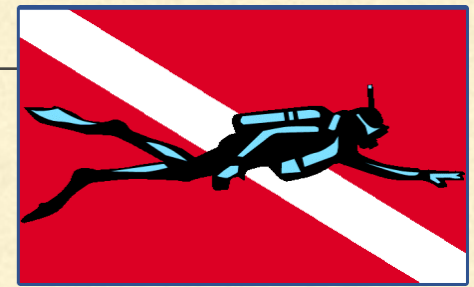


FLORIDA SPRINGS



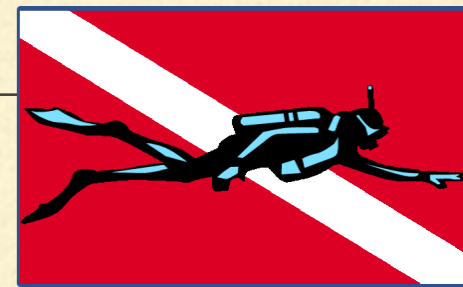


What is a Spring?

- **Any natural aquatic environment where fresh water flows from an aquifer to the earth's surface.**

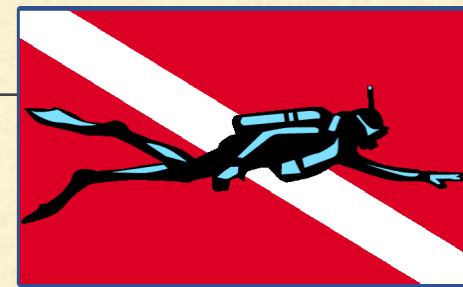
Aquifer:

- **Underground layer of water-bearing permeable rock, rock fractures or unconsolidated materials (gravel, sand).**
 - **Body of rock and/or sediment that holds groundwater.**
-



How Are Springs Formed?

- **Geographical structures force large amounts of water to the surface**
 - 1. Water soaks in**
 - 2. Percolates & filters through**
 - 3. Saturation drives water to surface**
 - 4. Takes few days to hundreds of years**
-



Why Does Florida Have So Many Springs?

KARST: (Karst Topography)

- Type of landscape where the dissolving of the bedrock has created sinkholes, sinking streams, caves, springs, and related features.
- Associated with soluble rock types: Limestone, Marble, Gypsum, Etc.
- Florida has over 600 Freshwater Springs – Highest Concentration on Planet.

