

# THE NSS MILL CREEK SINK PRESERVE MANAGEMENT PLAN

## DESCRIPTION

The Mill Creek Sink property is owned by the National Speleological Society (NSS), and managed by the Cave Diving Section of the NSS (NSS-CDS). Because of the nature and complexity of the underwater cave system, access to the cave shall be permitted to only qualified cave divers. The goal of the management plan is to allow continued access to Mill Creek Sink for cave diving and to protect this valuable resource so that future cave divers can visit and appreciate a cave in near pristine condition. To this end, a management committee shall set cave diving requirements. In addition, fences and gates are installed as necessary to prevent unauthorized visitation to the site.

Equally important is the protection of the surrounding property and connected water resources due to development in the region. Mill Creek Sink is located within the City of Alachua and is adjacent to I-75. As with most of Florida, development is occurring at a rapid rate. By educating and working with local officials with the goal to minimize the impact of growth in the area on the cave system.

## HISTORY

Mill Creek Sink is located in the city of Alachua, Florida and was originally established by the NSS as the Alachua Sink Preserve on November 7, 1992<sup>1</sup>. The donor of the property was the Asgrow Florida Corporation, a division of the Upjohn Company. John Kibler, a long time NSS-CDS member and Asgrow employee, was one of the driving forces behind the donation to the NSS. The NSS interest in the ownership of this property is primarily due to its significant value as a hydrological resource and to protect access to this site.

## SURFACE RESOURCES

### *Biological*

Several species of plants exist in the floodplain and on the rim and rim slopes that are uncommon to the area. The site represents a southern refugium for some species that normally occur north of the area or west in the Florida Panhandle area. The floodplain may represent a pre-Columbian forest remnant, which has not been logged as such for one reason or another. Large cypress and water elm dominate the canopy in the low elevation.

Dr. Dana Griffin of the University of Florida suggests that the water elms (*Planera aquatica*) girth measurements may be of champion tree dimensions.

Out of range or uncommon plants occurring at the site are:

- *Collinsonia canadensis* (Horse Balm)
- *Arisaema dracontinum* (Green Dragon)
- *Triadenum walteri* (Marsh St. John's Wort)
- *Aristolochus serpentaria* (Snakeroot)
- *Thelypteris dentata* (Downy-shield fern)
- *Onoclea sensibilis* (Sensitive fern)

### *Geological*

Mill Creek Sink lies along a persistent topographical feature known as the Cody Escarpment. This westward-facing escarpment is the erosional boundary between an upland plateau to the east and a karst plain to the west. The upland plateau, with elevations up to the 190 feet mean sea level (MSL), is known as the Hawthorne Plateau or the Northern Highlands. The plateau once extended completely across Alachua County, and is composed of marine and deltaic sediments. Karst features are scarce on the plateaus due to the impervious clays of the Hawthorne Formation. The plateau landscape is characterized by very low relief, which along with a high water table forms swampy pine flatwoods and cypress ponds.

Retreat of the escarpment has exposed the underlying limestone sediments of the karst plain, which were reduced to their present topographically low level (less than 75 feet MSL) through the action of solution

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and modified by the Pleistocene higher sea level stands. Small short caves, solution pipes, and cenote like sinkholes are common on the karst plain.<sup>2</sup>

The site consists of 8.8 acres of land, most of which lies below the 100 year flood plain, and thus has very little commercial development potential. However, there is a 50-foot wide section of land to the east of the sinkhole, which comes out to front on US Hwy. 441. It is important to note that the Mill Creek Sink property does not include any land on the high ground west of the sinkhole. All of the property between the sinkhole and Sonny's BAR-B-Q is privately owned. The property is managed for diving, research, and educational purposes and both the committee members and the Alachua Police Department monitors its use.

## ***Hydrological***

The surface stream, Mill Creek and Townsend Branch, drains over 70 square miles north of Mill Creek Sink and is dissected by over 10 swallow holes. Mill Creek Sink is the only known local entrance that allows access to the underwater cave. There is a swallow hole located north of the main sinkhole, which provides an in feeder of surface runoff into the system. The other sinks are alluviated to the extent that the investigators cannot extend them.

## **UNDERGROUND RESOURCES**

### ***Biological***

Mill Creek Sink is home to turtles, both soft-shell and snapping varieties. Alligators are occasionally seen also. Bream and catfish are seen in the basin and catfish have been spotted throughout the cave system. Blind cave crayfish, the Pallid Cave crayfish (*Procambarus pallidus*), the Florida Cave Amphipod (*Crangonyx grandimanus*) and the Hobb's Cave Amphipod (*Crangonyx hobbsi*) are also found in the cave and are "species of special concern" designated by the State of Florida. The Florida Committee on Rare and Endangers Biota of Florida has published the selected information for State of Florida Game and Freshwater Fish Commission. This information supports and recommends protection of these and other related cave species.

