- 1. Ammonand Wolfe. "Does Chlorophyll have Bactericidal and Bacteriostatic Activity?" Arzneimettel-Forschung. 5,1995 312 p.
- 2. S. Miller. Chlorophyll for healing. «Science News Letter», 1941. –171 p.
- 3. Yoshihide Hagiwara. Young barley plant juice. «The green and health association», 1980, Tokyo, Japan. 23 p.
- 4. T. Nishyama, Y. Hagiwara, T. Shibamoto. A novel antioxidant isolated from young green barley leaves. «Agric. and. Food Chemistry», 1992, V. 40, No.7. 14 p.
- 5. W. Mc. Offenkrantz. Complete healing of peptic ulcer with water-soluble chlorophyll. «American Journ. of Gastroenterology», 1955, V. 24 182 p.

## CREATING A CULTURE OF CONSERVATION THROUGH EDUCATION AND PARTNERSHIPS IN THE AREA OF ICHETUCKNEE SPRINGS STATE PARK

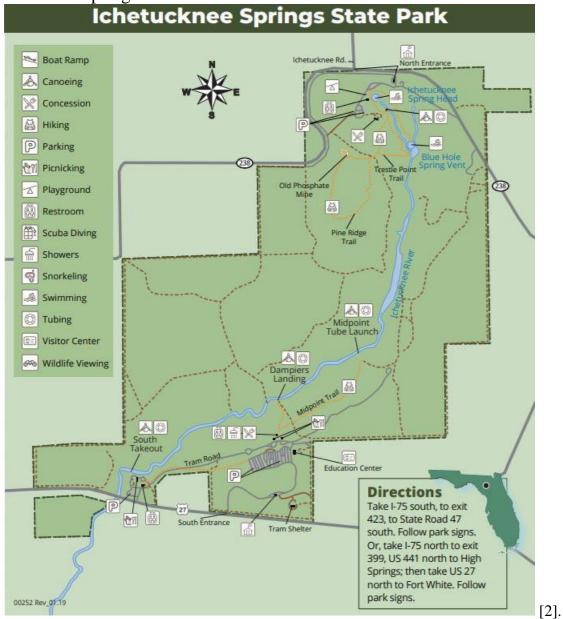
Kelly Thomas,
Science 8th Grade Teacher
Columbia County Schools Florida
Lake City Middle School
Florida, USA
Olexander Romanenko,
Cand. ped. Science, Associate Professor of Tourism,
Faculty of Natural Geographical Education and Ecology,
NATIONAL PEDAGOGICAL DRAGOMANOV UNIVERSITY
Kyiv Ukraine

North Florida's geology is unique due to the numerous springs and karst environment that are present in the area. With over 300 documented springs, nineteen of which are first magnitude, the area has attracted people for thousands of years. As we strive to encourage a continued fascination with nature in our area, we also must teach preservation of the ecology and responsible tourism to protect our unique environment.

The geology of the area dates back to the Paleozoic era and the Iaptus Ocean closure. Caves and springs in our area have developed within Paleogenic limestone deposits [3]. Deep below the ground, these limestone deposits today encase fresh water that is the source of Florida's drinking water. The limestone layers range from thousands of feet thick to extremely thin. In some areas the limestone layers are even exposed along river banks. Atmospheric carbon dioxide reacts with rainwater thus creating a slightly acidic condition in the waters that filter down into the Floridan Aquifer. This process results in the dissolution of the carbonate rocks, or limestone, leading to underground caves. As the dissolution continues, these caves sometimes encroach toward the surface resulting in a collapse called a sinkhole. In addition, springs occur when water pressure in the Florida Aquifer causes the water to erupt

into another body of water. This happens often along the rivers of our area and the springs range in the size of the opening and volume of water that extrudes into the