Sinkhole

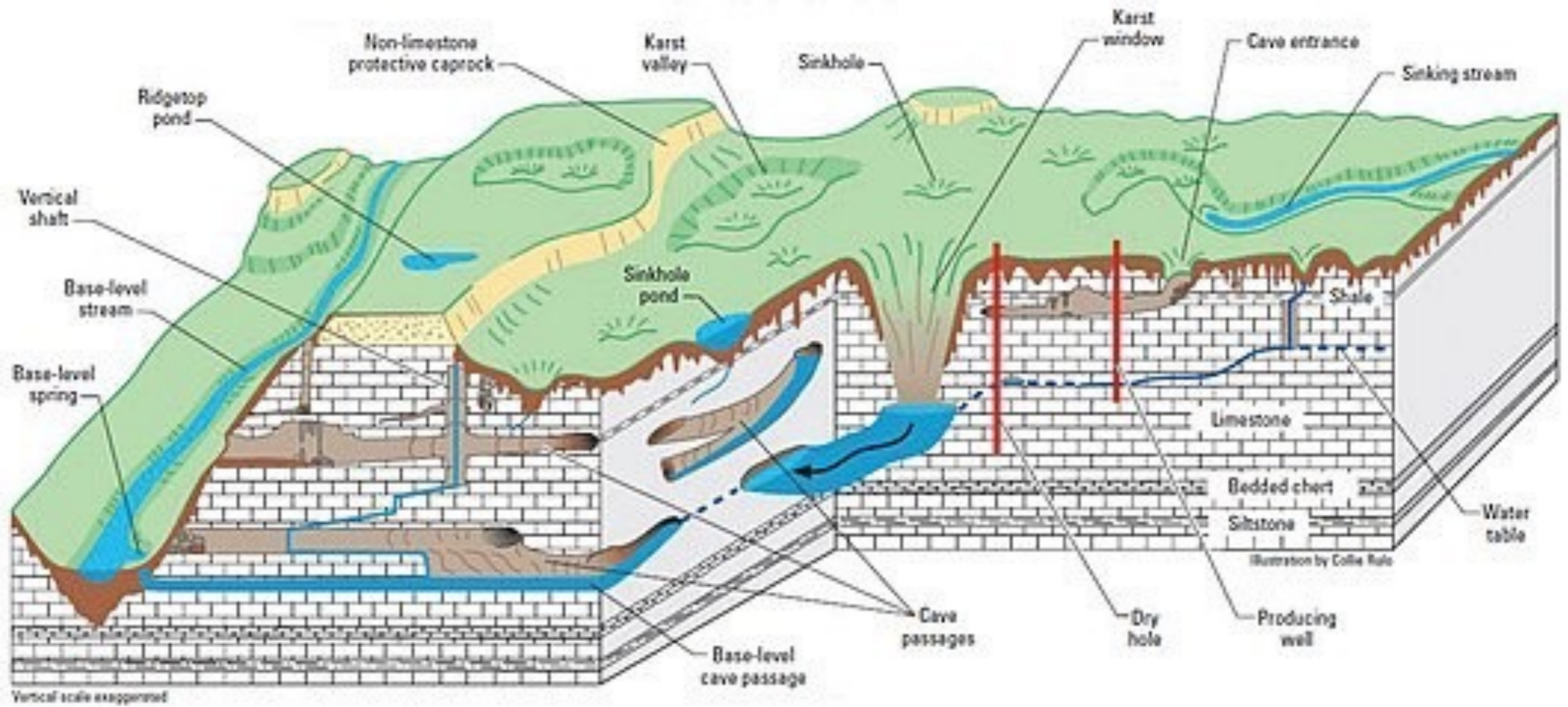
Karst
20% of US

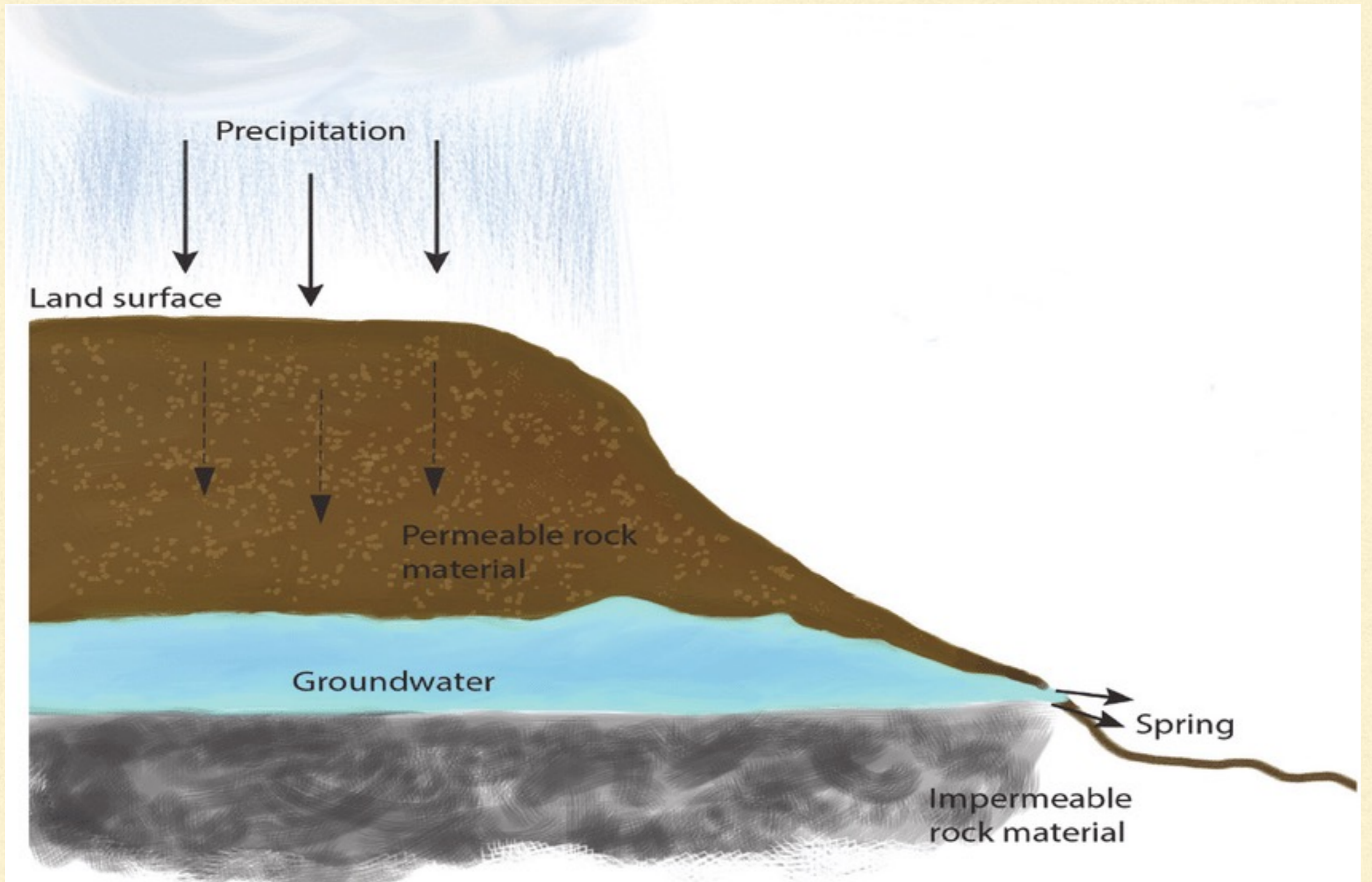
Cenote

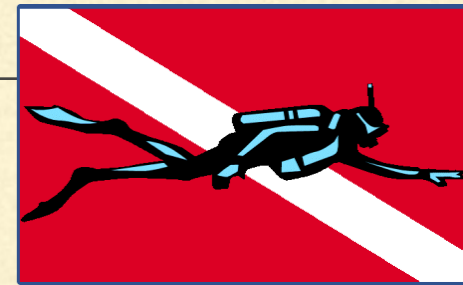
US Karst Distribution



*Fig. 1. Distribution of karst in the lower 48 states of the United States
(http://water.usgs.gov/ogw/karst/kig2002/jbe_map.html).*







Classification and Types

Flow Rate: (Magnitudes)

- **1st Magnitude:** 65 mil gallons / day ... **33 in Florida**
- **2nd Magnitude:** 6.5-65 Mil Gal / Day
- **3rd Magnitude** .65-6.5 Mil Gal / Day