### ***Geological***

Mill Creek Sink is a water filled sinkhole connected to a water filled cave located near I-75 in the city of Alachua, Florida. Mill Creek Sink is the only known local entrance to the underground Mill Creek Stream System. The sinkhole slopes steeply nearly 50 feet down to the water's edge. Most of the year the sinkhole is filled with very dark, tannic-stained water as well as fallen trees and debris. Clear water is normally not encountered for a considerable distance into the system. The main cave system has tunnel both upstream and downstream with depths to 227 feet.

### ***Hydrological***

Dye tracing studies<sup>3</sup> done by the NSS-CDS in February of 1976 and 2006 revealed that Mill Creek Sink is connected to Hornsby Springs, a straight line distance of six miles. Hornsby Springs is a tributary water source for the Santa Fe River. The Santa Fe River is designated as an "Outstanding Florida Waterway" which is the most prominent designation for a river in the State of Florida. The uniqueness of this hydrological relationship provides an upstream karst window to a sensitive water source, which is part of a major conduit feeding the Florida Aquifer. Further understanding of the hydrology of Mill Creek Sink is needed and can be gained through exploration and survey of the system. Protection from point and non-point pollution is the primary reason in favor of NSS ownership. Additionally, NSS ownership with local management by the Mill Creek Sink Management Committee (MCSMC) would provide the basis for ongoing field study in this area.

## **MANAGEMENT COMMITTEE**

The NSS-CDS manages Mill Creek Sink (formerly Alachua Sink) for the NSS and shall delegate certain responsibilities set forth below to the Mill Creek Sink Management Committee (MCSMC). The management of the cave is authorized and complies with NSS Act 26-505. The NSS-CDS shall be the sole diving authority for the site. The CDS shall ensure the MCSMC adheres to

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current standards and practices. All diving practices shall be reviewed and approved by the NSS-CDS Training Chairman.

The MCSMC shall report to the CDS quarterly as to all site activity. The MCSMC shall retain day-to-day site management activities. The NSS-CDS shall endorse all reports prepared for the NSS by the MCSMC prior to submission to the NSS.

The MCSMC shall be chaired by a NSS-CDS appointed Site Manager who shall have the authority to appoint guides with the concurrence of the guide committee and the advice and consent of the NSS-CDS BoD. All divers (term divers shall include MCSMC guides) shall attest to their level of training in Cave Diving and mixed gas diving. All divers are required to have dive accident insurance. All divers shall use current NSS-CDS liability waivers. Guides are required to have current CPR training and shall be required to be members of the NSS and the NSS-CDS. All guides shall submit copies of current CPR training and NSS membership to the Site Manager by the beginning of the new year in order to retain guiding privileges

Alachua Sink shall be reserved as a scientific and research cave diving site. Recreational diving is not permitted. All dives shall be for specific scientific purposes or in preparation for scientific purposes. All divers and the guides shall be considered volunteers of the NSS and the NSS-CDS. A post dive report shall be prepared and endorsed by the guide and divers upon conclusion of each dive. All post dive reports and liability waivers shall be submitted by the guide to the Site Manager quarterly for storage in NSS-CDS archives This policy affords the NSS and the NSS-CDS the protection of the Florida Volunteer Act (F.S. 768.1355). It will fulfill the mission statement of the NSS-CDS and the Guidelines for Research on Property Owned or Managed by the National Speleological Society (Refer to Act [88-480](#))

There shall be no fees or reimbursements to any person in order to dive this site.

## ACCESS POLICY

The depth of the system, the extremely poor visibility in the basin, and the presence of a restriction in the downstream at 190 feet makes Mill Creek Sink a very advanced level dive. All divers who elect to dive Mill Creek Sink, do so on a voluntary basis. No training dives are allowed. Commercial diving is not allowed. No fees may be charged for access to the site by anyone, including authorized guides. Access to the cave system shall only be permitted within the framework of the MCSMC Access Policy.

### *Eligibility to Dive*

Divers may be granted access to dive Mill Creek Sink under any of the three access policies:

#### **1. Guided Diving Access**

- a. Shall be a member of the NSS and the NSS-CDS
- b. Shall be "Full Cave Diver" certified
- c. Shall show proof of the Abe Davis Award<sup>4</sup> or equivalent experience.
- d. Shall have logged 3 cave dives to 150 feet with required decompression of 45 minutes or more.
- e. Shall be certified to utilize breathing gases appropriate for depths beyond 130 FFW per NSS-CDS Standards and Procedures.
- f. Shall have DAN diving accident Insurance or equivalent.
- g. Shall sign an NSS-CDS liability waiver on the day of diving.
- h. Shall be accompanied on the dive by an MCSMC guide.
- i. Shall be limited to dive teams of 1 guide and two divers. In order to dive the downstream tunnel; a diver shall have completed three dives in the upstream section.

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## 2. Unguided Diving Access

Divers are permitted to dive MCS unguided. The Mill Creek Sink Site Manager or designee shall approve such dives in advance. Divers shall submit to the Site Manager:

- a. A dive plan to include the names of the divers.
- b. A brief experience history.
- c. The date, time and purpose of the proposed dive.

