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1. Lake Panasoffkee Restoration Council Enacting Legislation and Membership
2. Florida Fish and Wildlife Conservation Commission Fish Population Study

EXECUTIVE SUMMARY

Introduction

Lake Panasoffkee, in Sumter County, is the third largest of approximately 1,800 lakes in west central Florida, and is a regionally important environmental and economic State resource as indicated by the following designations:

- Identified by the Florida Department of Environmental Protection as an Outstanding Florida Water
- Included on the Southwest Florida Water Management District's Surface Water Improvement and Management (SWIM) Priority Water Body List
- Nationally recognized as a freshwater fishing destination, especially for redear sunfish

Although, fishing remains popular at Panasoffkee, the lake's future as an important statewide recreational resource is threatened. The fisheries there have declined considerably during the last 30 to 40 years. In the mid-1950s, when the lake's fishery was first being studied, at least 15 fish camps operated there. In 1998, only three fish camps remained.

As in 1998, the threat to Lake Panasoffkee continues to be the loss of desirable fish habitat. Since the 1940s, there has been significant loss of necessary fish bedding areas and open water through the build-up of sediment, and these areas have become overgrown with emergent vegetation. Under seasonal low water conditions, portions of the lake become un-navigable. Unlike many threatened Florida lakes, water quality is good at Lake Panasoffkee, mostly due to substantial groundwater flows into the lake from the Floridan Aquifer. Ironically, groundwater is also the major source of sediment filling in the lake. When groundwater, which carries large amounts of dissolved calcium carbonate, mixes with lake water, the calcium carbonate solidifies, producing sediments that settle on the lake bottom, covering fish spawning areas. These factors have combined to negatively impact the lake's fishery and to promote increased shoreline vegetation and tussock formations, thus limiting recreation and navigation.

Lake Panasoffkee Restoration Council

Concerned for the health of Lake Panasoffkee, the 1998 Florida Legislature passed Chapter 98-69, Laws of Florida, creating the Lake Panasoffkee Restoration Council (Council) within the Southwest Florida Water Management District (District). Through the enabling legislation, the Legislature directed the Council to develop a restoration plan for Lake Panasoffkee and to report to the Legislature before November 25 of each year. The annual Report to the Legislature is required to provide the progress made toward the Lake Panasoffkee Restoration Plan and any recommendations for the next fiscal year.

The Council's 1998 Report to the Legislature identified management issues, restoration strategies and goals to restore Lake Panasoffkee. Since 1998, the Council has reported to the Legislature every year, and although the Council refined the Restoration Plan in its 2001 Report to the Legislature, the restoration strategy has always focused on a multi-step dredging project to restore fisheries habitat, shoreline, and navigation.

This 2003 Report provides the required progress report for 2003 and recommendations for the upcoming year. As in previous reports, this information is included in Chapters 3 and 4,

respectively. Chapter 1 provides an overview of the Lake and the Council and Chapter 2 identifies the management issues, strategies, and goals of the Lake Panasoffkee Restoration Plan.

Progress Report

The 2002 Report to the Legislature identified the following Restoration Steps of the Lake Panasoffkee Restoration Plan:

- Step 1 - Coleman Landing Pilot Project (completed in December 2000)
- Step 2 - Dredge to hard bottom
- Step 3 – Dredge East-side emergent zone
- Step 4 – Dredge between the 34-foot and 35-foot contour
- Step 5 – Canals

Since the 2002 Report to the Legislature, the Council has made significant progress in implementing the Restoration Plan. As of submittal of this report, the Council is ready to begin dredging along the eastern and western shoreline, identified as Steps 2 and 3 in the Lake Panasoffkee Restoration Plan. Dredging of these two steps are paramount to accomplishing the Council's goals to restore historic fish spawning beds and the lake shoreline and improve navigation.

The Council's recommendations in its 2002 Report to the Legislature, included soliciting bids for Steps 2, 3, and 4, and re-evaluating the cost verses the environmental benefit of Step 4. Bids to construct the upland spoil disposal area and dredge Steps 2, 3, and 4 were received. The lowest total bid amount for Steps 2, 3, and 4 was \$24,627,895 and the cost to dredge Step 4 was \$2,000,000.

The Council, at its meeting on August 25, 2003, evaluated the environmental benefits of Step 4 relative to the cost of \$2,000,000 for dredging. Dredging of the area included in Step 4 does not provide significant benefits to fish spawning areas nor does this Step result in the removal of substantial amounts of sediments for the cost. Further, funds are not currently available to fully implement the dredging of Steps 2 and 3 that are necessary to achieve the primary goals of the Restoration Plan. Therefore, the Council voted unanimously to delete *Step 4 – Dredge between the 34-foot and 35-foot contour* from the Restoration Plan. The dredging sequence was re-numbered to account for the deletion of Step 4.

Refined Restoration Steps of the Lake Panasoffkee Restoration Plan per the 2003 Report to the Legislature:

- Step 1 - Coleman Landing Pilot Project (completed in December 2000)
- Step 2 - Dredge to hard bottom
- Step 3 – Dredge East-side emergent zone
- Step 4 – Canals

Based on the lowest qualified bid, the total cost to dredge Steps 2 and 3 is \$22,627,895. As of October 1, 2003, the District has \$16,057,033 available toward the cost of \$22,627,895. An agreement with the dredging contractor has been negotiated such that the District may authorize dredging of Steps 2 and 3 in phases as additional funding becomes available. Currently, there is a \$6,570,862 shortfall to complete the Council's Lake Panasoffkee Restoration Plan.

The District closed on the land for the spoil disposal site on September 17, 2003, thus completing one of the last major prerequisites to begin dredging Steps 2 and 3. The agreement

with the dredging contractor has been executed and a pre-construction meeting was held on November 12, 2003. A ground-breaking ceremony at the spoil disposal site is expected by mid-December to kick-off construction of the spoil disposal area. Construction of the approximately 400-acre spoil disposal area is scheduled for completion in June 2004. Installation of the spoil disposal pipeline will occur concurrently with the construction of the spoil disposal area and dredging of Step 2 is scheduled to begin by July 2004.

Updated Project Costs

The refined sequence and updated costs for the Restoration Steps are shown in Table E-1. Costs for each step include costs for design, permitting, construction management, submerged aquatic vegetation (SAV) monitoring, and dredging. In-kind costs incurred by the District, Florida Fish and Wildlife Conservation Commission, and the Florida Department of Environmental Protection for water quality and fisheries monitoring and project management are not included.