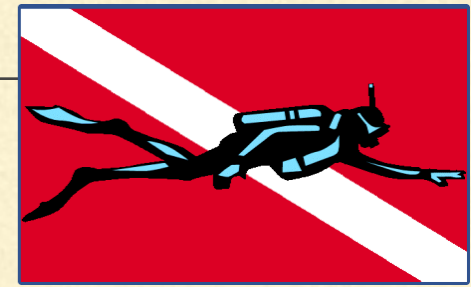
Rainbow Spg
Crystal Rvr /Kings Bay
Homosassa Spg
Manatee Spg
Weeki Wachee Spg
Ginnie Spg
Etc

Types of Diving:

Shore

Boat

Drift



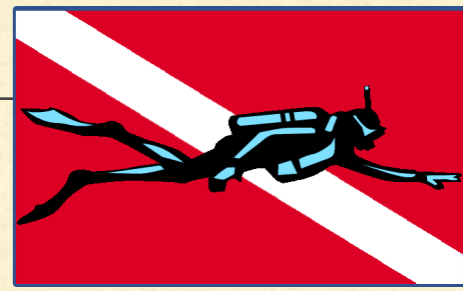
Thermoclines and Haloclines

Thermocline:

- Water Temp changes abruptly with depth

Halocline:

- Water Type changes abruptly at depth (salinity)
-



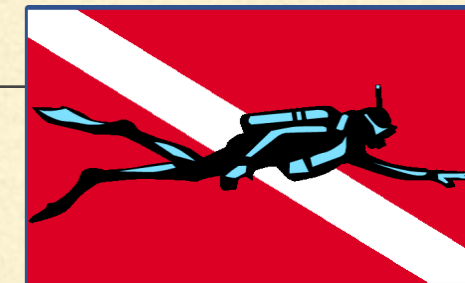
Why Dive in a Spring?

Advantages

- **Accessibility**
- **Less expensive ???**
- **Visibility (Tanic)**
- **Constant temp...72**

Disadvantages:

- **Overhead environment**
 - **Silt**
 - **Crowds**
 - **Flow...in & out**
 - **Emergencies**
-

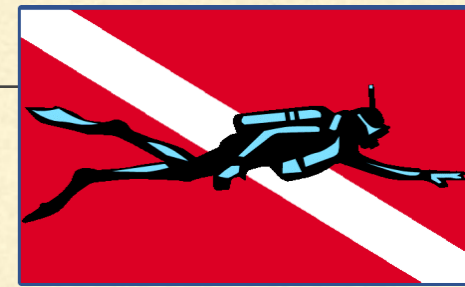


CAVERN OR CAVE ?

Can you see the exit
????

Training required
!!!!





What to Do and See?

Refresher

Clean your gear

Check New Gear

Check serviced gear

Practice Buoyancy

Practice skills



Fossil

Carving

Bone

Fish

Turtle

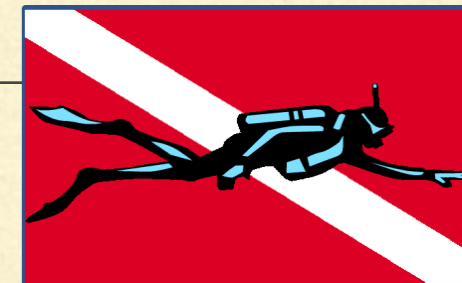
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Local Springs