The divers may then be assigned a MCS guide to act as 'dive coordinator'. The divers, individually, shall meet all of the above requirements. Additionally, they shall have sufficient credentials and logged dives within other complex cave systems that demonstrates diving proficiency that surpasses the criteria needed for safe diving at Mill Creek Sink. The MCSMC guide has the following responsibilities:

- a. Review of the divers diving credentials.
- b. Schedule an appropriate dive time so unaccompanied dive teams may be limited to one team per day. (Research Teams are not subject to dive team limits except as otherwise provided.)
- c. Brief the dive team, review dive plan run times and witness the NSS-CDS diver liability release on the day of the dive.
- d. Collection of post dive reports indicating Research/Scientific observations.

## 3. Research/Scientific Diving Access

Divers may be granted unencumbered access for volunteer Research /Scientific Diving if:

- a. They are, or have served as, guides or the former Alachua Sink Management Committee. Research/Scientific Divers shall not lead "Guided Dives" but may elect to form dive teams of other Research/Scientific Divers as their assistants.
- b. They apply and receive approval for Project Status to the Board of Directors of the NSS-CDS and meet access policies. For administrative purposes, the Site Manager may appoint an MCSMC Research/Scientific Diver or Guide to act as liaison to the Research/Scientific Project.

## GUIDES

### ***Responsibilities of Guides***

All visitors shall execute an NSS-CDS Liability Release prior to entering the site. The guide shall submit the signed liability releases to the Site Manager for filing one week. Guides shall notify the Site Manager of intended activities prior to visiting the system. It is the guide's responsibility to determine safe site conditions prior to visitation. The guide has the final decision to allow a particular guided or unguided dive to continue and may stop the dive at any time for any reason.

All MCSMC Guides are volunteers approved by the Site Manger based upon their experience with Mill Creek Sink. At a minimum, a candidate seeking to be a volunteer guide shall have completed 10 dives in the system with two different guides. Guides shall be certified to utilize breathing gas mixtures appropriate for depths beyond 130 FFW per NSS-CDS Standards and Procedures. All guides shall have DAN diving accident insurance or equivalent. Additionally they shall meet the following requirements:

- a. Have a current, signed NSS-CDS release prior to diving.
- b. Have current CPR training.

### ***Number of Guides***

The number of may fluctuate depending on the activity and availability of the individual guides.

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## PUBLICITY POLICY

There have been several ongoing research projects at Mill Creek Sink in recent years. Scientist or explorers interested in projects at Mill Creek Sink are encouraged to contact the Mill Creek Sink Management Committee with a carefully planned, written project proposal. All data collected shall be made available to the MCSMC, NSS-CDS and the NSS. Interaction with educational, scientific and government institutions and agencies.

The MCSMC shall maintain relations with local officials and provide education and input into issues that may affect the cave system or the drainage area that feeds the cave system. It is particularly important that the City of Alachua, as the primary local governing body, be kept informed of site conditions. They have provided invaluable assistance in patrolling the site for trespassers and have a significant public safety interest. All public comments in reference to NSS-CDS and NSS policy shall be deferred to the Chairman of the NSS-CDS.

## SURFACE MANAGEMENT

The Mill Creek Sink Management Committee shall install and maintain a locked gate at the primary access point to the sink. The property shall be posted, and arrangements have been made with the Alachua Police Department to monitor for unauthorized access. A parking area shall be maintained and a parking permit system implemented. Occupants of vehicles not displaying the proper permits are considered to be trespassing.

## FUTURE PLANS

Steps from the parking lot to the water have been constructed. Additional site improvements to facilitate conservation, preservation and safety are an on going priority of the MCSMC.

Long range plans for the property includes 'nature trails' that would provide kiosks and plant identification markers as well as benches and picnic areas. Other long-term ideas include the possibility of a joint venture between the school district, Santa Fe Community College and the NSS, to utilize the property as a karst environmental educational area. All such future plans for the site would assure continued access for divers.

The property to the west of Mill Creek Sink should be considered for acquisition by the NSS or NSS-CDS to preclude development of the property adjacent to the sink. Contact with the property owner has been initiated, but there is no immediate interest on their part in transferring ownership. The owner suggested yearly contact be made, in writing, expressing continued interest in the property.

## REFERENCE

<sup>1</sup> *NSS Acts Section 26, Act 26-505.*

<sup>2</sup> *Source: Geology of the Western Part of Alachua County, Florida by: Williams, Nicol and Randazzo, 1977, Bureau of Geology.*

<sup>3</sup> *Source: Sheck Exley, private communication*

<sup>4</sup> *The Abe Davis Award is granted by the NSS-CDS to those individuals who have successfully completed 100 safe cave dives.*

*Developed and submitted jointly by the Mill Creek Sink Preserve Management Committee and the National Speleological Society Cave Diving Section for adoption by the National Speleological Society Board of Directors*

Approved: June 2007 - Jim Taylor, Manager, Mill Creek Sink Preserve Management Committee

Approved: June 2007 - NSS-CDS Board of Directors

Approved: July 2007 - NSS Board of Governors