Table E-1. Restoration Steps showing acreage, sediment volume, and costs

Restoration Step	Area Acres	Volume Cu. Yards	Total Contracted Costs
Step 1 - Coleman Landing Pilot Project ¹	24.5	138,035	\$760,007
Step 2 - Dredge to Hard Bottom ²	915	3,442,071	\$12,050,894
Step 3 - Dredge East-side Emergent Zone ²	1,062	4,767,664	\$11,949,246
Step 4 - Canals ³	34	162,000	\$961,000
Total			\$25,721,147

Notes:

1. Step 1 was completed in December 2000. Costs include reclamation costs for the spoil disposal site.
2. Costs for design, permitting, SAV monitoring, mobilization, contingency, and site work have been prorated between Steps 2 and 3.
3. Estimates for the canals are taken from the 2001 Report to the Legislature. In October 2001, the Council allocated \$200,000 to Sumter County toward implementation of this step.

Recommendations

In addition to deleting *Step 4 – Dredging between the 34-foot and 35-foot contours*, the Council's recommendations for the next year focus on tasks necessary to complete implementation of the Lake Panasoffkee Restoration Plan. The most critical of which is to secure the funds necessary to complete dredging of Steps 2 and 3.

The total cost to dredge Steps 2 and 3 is \$22,627,895. As of October 1, 2003, the District has \$16,057,033 available toward the cost of \$22,627,895. This leaves an approximately \$6,570,862 shortfall to complete the Council's Lake Panasoffkee Restoration Plan.

Since 1998, the Council has been dedicated to carrying out the Lake Panasoffkee Restoration Plan. This dedication is witnessed by the fact that five of the original seven members appointed in 1998 continue to serve on the Council. The Council recognizes and appreciates the support of the Legislature since 1998 as demonstrated by state appropriations totaling \$14,795,000.

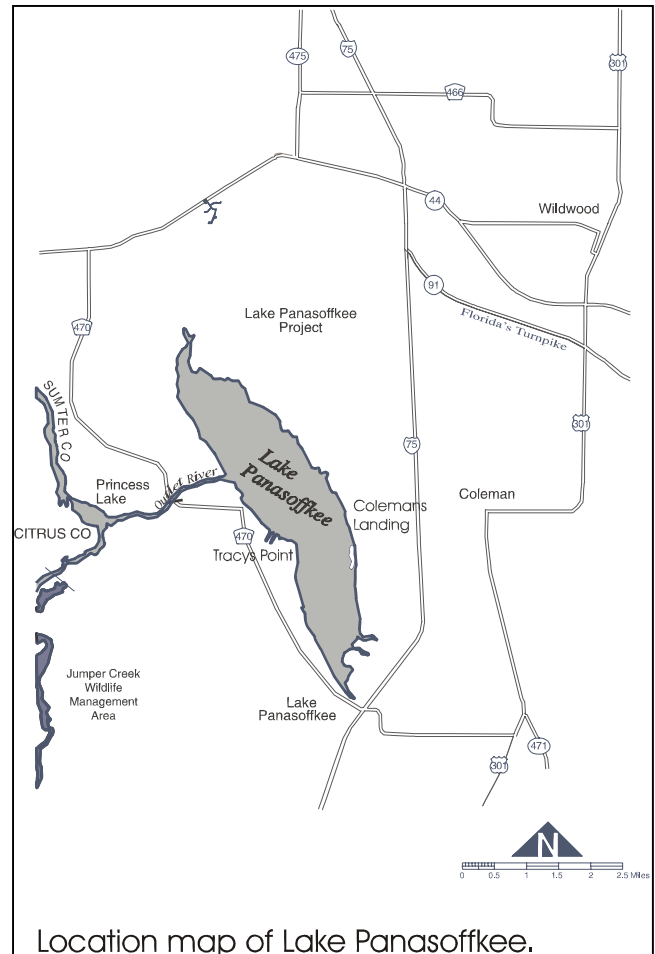
The Council has been very conservative and pragmatic in approval of the goals and spending for the Lake Panasoffkee Restoration Project. As the Council embarks on the last major phase of the Lake Panasoffkee Restoration Plan, the Council is hopeful that the Legislature will provide the funding necessary to complete the restoration of this very important environmental and recreational resource.

CHAPTER 1 - INTRODUCTION

Lake Panasoffkee

Lake Panasoffkee in Sumter County is designated by the Florida Department of Environmental Protection as an Outstanding Florida Water and is the third largest of the approximately 1,800 lakes in west central Florida. Additionally, the lake is included on the Southwest Florida Water Management District's Surface Water Improvement and Management (SWIM) Priority Water Body List. Lake Panasoffkee has a national reputation, especially for its redear sunfish fishery, and this makes the lake an important contributor to the local and regional economy. Although, fishing remains popular at Panasoffkee, the lake's future as an important recreational resource is threatened. The fisheries there have declined considerably during the last 30 to 40 years. In the mid-1950s, when the lake's fishery was first being studied, at least 15 fish camps operated there. In 1998, only three remained.

As in 1998, the threat to Lake Panasoffkee is still the loss of desirable fish habitat. Since the 1940s, considerable areas of historically open water have silted in and become overgrown with emergent vegetation. Consequently, low water conditions can make the lake un-navigable. Unlike many threatened Florida lakes, water quality is good at Lake Panasoffkee, mostly due to substantial groundwater flows into the lake from the Floridan Aquifer. Ironically, groundwater is also the major source of sediment filling in the lake. When groundwater, which carries large amounts of dissolved calcium carbonate, mixes with lake water, the calcium carbonate solidifies, producing sediments that settle on the lake bottom, covering fish spawning areas. These factors have combined to negatively impact the lake's fishery, promoting increased shoreline vegetation and tussock formations, thus limiting recreation and navigation.



Location map of Lake Panasoffkee.

Lake Panasoffkee Restoration Council

In an effort to protect and restore the environmental and economic importance of Lake Panasoffkee, the 1998 Florida Legislature created the Lake Panasoffkee Restoration Council (Council) within the Southwest Florida Water Management District (District). The enabling legislation (Chapter 98-69, Laws of Florida) established the membership and outlined the responsibilities of the Council and the Advisory Group. The current membership for the Council and Advisory Group and a copy of the enacting legislation are provided in Attachment 1 of this Report.

Through the enabling legislation, the Legislature directed the Council to develop a restoration plan for Lake Panasoffkee. In doing so, the Council was assigned the powers and duties discussed below.

1. **Restoration Issues:** Review audits and all data specifically related to lake restoration techniques and sport fish population recovery strategies, including data and strategies for shoreline restoration, sediment control and removal, exotic species management, floating tussock management or removal, navigation, water quality, and fisheries habitat improvement, particularly as they may apply to Lake Panasoffkee.
2. **Evaluate Existing Studies:** Evaluate whether additional studies are needed.
3. **Funding:** Explore all possible sources of funding to conduct the restoration activities.
4. **Recommendations:** Advise the Governing Board of the District regarding the best approach to restoring Lake Panasoffkee, and make recommendations as to which techniques should be part of the restoration program. (The Governing Board of the District shall respond in writing to the Council if any recommendations from the Council require re-evaluation. The response shall detail reasons for re-evaluating.)
5. **Report to Legislature:** Report to the Legislature before November 25 of each year on the progress of the Lake Panasoffkee Restoration Plan and any recommendations for the next fiscal year.

