clay	Pebble
Alachua	Little Orange	Clay	Smith
Alachua	Lochloosa	Clay	Twin
Alachua	Mize	Collier	Trafford
Alachua	Moon	Columbia	Alligator Lake
Alachua	Newnans	Columbia	Montgomery
Alachua	Orange	DeSoto	Suzy
Alachua	Potano Ponds	Duval	Fleet Landing
Alachua	Wauberg	Duval	Holly Oaks Lake
Bradford	Bedford	Duval	Willow
Bradford	Crosby	Flagler	Avalon
Bradford	Hampton	Flagler	Brandon
Bradford	Rowell	Flagler	Dead
Brevard	Fox	Gadsden	Tallavana
Brevard	Fox Lake	Gadsden	Talquin
Brevard	Lake Washington	Gadsden	Yvette
Brevard	Lake Winder	Glades	Okeechobee
Brevard	Palm	Hamilton	Oak
Brevard	Parkway Meadows	Hamilton	Perch Pond
Brevard	Poinsett	Hamilton	Timber
Brevard	South Lake	Hernando	Bystre
Broward	Alex	Hernando	Harris Pd (?)
Broward	Bonnet Slough	Hernando	Horse
Broward	Cliff	Hernando	May Prairie
Broward	Delevoe	Hernando	Neff
Broward	Holiday Park	Hernando	Tooke Lake ???
Broward	Markham	Highlands	Adelaide
Broward	North	Highlands	Apthorpe
Broward	Spring	Highlands	August
Charlotte	Cooter Pond	Highlands	Blue
Citrus		Highlands	Bonnet

Highlands	Byrd	Hillsborough	Hammock
Highlands	Charlotte	Hillsborough	Harvey
Highlands	Chilton	Hillsborough	Heather
Highlands	Clay	Hillsborough	Hickory Hammock
Highlands	Crews	Hillsborough	Hickory Manor North
Highlands	Damon	Hillsborough	Holly
Highlands	Denton	Hillsborough	Hunter
Highlands	Eagle Pond	Hillsborough	Island Ford
Highlands	Francis	Hillsborough	Jeanette
Highlands	Glenada	Hillsborough	June
Highlands	Grassy	Hillsborough	Little
Highlands	Henry	Hillsborough	Little Wilson
Highlands	Huckleberry	Hillsborough	Mango
Highlands	Huntley	Hillsborough	McComas
Highlands	Isis	Hillsborough	Mid
Highlands	Istokpoga	Hillsborough	Mirror
Highlands	Jackson	Hillsborough	Moores
Highlands	Josephine	Hillsborough	Morley
Highlands	June	Hillsborough	Morris
Highlands	Letta	Hillsborough	North Pond
Highlands	Little Bonnet	Hillsborough	Osceola
Highlands	Little Jackson	Hillsborough	Pine Pond
Highlands	Little Redwater 2	Hillsborough	Roberta
Highlands	Lotela	Hillsborough	Shangri-La
Highlands	Lynn	Hillsborough	Silver
Highlands	Million	Hillsborough	Stearn
Highlands	Olivia	Hillsborough	Stillwater
Highlands	Pearl	Hillsborough	Swan
Highlands	Persimmon	Hillsborough	Taylor
Highlands	Placid	Hillsborough	Taylor 2
Highlands	Redwater	Hillsborough	Ten Mile
Highlands	Trout	Hillsborough	Thonotosassa
Highlands	Wolf	Hillsborough	Valrico
Hillsborough	Boot	Hillsborough	Virginia
Hillsborough	Buck	Hillsborough	Walden
Hillsborough	Carlton	Hillsborough	Wastena
Hillsborough	Carlton 2	Hillsborough	Weeks
Hillsborough	Cooper	Hillsborough	Wilson
Hillsborough	Cove	Hillsborough	Wimauma
Hillsborough	Crescent	Indian River	Blue Cypress
Hillsborough	Crystal	Indian River	Farm 13
Hillsborough	Dead Lady	Indian River	Shores
Hillsborough	Deer	Indian River	Stick Marsh
Hillsborough	Dorothy	Jackson	Thompson pd
Hillsborough	Dosson	Lake	Akron
Hillsborough	East	Lake	Bay
Hillsborough	Edna	Lake	Bear
Hillsborough	Estes	Lake	Bear 2
Hillsborough	Fantasia	Lake	Beauclair
Hillsborough	Fleur de Lis	Lake	Clear
Hillsborough	Forest	Lake	Cook
Hillsborough	Gornto	Lake	Denham
Hillsborough	Grady	Lake	Dora