Alexander
Springs

Madison
Blue

Ginnie
Springs

Juniper

Blue
Grotto
Devils
Den

Manatee

Peacock
Springs

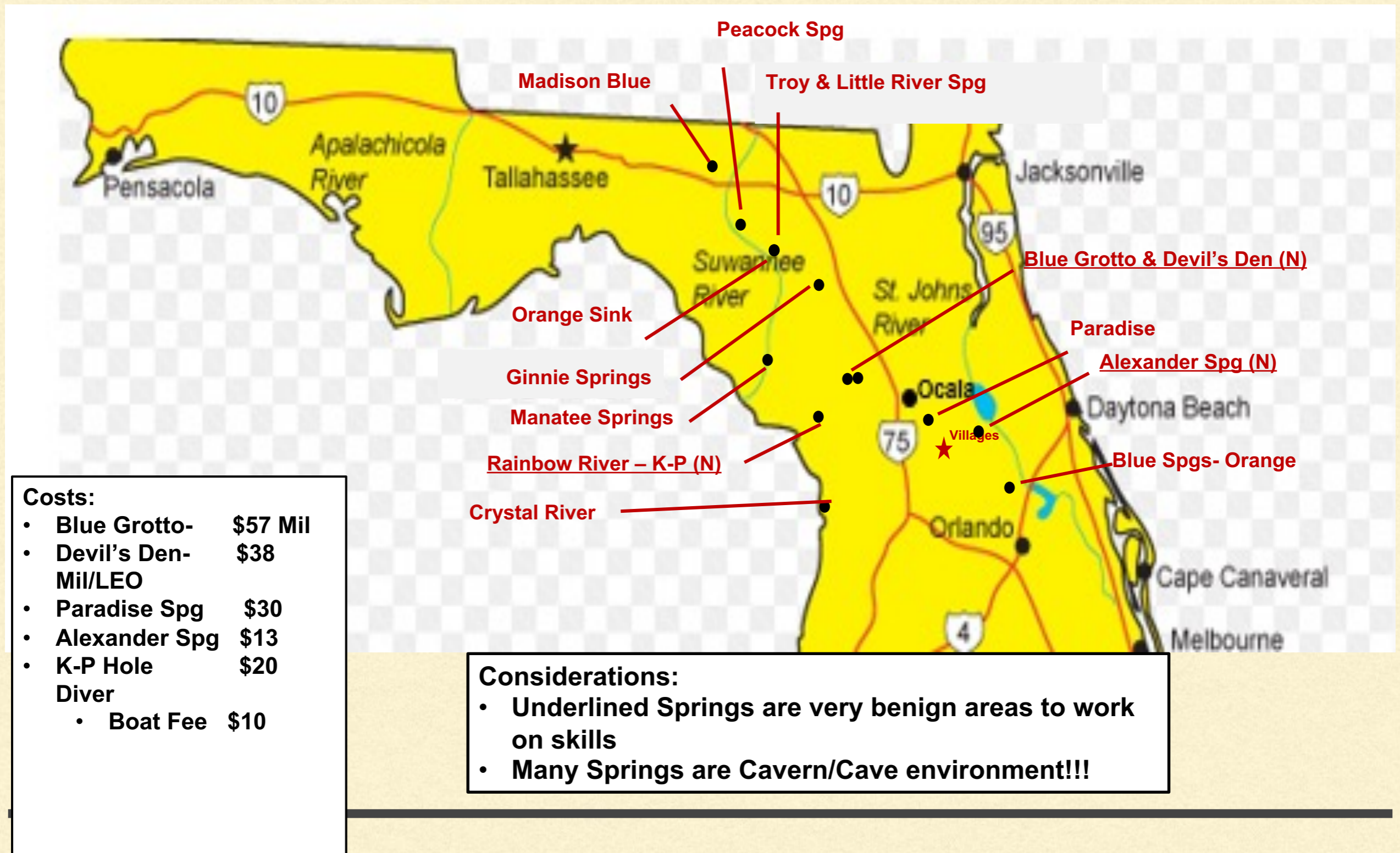
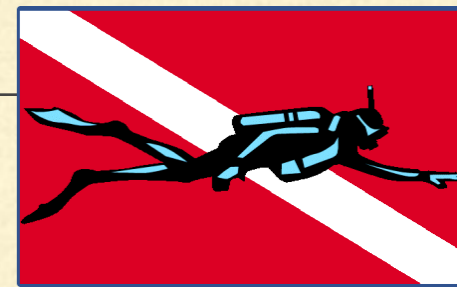
Rainbow
Springs