During its first year, the Council and Advisory Group prioritized the management issues and developed strategies for restoring the Lake. The Council also recommended additional studies to evaluate the lake's fishery and identified additional information needed to implement the Restoration Plan. The culmination of this effort was discussed in detail in the first *Lake Panasoffkee Restoration Council Report to the Legislature, dated November 25, 1998*.

Pursuant to its Legislative directive, the Council has reported to the Legislature every year since 1998 to provide progress reports and recommendations for the next fiscal year. The 2001 Report to the Legislature included refinements to the implementation strategy of the Restoration Plan. This year's Report to the Legislature discusses the progress made in implementing the Lake Panasoffkee Restoration Plan and identifies the additional funding required to fully implement the project. The management issues, strategies, and goals of the Restoration Plan are included in this Report, however, for more details, the reader is directed to the 1998 and 2001 Reports to the Legislature. (These reports are available upon request from the Southwest Florida Water Management District.)

CHAPTER 2 - LAKE PANASOFFKEE RESTORATION PLAN

In the first *Lake Panasoffkee Restoration Council, Report to the Legislature, November 25, 1998*, the Council identified the management issues, strategies, and goals for restoring Lake Panasoffkee. Since the 1998 Report to the Legislature, the Council and Advisory Group have been working diligently to implement the Restoration Plan. During this process, additional data were collected that resulted in refinements to the implementation strategy of the Restoration Plan. These refinements were discussed in detail in the 2001 Report to the Legislature. A discussion of the management issues, restoration strategies, and goals are provided in the following sections.

Lake Panasoffkee Management Issues

The management issues for Lake Panasoffkee were identified in the Council's *Lake Panasoffkee Restoration Council, Report to the Legislature, November 25, 1998*. These issues, which have not changed since the 1998 Report, are listed below in priority order.

- Fisheries habitat improvement
- Shoreline restoration
- Improved navigation
- Maintenance of overall good water quality

Lake Panasoffkee Management Strategies

Extensive sediment build-up and encroachment of emergent vegetation were identified as the major causes of lost fisheries habitat and issues with shoreline restoration and navigation. Therefore, dredging and removal of emergent vegetation were identified as the primary activities to restore the lake.

The Council recognized that maintenance of good water quality in the lake is of primary importance in implementing the Restoration Plan. Existing good water quality is due to the Floridan Aquifer providing most of the water entering the lake and the thick meadows of submerged aquatic vegetation (SAV) that exist in the lake. Therefore, re-colonization of SAV is an important requirement for dredged areas during implementation of the dredging project.

The 1998 Report to the Legislature identified a six-step dredging project to achieve the goals of the Lake Panasoffkee Restoration Plan. The 2001 Report to the Legislature reduced the original six-step plan to five steps and revised the sequence for implementation. In this 2003 Report, the Council recommended that Step 4 be deleted from the Lake Panasoffkee Restoration Plan due to the limited environmental benefit realized from this step. This revision allows the Council to focus on implementing Steps 2 and 3 that are crucial to achieving the Council's goals to restore fisheries habitat and shoreline conditions and improve navigation. The restoration steps and dredging sequence as revised in this 2003 Report to the Legislature are shown in Table 1. The conceptual boundaries of each of Step are shown in Figure 2.

Table 1

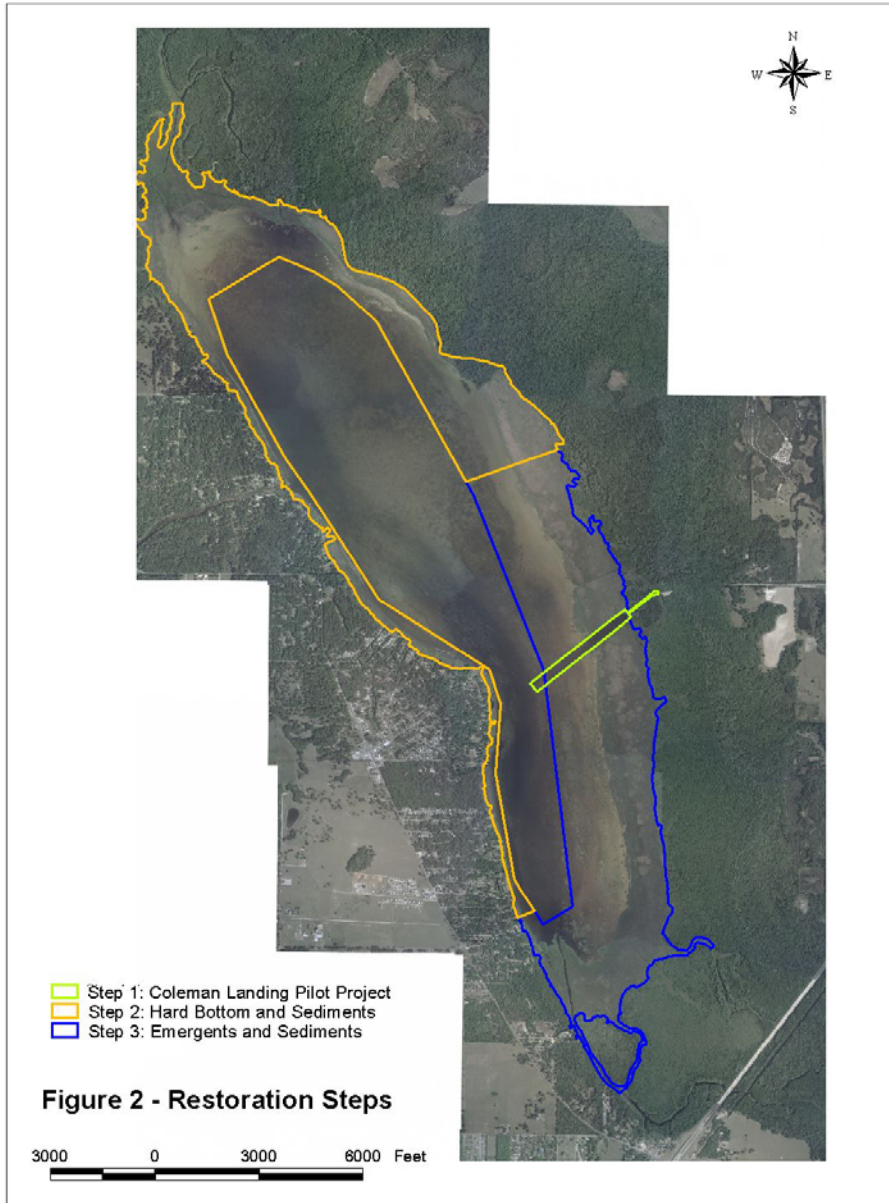
Restoration Steps

Step 1 - Coleman Landing Pilot Project (completed in December 2000)

Step 2 - Dredge to Hard Bottom

Step 3 - Dredge East-side Emergent

Step 4 - Canals



Lake Panasoffkee Restoration Plan Goals

Implementation of the Restoration Plan involves a multi-step dredging project to restore fisheries habitat, shoreline, and navigation. A description of each of the restoration steps as refined in this 2003 Report to the Legislature and the specific goals they are intended to achieve are provided below:

Step 1 – Coleman Landing Pilot Project – (*Dredging of this step was completed in December 2000.*) The first goal of this step was to restore public access and navigation by re-establishing a navigable channel from the existing boat ramp into the lake. A second and equally important goal of this step was to serve as a pilot project that would provide information critical to designing and implementing the remaining in-lake dredging steps and to determine if SAV would re-colonize dredged areas.

