Who Uses Waterways & Why: Case Study of Alexander Springs

Grade level: 6-12

Time: 1-2 class periods depending upon depth teacher goes into unit

Concept:
- Social Studies: migration, biogeographic interaction
- Science: karst landscape (aquifer and caverns), interaction of plants and animals
- Math: measurement
- English: metaphor

Generalization: This lesson uses literature to introduce student to the case study of Alexander Springs by examining the physical and cultural characteristics of Florida.

Objectives: Students will be able to:
1) interpret descriptive information about Florida's physical and cultural character by reading and discussing the story.
2) write an essay that is either persuasive, explanatory or narrative in style.
3) incorporate vocabulary associated with the natural environment of Florida's springs in discussion and essay.
4) demonstrate ability to read a map.

Materials:
- Conserving Florida’s Water poster
- “Nature’s Euphoria” by Jon Harrington, from Atlas of Florida on CD-ROM (included at end of lesson plan)
- Other materials the teacher may garner from weblists
- FCAT and Florida Writes rubrics and forms

Procedure:
1. Have students read story. If this is for 6-7th graders you may want to introduce vocabulary, or have them work in groups.
2. Uses guided discussion for the questions below:
   a. Locate Alexander Springs Run. Measure the distance that a mullet would have to travel to get to Alexander Springs from the ocean. Why do mullet make this journey? What other types of fish migrate?
   b. What is a “boil”? Why does water flow from the boil? Where does the water come from that flows into the springs? Why is this water a constant 72 degrees? (Can be used to introduce karst topography)
   c. Often when we think of water we think of all the things we can do with it. Name some plants and animals that must live in on or along shore of a river or run. What are their interactions with this body of water?
d. What is the metaphor the author uses? Do you think this euphoria is caused by the place or by the activity? Are activities and places always linked? Write a short story about an activity that is related to one of Florida’s waterways.

**Evaluation:**
1. Use the short response rubrics and answer forms for F-CAT style questions.
2. Write a persuasive/explanatory/narrative essay in Florida Writes format. Have students exchange papers for correction and to brainstorm ideas.

**National Geography Standards:**
Standard 1: Students know and understand how to use maps and other geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective.
Standard 2: Students know and understand how to analyze the spatial organization of people, places, and environments on the Earth’s surface.
Standard 4: Students know and understand the physical and human characteristics of places.
Standard 15: Students know and understand how physical systems affect human systems.

**Sunshine State Standards:**
SS.B.1.4.5: understands how various factors affect people’s mental maps.
SS.B.2.1.1: identifies some physical and human characteristics of places.
SS.B.2.3.3: understands how cultures differ in their use of similar environments and resources.

**Glossary:**
- **Adjacent:** next to, close by
- **Aquifer:** an underground layer of porous rock
- **Boil:** the site where groundwater enters a stream
- **Euphoria:** a feeling of well-being
- **Generation:** all the people born and living at the same time
- **Limestone cavern:** a large cave in an aquifer system
- **Migration:** the moving together of a group of animals to another region
- **Remnant:** what is left over
- **Sprawl:** to spread out unevenly
- **Upstream:** against the current of a river
Native’s Euphoria
By Jonathan Harrington

I sit on the porch swing sipping sweet iced tea from a tall glass. The aroma of orange blossoms lingers in the breeze that rattles the palm fronds in the trees behind my house. I watch a kingfisher diving for fish in the placid lake, and remember my years of exile.

It took five years of living in the cold cities of the North to realize that the Florida I call home and the images of Florida conjured by most snow-bound residents of the northern latitudes are two very different places. When I would describe my home in Central Florida—ten acres on a lake near the edge of the Ocala National Forest—to Northern Friends, they were incredulous. Most of them had been to Florida. But what they had seen—suburban sprawl, gaudy tourist attractions, plastic, neon and asphalt—was nothing like the Florida that I described.

Florida, where I was born and raised, the home I fled from and returned to, is an area of lakes, rivers, springs, creeks, orange groves, and jungle. The Ocala National Forest, the only subtropical forest in America, is alive with wildlife: deer, turkeys, black bears, alligators, wild hogs, bobcats. It is a land of slow, hot evenings when frogs, crickets, and other creatures create a tremendous racket. A rural area in a mostly urban state, it is a land of pickup trucks, Bar-B-Q stands, crackers, blacks, retirees, and the remains of a crippled citrus industry.

While many people in Florida are relatively recent arrivals to the state, I grew up with people who have lived in Florida for generations. Their grandparents homesteaded vast tracts of land from which they hacked out citrus groves. Here the Old South meets the tropics and the values of the South still linger. Yet it is not the South. It is Florida. And Florida has always been and always will be, I hope, a different kind of place.

There is one special place near my home that is among the most beautiful spots in our state. Located approximately an hour and a half north of Orlando off State Road 19, Alexander Springs is one of numerous springs in the Ocala National Forest. Adjacent to the springs are facilities for camping, picnicking, swimming, and hiking.

Although most visitors come by car and park at the national park entrance, I like to put my canoe in at the bridge on Country Road 445 near Astor and paddle upriver to the spring. There is nothing so peaceful as this quiet creek just before dawn. A mist hangs over the water as the sun peeks through the lush shoreline of pine trees and sabal palms. The aroma of pine needles wafts across the stream, and the splash of an alligator slipping off the bank into the water scares up a blue heron that wings its way into the rising sun. This is a scene I have witnessed hundreds of times and of which I never tire.

The creek originates in the “boil” of Alexander Springs, a thirty-foot-deep cavity from which the water bubbles. Alexander is classified as a “first magnitude” spring which pumps over 80 million gallons of water a day from the underground aquifer. This water remains a constant 72 degrees throughout the year.

In the area around the spring the Timucuan Indians followed a traditional way of life, gathering shells, hunting, and fishing. Remnants of their culture in the form of arrowheads and shell mounds can still be
found along the Timucuan Indian Trail that leads off into the dense forest. The trail is posted with interpretive markers that give the names of various plants and explain their significance in the lives of the Timucuan people.

I land my canoe near the spring and swim over the boil with a mask and snorkel. Through the incredibly clear water, I see schools of mullet (which come up-stream from the ocean), bass, bream, and many other fish. The boil is aquamarine, and the white, sandy bottom of the spring glows as if it were phosphorescent.

The boil is popular among scuba divers. On the bottom of the boil are limestone caverns that lure curious divers into their recesses. Some of the divers have never returned to the surface. I am told that they develop a condition known as nitrogen narcosis, in which the diver becomes disoriented and loses consciousness. But other people say that the divers experience a euphoria down deep. Awed by the beauty that surrounds them, they find themselves unable, or unwilling, to return to the surface.

Such has been my love affair with the subtropical latitudes of Florida.

As a child, I daydreamed of the world outside the confines of these lakes and hammocks, sand hills, and forests. At the first opportunity, I left to find that world. But I carried the images of my home with me, through the frozen reaches of the Midwest, and the industrial sprawl of the Northeast, and I knew that one day I would come home. Now I am back, living on the same ten acres where my father planted his roots half a century ago. Now that I am here again, I find myself struck with the diver’s euphoria.

I do not know if I will ever surface.