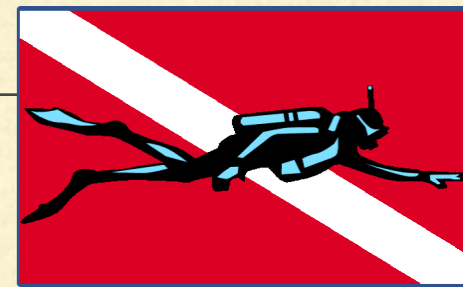
Blue
Spring

Crystal

Springs Weekie Wachee

Local Springs

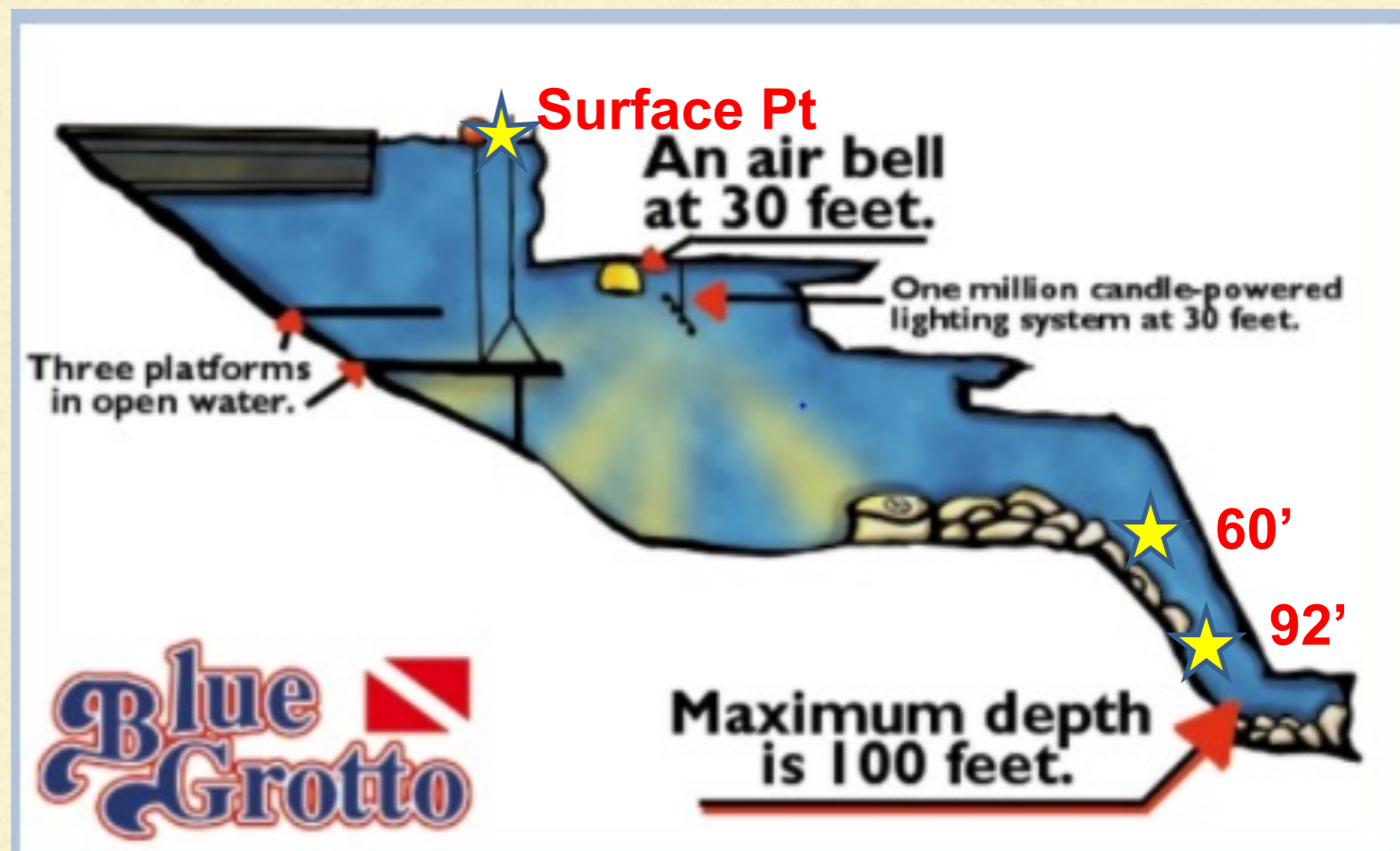


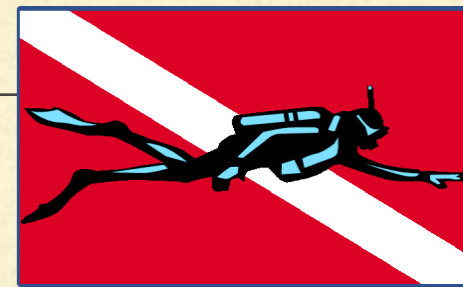


Blue Grotto

- Very popular Scuba Training Site with An Open Water Section, A Large Cavern (55'), and a Lower Chamber Drop down to 100'. (Cave Warning Signs at Lip)
- Three Training Platforms in the Open Water Area.
- Silty Slope in Open Water Area.

- 2 Miles NW of Williston on 27.
- Covered Pavilions for Gear Setup and Training.
- Onsite Camping and Rooms.
- Full Equipment Rentals.
- Air/Nitrox Fills.
- Bathhouse with Showers.
- \$57.00 Entry Fee – Have a Military Discount.