Step 2 – Dredge to Hard Bottom – The goal of this step is to restore fisheries habitat (specifically the historic fish spawning areas in the vicinity of Grassy and Shell Points), and historic shoreline conditions, and navigation along the eastern and western shores.

Step 3 – Dredge East-side Emergent Vegetation – The goal of this step is to restore fisheries habitat, historic shoreline conditions, and navigation along the eastern and southern shores and in the creeks in the southern end of the lake.

Step 4 – Canals – The goal of this step is to improve navigation within the residential canals and improve access to the lake.

The 1998 Report to the Legislature also identified the following goals for the Restoration Plan:

- Improve existing information available for fisheries management to evaluate success of fisheries habitat and shoreline restoration projects.
- Maintain or improve existing water quality as measured by a trophic state index of 50 or less.
- Gather information and data to manage dredging projects to ensure preservation of 60 percent coverage of desirable submerged aquatic plants is achieved.

CHAPTER 3 – PROGRESS REPORT

Funding and Project Costs

The Legislature did not include funding for Lake Panasoffkee in the State's fiscal year 2003/2004 budget. However, since the submittal of the 2002 report, \$1,098,000 in Federal funds has been secured.

Bids to construct the upland spoil disposal area and dredge Steps 2, 3, and 4 were received and presented to the Council at its meeting on August 25, 2003. The lowest total bid amount for Steps 2, 3 and 4 was \$24,627,895 and the cost to dredge Step 4 was \$2,000,000.

At its meeting on August 25, 2003, the Council recommended that *Step 4 - Dredge between the 34-foot and 35-foot contours* be deleted. This resulted in reducing the number of the Restoration Steps. (This refinement to the Restoration Plan is discussed more fully below.)

Based on the lowest bid, the total cost to dredge Steps 2 and 3 is \$22,627,895. As of October 1, 2003, the District has \$16,057,033 available toward the cost of \$22,627,895. This leaves an approximately \$6,570,862 shortfall to complete the Council's Lake Panasoffkee Restoration Plan.

Updated costs for the remaining Restoration Steps are shown in Table 2. Costs for each step include design, permitting, construction management, submerged aquatic vegetation (SAV) monitoring and dredging. In-kind costs incurred by the District, Florida Fish and Wildlife Conservation Commission (FFWCC), and the Florida Department of Environmental Protection (FDEP) for water quality and fisheries monitoring and project management are not included.

Table 2. Restoration Steps showing acreage, sediment volume and costs

Restoration Step	Area Acres	Volume Cu. Yards	Total Contracted Costs
Step 1 - Coleman Landing Pilot Project ¹	24.5	138,035	\$760,007
Step 2 - Dredge to Hard Bottom ²	915	3,442,071	\$12,050,894
Step 3 - Dredge East-side Emergent Zone ²	1,062	4,767,664	\$11,949,246
Step 4 - Canals ³	34	162,000	\$961,000
Total			\$25,721,147

Notes:

1. Step 1 was completed in December 2000. Costs include reclamation costs for the spoil disposal site.
2. Costs for design, permitting, SAV monitoring, mobilization, contingency, and site work have been pro-rated between Steps 2 and 3.
3. Estimates for the canals are taken from the 2001 Report to the Legislature. In October 2001, the Council allocated \$200,000 to Sumter County toward implementation of this step.

Project Implementation

The status of the Council's recommendations from the 2002 Report to the Legislature (shown in underlined italic text) are reported in this section, along with the progress on the overall Restoration Plan.

Complete technical specifications and bid documents for the dredging and upland spoil disposal areas for Steps 2, 3, and 4 - Technical specifications and bid documents for the dredging and upland spoil disposal areas for Steps 2, 3, and 4 were completed in April 2003.

Obtain permits from the FDEP and USACOE – The Florida Department of Environmental Protection issued a Noticed General Environmental Resource Permit for construction of the dredge spoil disposal area and dredging of Step 2 and 3 on December 9, 2002. The United States Army Corps of Engineers (USACOE) issued its verification letter advising that Steps 2 and 3 were authorized under the Nationwide 27 and Nationwide 16 permits.

As part of the application, the District submitted an Operations Plan that establishes the monitoring requirements and environmental conditions to be maintained during dredging and spoil disposal. The District's Governing Board approved the Operation Plan at its November 14, 2002 meeting.

As indicated in the 2002 Report, dredging of *Step 4 - Dredge between the 34-foot and 35-foot contours* was not included in the permit application, since the Council's 1998 Report to the Legislature stated "A demonstrated ability of desirable submersed plants to adequately re-colonize the dredged zones is a prerequisite for implementation of this step." Results from the Coleman Landing Pilot Project demonstrated that SAV would re-colonize dredged zones. However, the rate of dredging could exceed the rate of re-colonization of the SAV. Since the Council's goal of maintaining 60 percent coverage of SAV is a boundary condition of the permit, Step 4 was not included to ensure appropriate coverage of SAV is maintained.

Advertise and award the construction contract for Steps 2 and 3 – The District issued a Request for Bid (RFB) to implement Steps 2, 3, and 4 on June 17, 2003 and the bids were received on August 4, 2003. The lowest total bid to dredge Steps 2, 3, and 4 was \$24,627,895. The District's Governing Board, at its meeting on August 26, 2003, approved the award of a contract to Subaqueous Services, Inc.

Although dredging of *Step 4 - Dredge between the 34-foot and 35-foot contours* is not authorized under the current permit, this step was included in the RFB to secure a firm cost for this step so that the environmental benefit of this step could be evaluated against the cost. The RFB was structured to provide flexibility to allow the contract award for Steps 2, 3, and 4, yet only authorize work based on the steps that were permitted and the amount of funds that are available. Also, since dredging of Steps 2 and 3 are anticipated to take four years to complete, this will allow time to secure additional funds to complete Steps 2 and 3 and additional work may be authorized as funds become available. The contractor will be required to honor the bid prices for the term of the contract.

Construct spoil disposal areas - The District's Governing Board approved a purchase agreement for the spoil disposal area in February 2002. This purchase agreement was contingent upon several conditions to be met by both the Seller and the District prior to closing. Some of these conditions required the collection of additional data, however both parties worked determinedly to complete these tasks and closing occurred on September 17, 2003.