Lake	Eagle	Leon	Longleat
Lake	Emeralda	Leon	Mattie
Lake	Eustis	Leon	McBride
Lake	Florence	Leon	McCord Pond
Lake	Gracie	Leon	Meginnis Arm
Lake	Griffin	Leon	Mitchell Arm
Lake	Harris	Leon	Monkey Business
Lake	Hermosa	Leon	Moore 2
Lake	Heron	Leon	Munson
Lake	Horseshoe	Leon	Overstreet
Lake	Idamere	Leon	Petty Gulf
Lake	Lake Macy	Leon	Pine Hill
Lake	Little Harris	Leon	Piney Z
Lake	Loch Leven	Leon	Sheelin
Lake	Lorraine	Leon	Shelly Pond
Lake	Louisa	Leon	Spring Pond
Lake	Norris	Leon	Summerset
Lake	Royal	Leon	Susan
Lake	Silver	Leon	Tom John
Lake	Sunset	Leon	Weeks
Lake	Trout	Leon	Windermere
Lake	Yale	Madison	Cherry Lake
Lee	Dunes	Marion	Bryant
Lee	Gulf Pines	Marion	Buck Lake
Lee	Gulf Shores	Marion	Charles
Lee	Gumbo Limbo	Marion	DeLancy
Lee	Lady Finger	Marion	Horseshoe
Lee	Little Murex	Marion	Island
Lee	Little Portion	Marion	Joes
Lee	Murex	Marion	Kerr
Lee	Roseate	Marion	Lillian
Lee	Sea Oats	Marion	Little Kerr
Lee	St. Kilda	Marion	Little Weir
Lee	Venus	Marion	Mill Dam
Leon	Arrowhead	Marion	Mill Pond
Leon	Belmont	Marion	Pegram
Leon	Blairstone	Marion	Redwater Lake
Leon	Blue Heron	Marion	Weir
Leon	Chapman Pond	Miami-Dade	Coconut
Leon	Coolview Pond	Miami-Dade	Glade
Leon	Diane	Miami-Dade	Snook Pond
Leon	Eightmile pd	Monroe	Key West Pond
Leon	Elizabeth	Okaloosa	Bass
Leon	Gannett Pond	Okaloosa	Coleman
Leon	Goose Pond	Okaloosa	Kell-Aire
Leon	Griffin	Okaloosa	Quail
Leon	Hall	Okaloosa	Spring
Leon	Harriman Pond	Orange	Adair
Leon	Jackson	Orange	Apopka
Leon	Jean	Orange	Arnold
Leon	Kanturk	Orange	Bass Lake
Leon	Killarney	Orange	Bay
Leon	Lee	Orange	Butler

Orange	C	Orange	Rabama
Orange	Carlton	Orange	Richmond
Orange	Cherokee	Orange	Rock
Orange	Clear	Orange	Rose
Orange	Como	Orange	Rose Hill
Orange	Concord	Orange	Rowena
Orange	Copeland	Orange	Sandy
Orange	Crystal	Orange	Santiago
Orange	Cypress	Orange	Sawyer
Orange	Daniel	Orange	Silver
Orange	Davis	Orange	Spring
Orange	Dot	Orange	Sybelia
Orange	Druid	Orange	Tennessee
Orange	Eola	Orange	Theresa
Orange	Estelle	Orange	Underhill
Orange	Floy	Orange	Wade
Orange	Formosa	Orange	Walker
Orange	Gatlin	Orange	Waumpi
Orange	Gear	Orange	Weldona
Orange	Gem	Orange	William Davis
Orange	Giles	Orange	Willisaria
Orange	Greenwood	Orange	Winyah
Orange	Highland	Osceola	Center
Orange	Holden	Osceola	Cypress
Orange	Horseshoe	Osceola	East Tohopekaliga
Orange	Hourglass	Osceola	Fish
Orange	Killarney	Osceola	Hatchineha
Orange	Lake Anderson	Osceola	Jackson
Orange	Lake Gandy	Osceola	Kissimmee
Orange	Lake Jennie Jewel	Osceola	Lake Russell
Orange	Lake Osceola	Osceola	Marian
Orange	Lake Tyner	Osceola	Tohopekaliga
Orange	Lake Warren	Palm Beach	God's
Orange	Lancaster	Palm Beach	Island
Orange	Lawne	Palm Beach	Julie
Orange	Lawsona	Palm Beach	Lake Clarke (retention pd)
Orange	Lorna Doone	Palm Beach	Lake Ida (retention pd)
Orange	Lotta	Palm Beach	Lake Okeechobee
Orange	Love	Palm Beach	Osborne
Orange	Lucerne	Palm Beach	Santee
Orange	Lurna	Pasco	Christina
Orange	Margaret	Pasco	Conley
Orange	Marshall	Pasco	Genesis
Orange	Mary Jane	Pasco	Jerome
Orange	Minnehaha	Pasco	Karney
Orange	Mud Lake (near Nona)	Pasco	Little Black
Orange	Olive	Pasco	Nash
Orange	Olivia	Pasco	Parker
Orange	Orlando	Pasco	Seminole
Orange	Park	Pasco	Tampa
Orange	Pearl	Pinellas	Allen
Orange	Pineloch	Pinellas	Alligator
Orange	Primavista	Pinellas	Allison