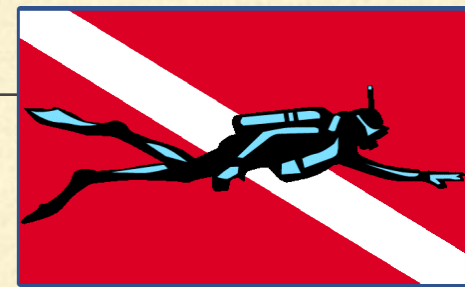




Devils Den

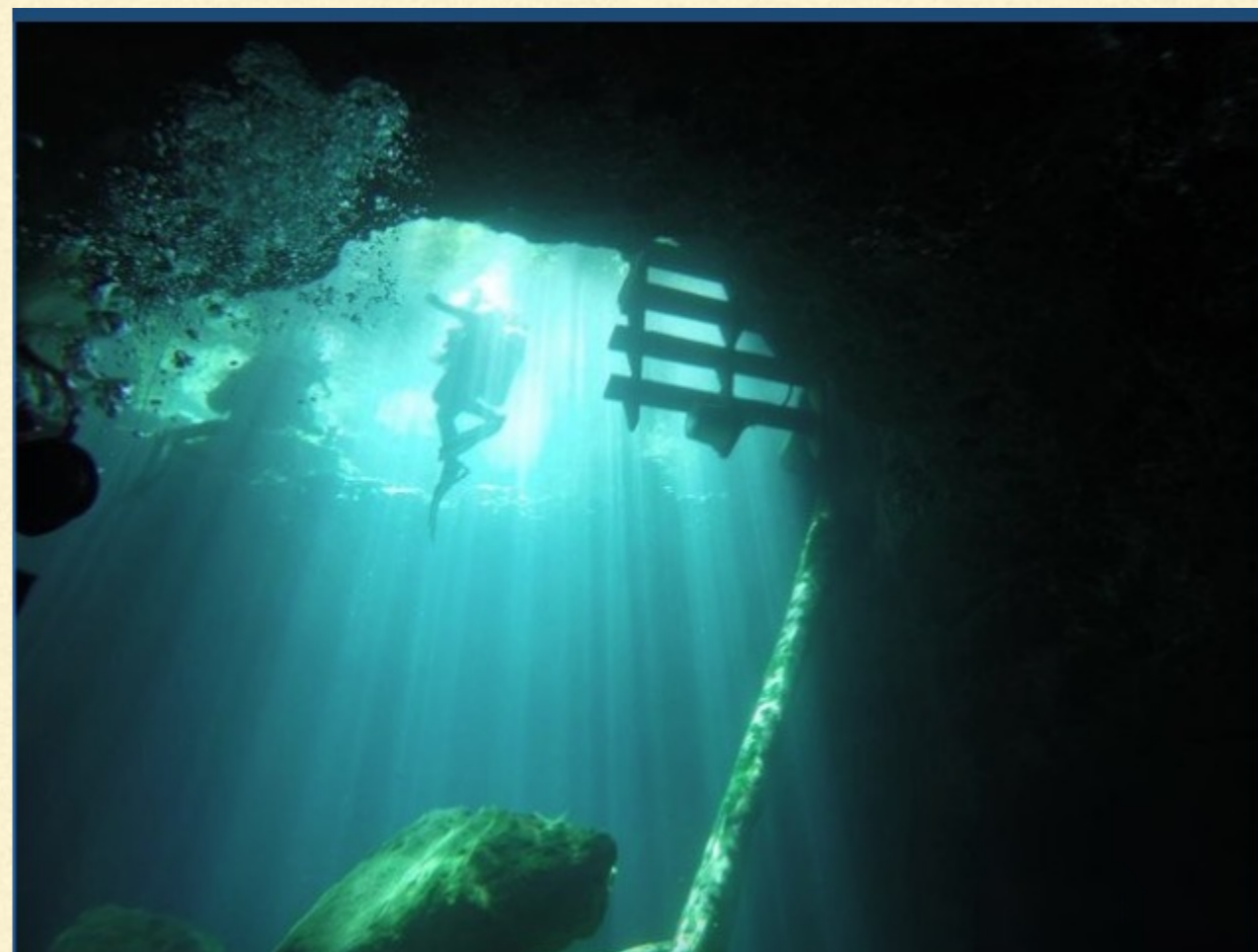
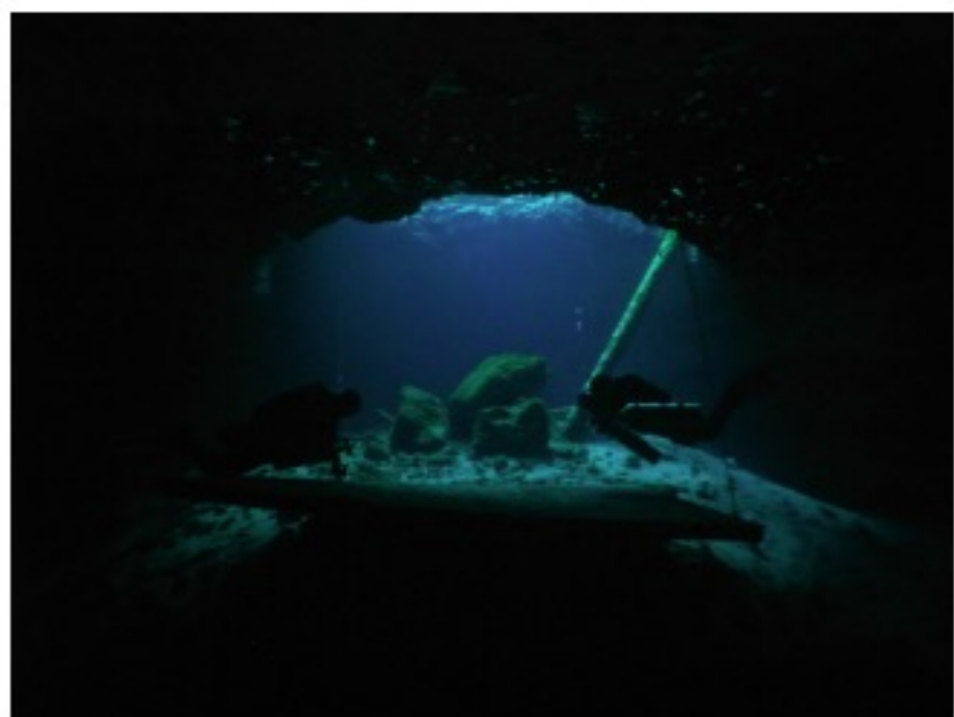
- Sinkhole with Water Level 40' below surface level.
 - Both Scuba Diving and Snorkeling Permitted (Snorkeling by Reservation Only).
 - Maximum Depth is around 55 feet.
 - Multiple “Swim-Thru’s”.
-
- 1 Miles NW of Williston on 27. – Approx. 1 Mile from Blue Grotto
 - Covered Pavilions for Gear Setup and Training.
 - Onsite Camping and Rooms.
 - Full Equipment Rentals.
 - Air Fills.
 - Bathhouse with Showers.
 - \$38.00 Entry Fee – Have a Military Discount.