A groundbreaking ceremony at the spoil disposal site is expected by mid-December to kick-off construction of the spoil disposal area. Construction of the approximately 400-acre spoil disposal area is scheduled for completion in June 2004. Installation of the spoil disposal pipeline will occur concurrently with the construction of the spoil disposal area.

Begin dredging – Dredging cannot begin until construction of the spoil disposal area is complete. Given the current schedule, dredging of Step 2 is expected to begin by July 2004.

Continue to monitor submerged aquatic vegetation to ensure areal coverage is maintained at 60 percent or greater - The Council's first Report to the Legislature, dated November 1998, acknowledged the importance of existing healthy SAV in Lake Panasoffkee. Baseline SAV mapping for the entire lake was completed in December 2000. The annual aerial mapping and monitoring of the SAV could not be performed due to poor water clarity conditions resulting from heavy rainfall in the winter and spring of 2002/2003.

Re-evaluate cost versus the environmental benefit of Step 4 - Dredge between the 34-foot and 35-foot contours – Based on the information for Step 4 included in the lowest qualified bid, the cost to dredge Step 4 would be \$2,000,000. The volume of sediment to be removed in this Step is 268,461 cubic yards over 345 acres, or roughly equivalent to 778 cubic yards per acre. Step 2 removes 3,442,071 cubic yards over 915 acres, or roughly equivalent to 3,762 cubic yards per acre. Comparison of the cubic yards of sediment removed per acre shows that Step 2 removes much more sediment than Step 4. Additionally dredging of Step 2 results in exposing hard bottom that is required to restore fisheries habitat. Although Step 4 increases the depth of the lake by one foot or less in a portion of the lake, it does not expose hard bottom that is critical for restoring fish spawning areas. Given the importance of Step 2 and 3 to achieving the goals of restoring fish spawning habitat and shoreline conditions, the Council, at its meeting on August 25, 2003 voted unanimously to delete *Step 4 - Dredge between the 34-foot and 35-foot contours* from the Restoration Plan due to its limited environmental benefit. This resulted in a renumbering of the Restoration Steps as shown in Table 2.

Continue Fish Population study using electrofishing methods – The Commission continued its fish population studies using electrofishing methods. Data collected indicate increases in largemouth bass densities since the 2001 data collection effort. It is believed that this increase may be due to rising water levels that have caused a decline in deep SAV beds. This would lead to fish congregating in near shore areas making them more susceptible to capture using electrofishing methods. An increase in panfish densities was also noted, though less significant than largemouth bass increase. A complete copy of the Commission's report is included in Attachment 2.

Continue Fish Food Study - The Commission began fish food studies in 1998 to determine the health of the invertebrate communities in the lake. (Invertebrates, which include worms, snails, mussels, crustaceans, and insects, are an important food source for sport fish.) Baseline data collection to assess the pre-restoration condition of Lake Panasoffkee's invertebrate community has been completed. No further data will be collected until after dredging of Step 2 in the vicinity of Shell and Grassy Points has been completed.

CHAPTER 4 - RECOMMENDATIONS

The Council's recommendations for next year are listed below.

- Delete Step 4 – Dredging between the 34-foot and 35-foot contours
- Pursue funding sufficient to complete the Restoration Plan
- Complete construction of the spoil disposal areas
- Begin dredging
- Continue to monitor submerged aquatic vegetation to ensure that areal coverage is maintained at 60 percent or greater

These recommendations were formally adopted by the Council at its meeting on August 25, 2003 and accepted by the District's Governing Board on October 28, 2003.

Attachment 1

Lake Panasoffkee Restoration Council and Advisory Group Members – 2003

Restoration Council Members

John W. Springstead, Chairman
Billy Merritt, Vice-Chairman
William W. Davis, Secretary
Dan McCormic
David Starnes
Jim W. Veal, Sr.
George L. Buhmeyer

Advisory Group

Bob Gleason – Florida Department of Transportation
Lizanne Garcia – Southwest Florida Water Management District
Emilio Gonzalez – United States Army Corps of Engineers
Sam McKinney – Florida Fish and Wildlife Conservation Commission
CeCe McKiernan - (Florida Department of Environmental Protection)

CHAPTER 98-69
Committee Substitute for Senate Bill No. 592

An act relating to water management; creating the Lake Panasoffkee Restoration Council; providing for its membership, powers, and duties; requiring the Southwest Florida Water Management District to provide staff for the council and to award contracts subject to an appropriation of funds; providing an appropriation; providing an effective date.

WHEREAS, Lake Panasoffkee is a waterbody of historic, hydrologic, and ecological significance, and

WHEREAS, Lake Panasoffkee is a major tributary to the Withlacoochee River, and

WHEREAS, Lake Panasoffkee is plagued by fluctuating water levels and sedimentation and excessive growth of aquatic plants, which are degrading its water quality and recreational values and adversely affecting the Withlacoochee River, and

WHEREAS, Lake Panasoffkee continues to provide wildlife habitat for fish, birds, and game, and offers recreational opportunities for the residents of Sumter County and Central Florida and visitors to the area, despite its current problems, and

WHEREAS, the economic potential of Lake Panasoffkee has yet to be tapped, and

WHEREAS, the Southwest Water Management District, in cooperation with several state, regional, and local entities, has developed proposals to restore Lake Panasoffkee, NOW, THEREFORE,

Be It Enacted by the Legislature of the State of Florida:

Section 1. Lake Panasoffkee Restoration Council—There is created within the Southwest Florida Water Management District the Lake Panasoffkee Restoration Council.

(1)(a) The council shall consist of seven voting members: two representatives of lakefront property owners, one environmental engineer, one person with training in biology or another scientific discipline, one person with training as an attorney, one person with training as an engineer, and one representative of the sport fishing industry, all to be appointed by the Sumter County Commission. No person serving on the council may be appointed to any of the council advisory group agencies' councils, board, or commission. The council members shall serve as advisors to the governing board of the Southwest Florida Water Management District. The council is subject to the provisions of chapter 119 and chapter 120, Florida Statutes.

CODING: Words stricken are deletions; words underlined are additions.

(b) The council advisory group to the council shall consist of: one representative each from the Southwest Florida Water Management District, the Florida Department of Environmental Protection, the Florida Department of Transportation, the Florida Game and Fresh Water Fish Commission, the Withlacoochee River Basin Board, and the United States Army Corps of Engineers, to be appointed by their respective agencies, all of whom must have training in biology or another scientific discipline.

(2) Immediately after their appointment, the council shall meet and organize by electing a chair, a vice chair, and a secretary, whose terms shall be for 2 years each. Council officers shall not serve consecutive terms. Each council member shall be a voting member.

(3) The council shall meet at the call of its chair, at the request of six of its members, or at the request of the chair of the governing board of the Southwest Florida Water Management District.