Pinellas	Clearview	Polk	Henry
Pinellas	Constance	Polk	Hollingsworth
Pinellas	Country Woods	Polk	Howard
Pinellas	Crescent	Polk	Hunter
Pinellas	Egret	Polk	Ida
Pinellas	Flamingo	Polk	Idylwild
Pinellas	Gardenia	Polk	Jessie
Pinellas	Helena	Polk	John
Pinellas	Heron	Polk	Josephine
Pinellas	Loch Haven	Polk	Lake Buckeye
Pinellas	Lucerne	Polk	Lake Daisy
Pinellas	Maggiore	Polk	Lake Deeson
Pinellas	Moccasin	Polk	Lake Lena
Pinellas	Pine Oak	Polk	Lake Lowrey
Pinellas	Placid	Polk	Lake Mariam
Pinellas	Placido	Polk	Lake Mcleod
Pinellas	Rainbow	Polk	Lake Swoope
Pinellas	Seminole	Polk	Little Bass
Pinellas	Sylvia	Polk	Little Elbert
Pinellas	Tarpon	Polk	Livingston
Pinellas	Taylor	Polk	Lost
Pinellas	Turtle	Polk	Lulu
Polk	Annie	Polk	Mabel
Polk	Arbuckle	Polk	Marianna
Polk	Ariana	Polk	Marion
Polk	Banana	Polk	Mattie
Polk	Banana Pit South	Polk	Maude
Polk	Bentley	Polk	May
Polk	Beulah Lake	Polk	Mirror
Polk	Big Bass	Polk	Mountain 2
Polk	Blue	Polk	Mud (near Polk City)
Polk	Blue 2	Polk	Parker
Polk	Boca Cove	Polk	Patrick
Polk	Bonnet	Polk	Pierce
Polk	Bonny	Polk	Pollock
Polk	Buffum	Polk	Reedy
Polk	Cannon	Polk	Ring
Polk	Clark	Polk	Rochelle
Polk	Clinch	Polk	Rosalie
Polk	Conine	Polk	Shipp
Polk	Crago	Polk	Smart
Polk	Deer	Polk	St. Anne
Polk	Eloise	Polk	Symphony
Polk	Engle Lake	Polk	Wales
Polk	Eva	Putnam	Anderson Cue
Polk	Fauna	Putnam	Ashley
Polk	Flora	Putnam	Brantley
Polk	Garfield	Putnam	Brantley 2
Polk	Gaskin's Cut	Putnam	Clearwater
Polk	Gibson	Putnam	Clearwater 2
Polk	Haines	Putnam	Crescent
Polk	Hamilton	Putnam	East Twin
Polk	Hancock	Putnam	Enslow

Putnam	Faye	Seminole	Lake Harriet
Putnam	George	Seminole	Lake Pickett
Putnam	Georges	Seminole	Lotus
Putnam	Goose	Seminole	Marion
Putnam	Lagonda	Seminole	Mill Lake
Putnam	Little Clearwater 2	Seminole	Mills
Putnam	McMeekin	Seminole	Minnie
Putnam	Morris	Seminole	Monroe
Putnam	North Twin	Seminole	Mullet
Putnam	Redwater	Seminole	Orienta
Putnam	Riley	Seminole	Orienta 2
Putnam	Rocky	Seminole	Pearl Lake
Putnam	Ross	Seminole	Queens Mirror
Putnam	Rowan	Seminole	Rock
Putnam	Silver 2	Seminole	Rogers
Putnam	Silver 3	Seminole	Searcy
Putnam	South Bull Pond	Seminole	Spring
Putnam	Spring	Seminole	Sprng Lake
Putnam	Stella	Seminole	Wildwood
Putnam	Suggs	Seminole	Woodlake
Putnam	Tucker	Seminole	Woods
Santa Rosa	Bear	Seminole	Yvonne-2
Sarasota	Eagle	St Lucie	Ann
Sarasota	Long	St Lucie	De Witt
Sarasota	Loon	St Lucie	Laguna
Sarasota	Rivendel	St Lucie	Mile
Sarasota	Upper Myakka	St Lucie	Tozour
Sarasota	Woodmere	Sumter	Big Gnat Lake
Seminole	Adelaide	Suwannee	Lowe
Seminole	Alma	Suwannee	Peacock
Seminole	Amory	Suwannee	White
Seminole	Banana	Taylor	Jaycee Pond
Seminole	Bath	Volusia	Ashby
Seminole	Bear Gully	Volusia	Basswood
Seminole	Bel-Air	Volusia	Beresford
Seminole	Brantley	Volusia	Bethel
Seminole	Charm	Volusia	Dexter
Seminole	Concord	Volusia	Harney
Seminole	Cranes Roost	Volusia	Lake Woodruff
Seminole	Crescent	Volusia	Lindley
Seminole	Deep	Volusia	Molly
Seminole	Dot	Volusia	Offspring
Seminole	East	Volusia	Shaw
Seminole	Emily	Volusia	Spring Garden
Seminole	Florence	Volusia	Theresa
Seminole	Florida	Wakulla	Otter
Seminole	Forest	Walton	Oyster
Seminole	Fruitwood	Walton	Spring
Seminole	Griffin	Walton	Stewart
Seminole	Howell	Washington	Bonnet Pond
Seminole	Island Pond		
Seminole	Jane		
Seminole	Jesup		