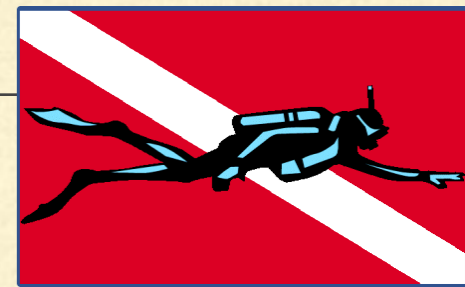




Paradise Springs

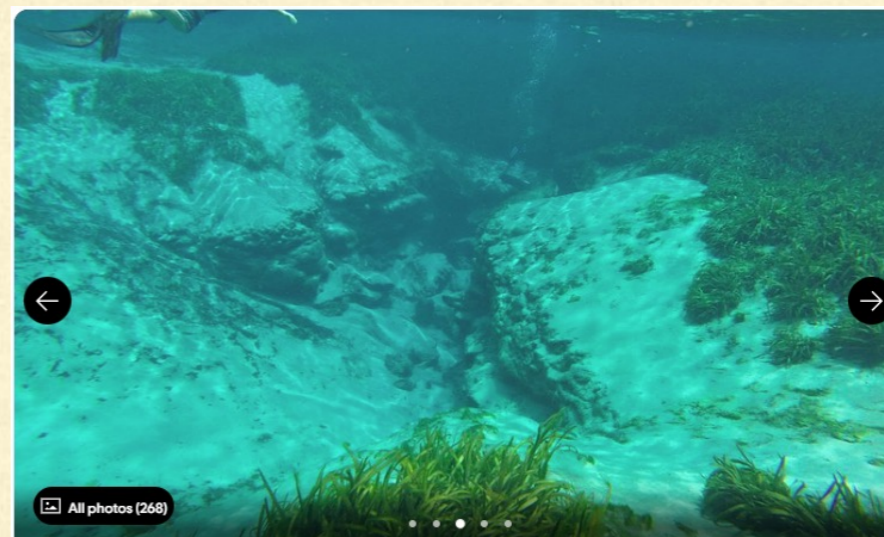
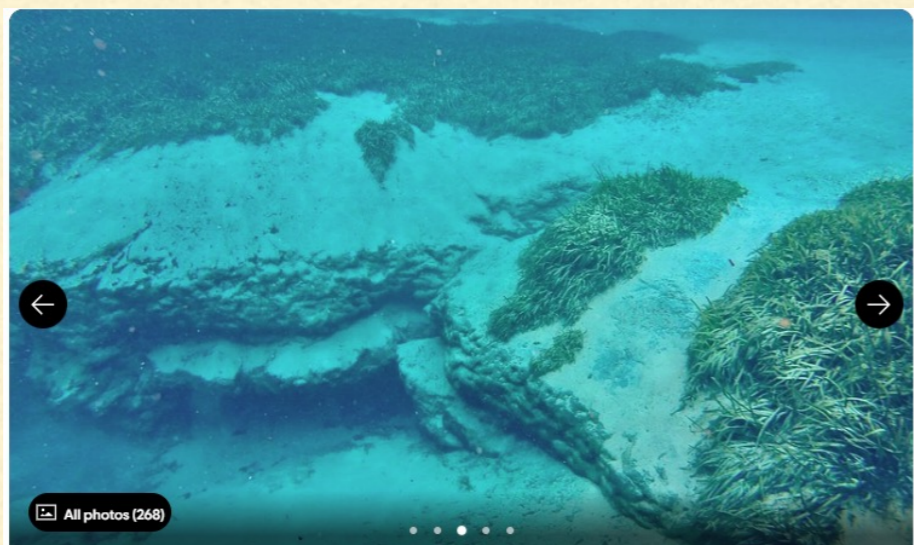
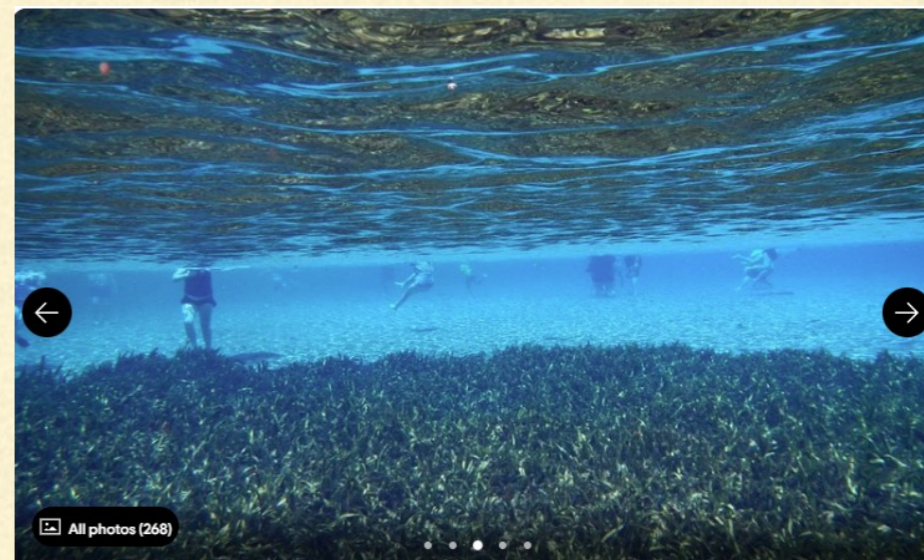
- **Privately Owned Spring South of Ocala off SR 441.**
- **Cavern at about a 30 Degree angle down to 99 feet. Smaller Side Cavern.**
- **At end of cavern, Cave Entry down to 140 feet – Certified Cave Divers Only below that point.**
- **Open Weds-Sun. Closed Mon/Tues.**
- **\$30.00 Fee – CASH Only.**
- **Silty Bottom – Buoyancy!!!**

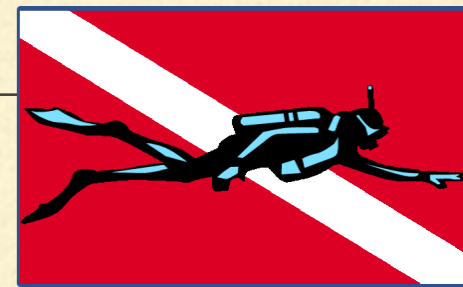




Alexander Springs

- Part of Ocala National Forest (US Forest Svc)
- Main Part of Spring- 6-8 Feet deep.
- Central Spring Vent area – 16-18 Feet
- \$13.00 Daily Access Fee
- Very Popular with Snorkelers and Bathers.