(4) The council shall have the powers and duties to:

(a) Review audits and all data specifically related to lake restoration techniques and sport fish population recovery strategies, including data and strategies for shoreline restoration, sediment control and removal, exotic species management, floating tussock management or removal, navigation, water quality, and fisheries habitat improvement, particularly as they may apply to Lake Panasoffkee.

(b) Evaluate whether additional studies are needed.

(c) Explore all possible sources of funding to conduct the restoration activities.

(d) Advise the governing board of the Southwest Florida Water management District regarding the best approach to restoring Lake Panasoffkee, and make a recommendation as to which techniques should be part of the restoration program. The governing board of the Southwest Florida Water Management District shall respond in writing to the council if any recommendations from the council require re-evaluation. The response shall detail reasons for re-evaluation.

(e) Report to the Legislature before November 25 of each year on the progress of the Lake Panasoffkee restoration plan and any recommendations for the next fiscal year.

(5) The Southwest Florida Water Management District shall provide staff to assist the council in carrying out the provisions of this act.

(6) Members of the council shall receive no compensation for their services, but are entitled to be reimbursed for per diem and travel expenses incurred during execution of their official duties, as provided in section 112.061, Florida Statutes. State and federal agencies shall be responsible for the per diem and travel expenses of their respective appointees to the council

and the Southwest Florida Water Management District shall be responsible for per diem and travel expenses of other appointees to the council.

CODING: Words stricken are deletions; words underlined are additions.

Section 2. Lake Panasoffkee restoration program.—

(1) The Southwest Florida Water Management District, in conjunction with the Department of Environmental Protection, the Florida Game and Fresh Water Fish Commission, the Sumter County Commission, and the Lake Panasoffkee Restoration Council, shall review existing restoration proposals to determine which ones are the most environmentally sound and economically feasible methods of improving the fisheries and natural systems of Lake Panasoffkee.

(2) The Southwest Florida Water Management District, in consultation and by agreement with the Department of Environmental Protection, the Game and Fresh Water Fish Commission, and pertinent local governments, shall develop tasks to be undertaken by those entities necessary to initiate the Lake Panasoffkee restoration program recommended by the Lake Panasoffkee Restoration Council. These agencies shall:

(a) Evaluate different methodologies for removing the extensive tussocks and build up of organic matter along the shoreline and of the aquatic vegetation in the lake; and

(b) Conduct any additional studies as recommended by the Lake Panasoffkee Restoration Council.

(3) Contingent on the Legislature appropriating funds for the Lake Panasoffkee restoration program and in conjunction with financial participation by federal, other state, and local governments, the appropriate agencies shall through competitive bid award contracts to implement the activities of the Lake Panasoffkee restoration program.

Section 3. The sum of \$45,000 is appropriated from the General Revenue Fund to the Southwest Florida Water Management District for the purpose of paying administrative, per diem, and travel expenses of the Lake Panasoffkee Restoration Council.

Section 4. This act shall take effect upon becoming a law.

Approved by the Governor May 21, 1998.

Filed in Office Secretary of State May 21, 1998.

CODING: Words stricken are deletions; words underlined are additions.

Attachment 2

2002-2003 Annual Report - Division of Freshwater Fisheries

Lake Panasoffkee (1,804 ha)

A total of 235 largemouth bass (2.35 fish/minute) were electrofished in fall 2002, while 216 bass (2.16 fish/minute) were collected in spring 2003 (Table 16). These were notable increases in largemouth bass density, as bass were collected at rates of 0.44 fish/minute in fall 2001 and 0.70 fish/minute in spring 2002 (McKinney et al. 2002). The improvement appears due to rising water levels and a subsequent increase in tannin-stained waters. The reduced water clarity caused a decline in offshore stands of submersed vegetation and concentrated fish in marginal vegetation along the littoral zone making them more susceptible to capture by electrofishing.

Harvestable largemouth bass densities also showed a dramatic increase this season as bass ≥ 36 cm total length were collected at rates of 0.12 fish/minute in the fall of 2002 and 0.16 fish/minute in spring 2003 (Table 16). Harvestable-size largemouth bass CPUE was very poor in fall 2001 (0.02 fish/minute) and spring 2002 (0.01 fish/minute). Mean relative weights of largemouth bass also improved this season, with most length groups condition factors within or above the optimal range of 95-105. Decreased macrophyte volume from rising, tannin-stained waters likely improved the ability of largemouth bass to capture prey. Length-frequency distributions illustrate improved size distribution of the largemouth bass population and a strong 2003 year class of fish (Figures 17 and 18).

Quality of the panfish population has improved slightly as CPUE of harvestable-size bluegill was 0.59 fish/minute in fall 2002 and 0.13 fish/minute in spring 2003 (Table 16). Electrofishing catch rates of harvestable-size redear sunfish were 0.69 fish/minute in fall 2002 and 0.07 fish/minute in spring 2003. Phase 2 of the Lake Panasoffkee Restoration Program, tentatively scheduled for FY 2003-2004, will greatly enhance centrarchid habitat with a resultant increase in sportfish reproduction and recruitment.

Table 15 - Electrofishing catch statistics for fall 2002 largemouth bass samples from lakes Crooked, Echo, Grasshopper, Hopkins Prairie, Lou and Wildcat. S=stock (20 cm); Q=quality (30 cm); P=preferred (38 cm); M=memorable (51 cm); and T=trophy (63 cm).

	Crooked	Echo	Grasshopper	Hopkins Prairie	Lou	Wildcat
<u>Pedal Time (min)</u>	40	20	83	65	102	222
<u>Sample size</u>	35	5	13	8	161	167
<u>LMB Stock Density Indices (\pm 95% CI)</u>						
PSD	44(18)	----	54(32)	----	48(10)	50 (7)
RSD-36	19(15)	----	23(28)	----	20 (8)	27 (7)
RSD-P	9 (9)	----	23(28)	----	10 (7)	20 (6)
RSD-M	0	----	----	----	1 (3)	4 (3)
RSD-T	0	----	----	----	0	2 (3)
<u>Catch Rate (#/min)</u>	0.88	0.25	0.16	0.12	1.58	0.75
<u>Harvestable Catch Rate ^a(#/min)</u>	0.15	0.05	0.04	0.02	0.16	0.17
<u>Mean Wr</u>						
<S (0-19 cm)	101	97	----	90	105	97
S-Q (20-29 cm)	90	88	89	95	89	87
Q-P (30-37 cm)	85	77	82	83	88	82
P-M (38-50 cm)	86	----	87	98	87	84
M-T (51-62 cm)	----	----	----	----	108	100
>T (>63 cm)	----	----	----	----	----	92

^a minimum harvestable length: LMB (36 cm)

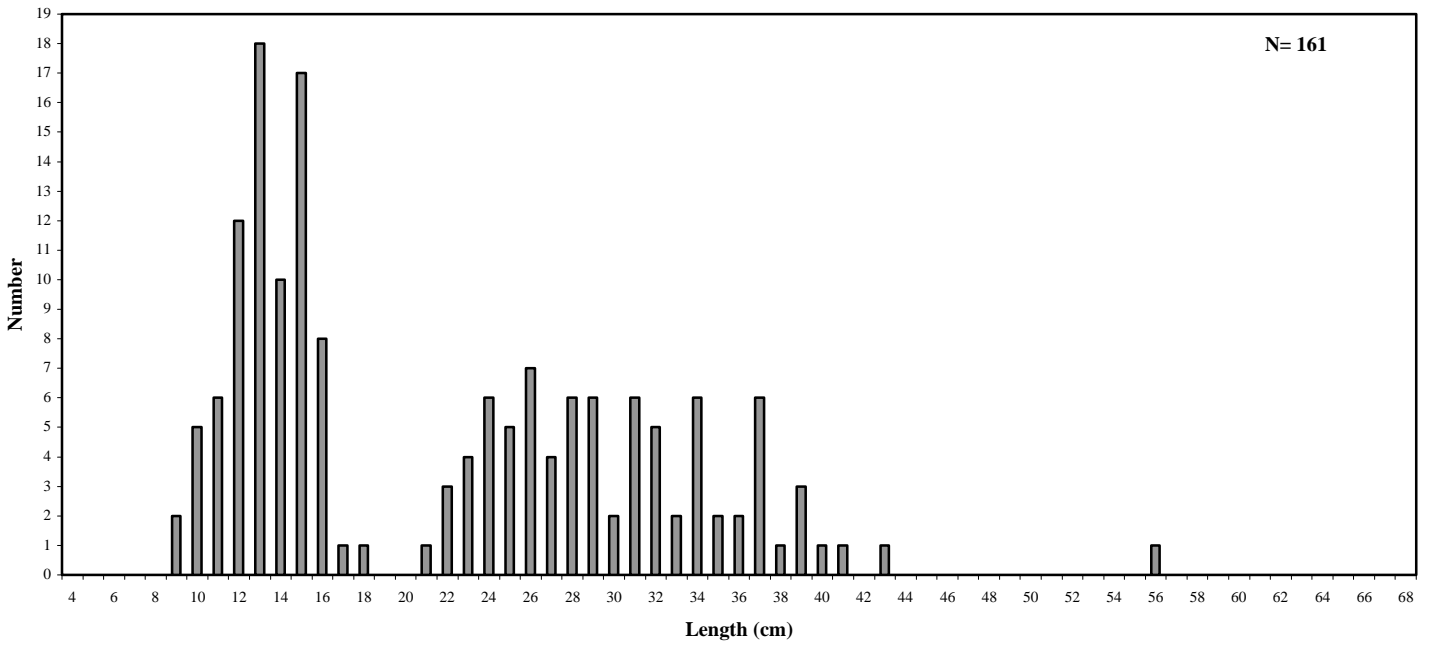


Figure 15 - Length-frequency distribution of largemouth bass collected from Lake Lou electrofishing surveys, September 2002.

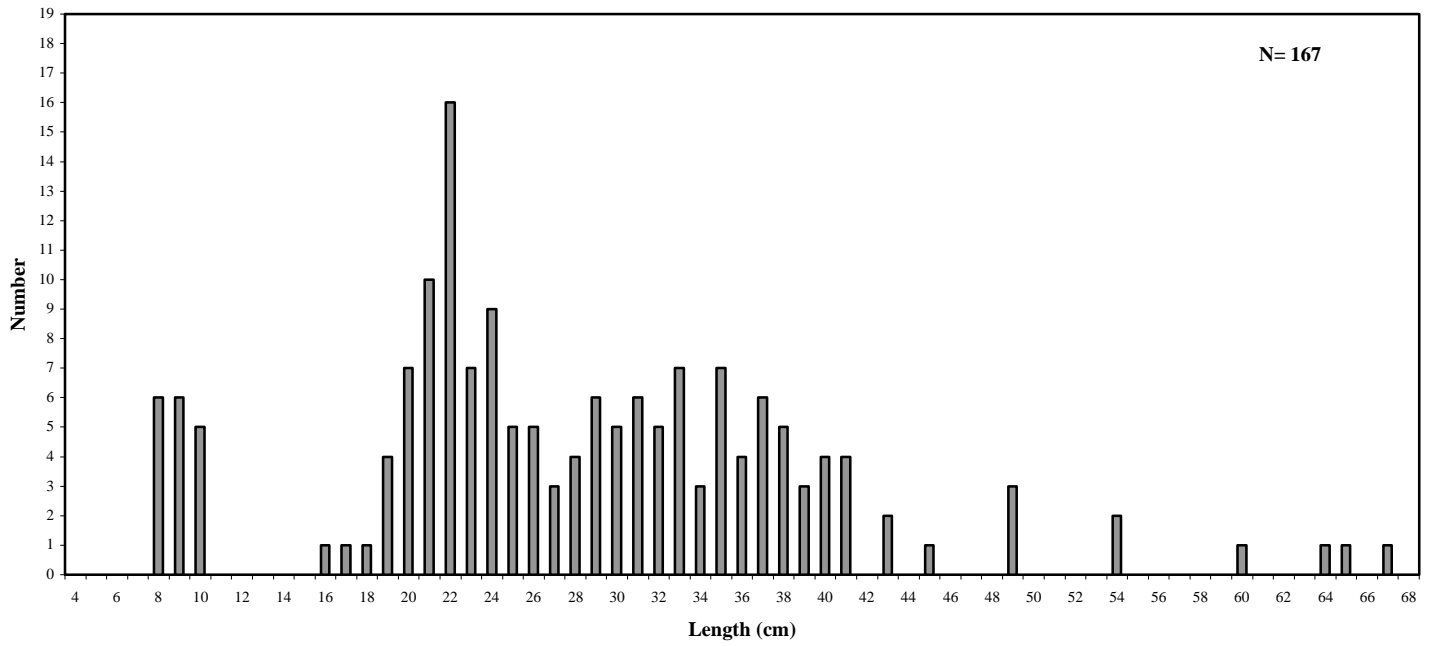


Figure 16 - Length-frequency distribution of largemouth bass collected from Wildcat Lake electrofishing surveys, September 2002.

Table 16 - Electrofishing catch statistics for fall 2002 and spring 2003 fish population samples from Lake Panasoffkee. LMB=largemouth bass; BLG=bluegill; and RE=redear sunfish. S=stock (20 cm); Q=quality (30 cm); P=preferred (38 cm); M=memorable (51 cm); and T=trophy (63 cm).