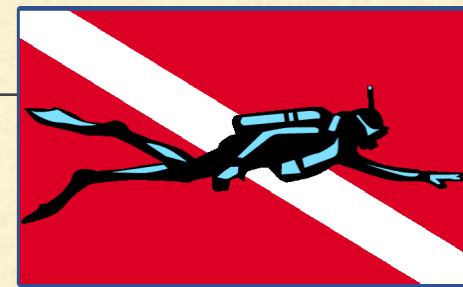
Ginnie Springs

Ginnie Cavern and Ballroom:
Among a handful of sites that experts consider sufficiently safe to allow exploration by divers who lack formal caver or cave diving training



The Devil's Spring System:

- Devil's Eye
- Devil's Ear
- Devil Spring "Little Devil"
- NO Light Areas. Only certified Cave and Cavern Divers are allowed to enter these areas with lights

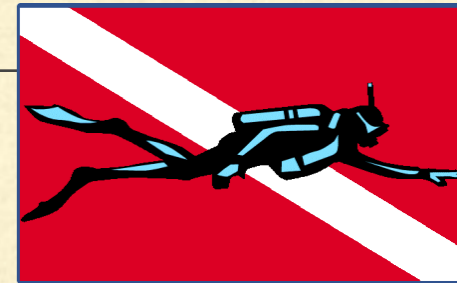


Rainbow River Drift Dive

- **Leisurely ~1 hour Drift Dive down River.**
- **Maximum Depth is 20 feet.**
- **Number of Spring Vents along the Route.**
- **Animal life: Turtles, Blue Gills, Gar, Etc**
- **Change Facillites.**

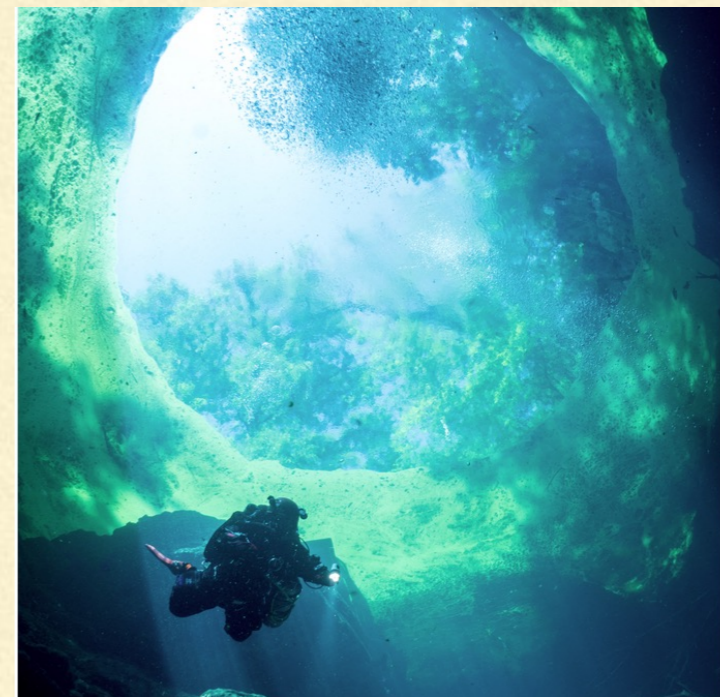


- **Access Rainbow River at K-P Hole Park outside Dunellen.**
- **\$20.00 Per Diver.**
- **Coordinate with onsite Pontoon Boat to Travel to Upstream Drop Point.**
- **\$10.00 Boat Fee.**



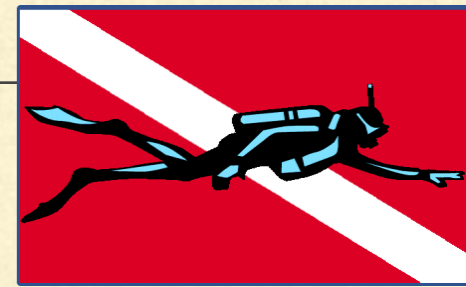
Peacock Spring /Orange Grove Sink

- 30,000 feet of documented passages and rooms.
- Cavern and Cave diving available to **CERTIFIED** divers available at both Peacock Springs and Orange Grove Sink.
- Open Water Diving are allowed at Orange Grove Sink ONLY.
- Open Water Divers are NOT permitted to carry lights.



Equipment Considerations

(Site Dependent)



Tarp or Mat

Lights (Allowed?)

Cutting Tools

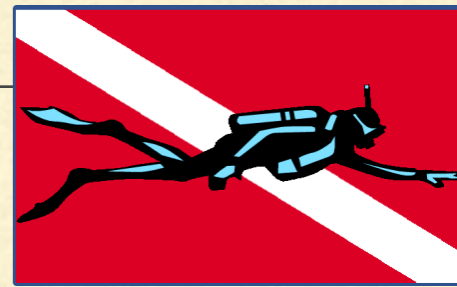
Lines, Reels. Floats, Flags

First Aid, O2, AED

Save-A-Dive Kit

Extras?

Safety



EAP*

Dive Conservatively

Streamline gear

Silting

Phone

Flow rate

Cert level

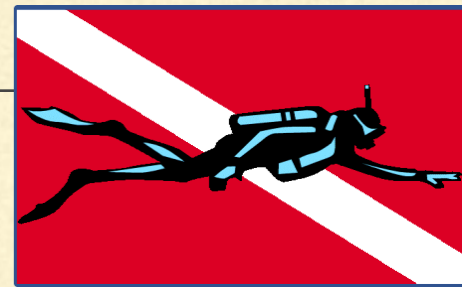
Overhead

Finning & Flailing

Water

Buoyancy

***Emergency Action Plan**



PLANNING

Type of Spring and Type of Diving... Equip accordingly

Private? Park?

Cert Level and Cards

Contingency Planning

Facilities

Logistics