	Fall 2002	Spring 2003
<u>Pedal time (min)</u>	100	100
<u>Sample size</u>		
LMB	235	216
BLG	605	855
RE	269	298
<u>LMB Stock Density Indices^a(±95% CI)</u>		
PSD	29 (6)	49(10)
RSD-36	6 (3)	20 (9)
RSD-P	3 (2)	11 (7)
RSD-M	0	0
RSD-T	0	0
<u>Catch Rate (#/min)</u>		
LMB	2.35	2.16
BLG	6.05	8.55
RE	2.69	2.98
<u>Harvestable Catch Rate^a(#/min)</u>		
LMB	0.12	0.16
BLG	0.59	0.13
RE	0.69	0.07
<u>LMB Mean W_i^a</u>		
<S (0-19 cm)	112	114
S-Q (20-29 cm)	101	104
Q-P (30-37 cm)	97	93
P-M (38-50 cm)	96	97
M-T (51-62 cm)	-----	-----
>T (>63 cm)	-----	-----

^a minimum harvestable lengths: LMB (36 cm); BLG (15 cm); and RE (15 cm)

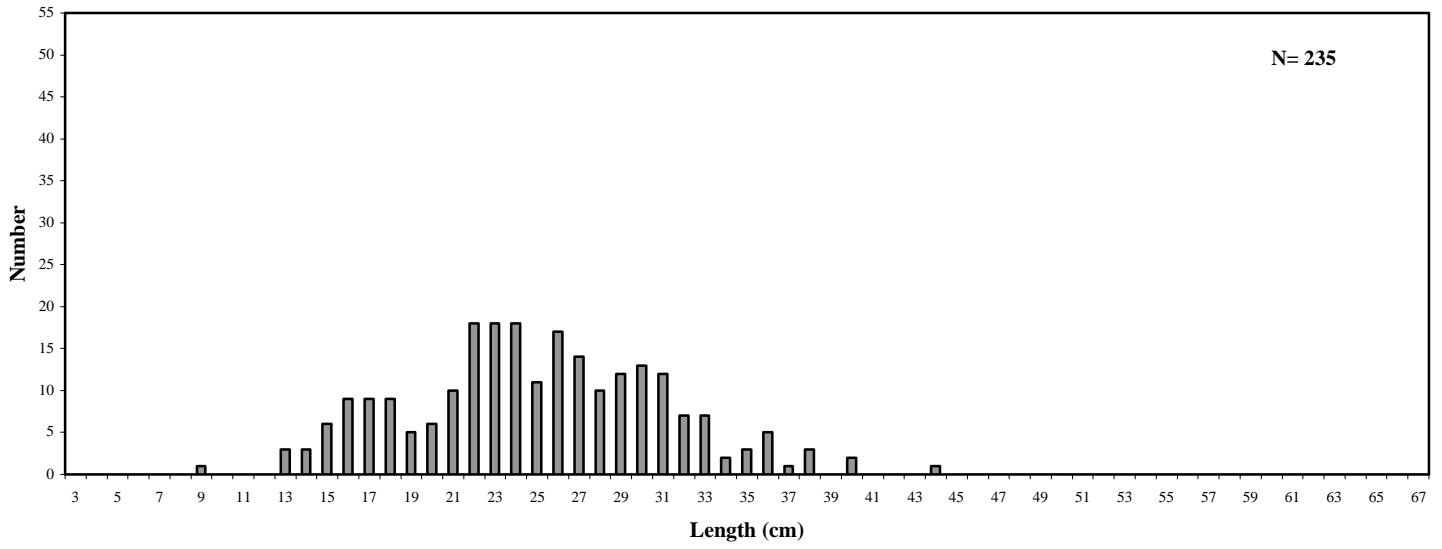


Figure 17 - Length-frequency distribution of largemouth bass collected from Lake Panasoffkee electrofishing surveys, November 2002.

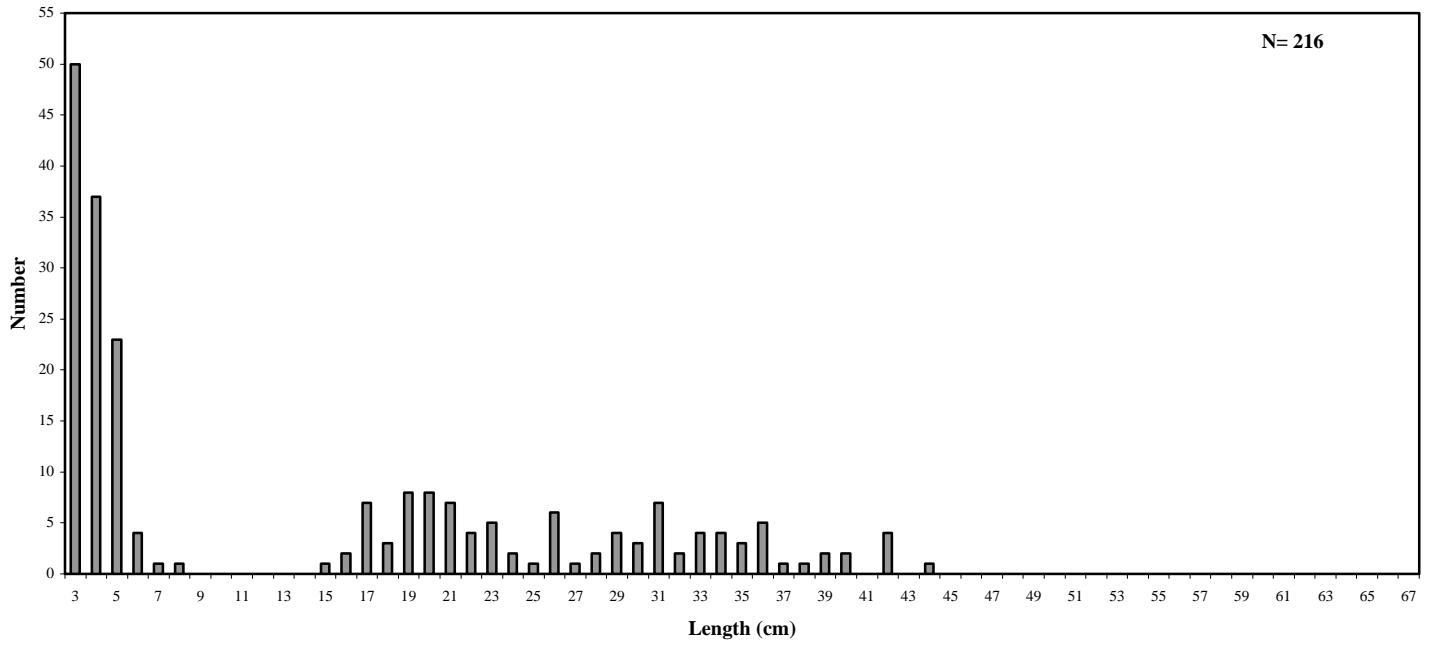


Figure 18 - Length-frequency distribution of largemouth bass collected from Lake Panasoffkee electrofishing surveys, May 2003.