river where the spring is located



Our springs are excellent indicators of the health of the Florida Aquifer. As rainwater and runoff percolates through the soil and limestone into the aquifer, it carries with it nutrients and pollutants. Additionally, reduction of flow from springs is an indicator of a decreased volume within the aquifer. Since we depend on the aquifer for our drinking water, maintaining a healthy balance is paramount. For decades now, scientists have been studying the health of the aquifer through the springs. Concerns for nitrate pollutants causing an algae overgrowth within the springs brought rise to the necessity for analysis and action plans beginning in the early 1950s. [5]. Since that time, numerous partnerships, organizations, and alliances have been established to focus on maintaining the health of the Florida Aquifer and educating the public of the importance of "saving our springs".

One such group, The Ichetucknee Partnership, has a strong focus on school and community based programs that encourage children and their families to conserve,

protect and control. Reminding students that water is not an unlimited resource and encouraging them to do small things like turning the water off when they brush their teeth is an important first step in the younger age group [2]. Beginning in the middle grades, students work with the partnership to educate younger children in the "Buddy Program" that began in 2013. These older students teach lessons to young children. In addition to teaching younger children, the middle school students begin working in the state park where the Ichetucknee Springs are located. These students, along with older students take part in monitoring the water health, studying the carrying capacity of tourists who canoe the river, and even organize clean up events. Events to remove invasive plant species are led by students on a regular basis. Most recently, students walked several acres of the park surrounding the springs and river, removing showy rattlebox [4]. Showy rattlebox also called showy crotalaria (*Crotalaria spectabilis*) has been found to be toxic to livestock, pets and game animals and birds. Removal of this invasive species is important to the health of the environment.

Tourism is an integral part of the area's economic system. Many families run small businesses that are supported by the tourists in the area. Along with the economic benefits to the community, the people of the area realize that appreciation for the beauty of the springs drives conservation. Therefore the community loves to have visitors from all over the world come see the unique Ichetucknee Springs basin. For this reason, conservation and protection of the environment is a part of the culture of the communities surrounding the Ichetucknee Springs State park. In 1978, studies were initiated to ensure that visitors would enjoy the springs and the river they create, while protecting the flora and fauna present within them. An initial carrying capacity was established but further study proved this capacity was too high so a more strict limit of human presence on the river was enacted for a portion of the river. Over the years, human impact has been closely monitored to maintain a balance between the nature that we love and allowing human enjoyment of its beauty. The partnership and alliances, along with students at area schools play an important role in monitoring and record keeping for these studies [1].

Through ongoing efforts to educate the public about the importance of conservation, a healthy balance has been achieved. As we move forward, maintaining this balance is best achieved by reaching the young people of the area and continuing the culture of caring for the unique and beautiful environment in which we live. Groups like Friends of the Ichetucknee and Ichetucknee Alliance in conjunction with state organizations like Suwannee River Water Management District and the State Parks will continue to encourage and cultivate the attitude of protection and management that will result in the health of the environment for the future.

References

- 1. Cole, S. (2018). When the Masses meet the grasses. Retrieved February 14, 2021, from https://www.floridastateparks.org/learn/when-masses-meet-grasses #:~:text=The%20former%201%2C500%2Dlimit%20was,the%20carrying%20capacit y%20used%20today.
- 2. Donaldson, J. (2019). The Ichetucknee Partnership. Retrieved February 12, 2021, from http://www.ichetuckneepartners.org/

- 3. Florea, L. J. (2008). Geology and hydrology of KARST in west-central and North ... Retrieved February 12, 2021, from https://digitalcommons.wku.edu/cgi/viewcontent.cgi?article=1030&context=geog\_fac\_pub
- 4. Friends of THE ICHETUCKNEE. (2020, October 28). Retrieved February 12, 2021, from https://www.facebook.com/FriendsofIchetucknee/posts/1509981199195159
- 5. Ichetucknee alliance. (2021). Retrieved February 12, 2021, from https://ichetuckneealliance.org/hydrology/

## Тенденції освітньої теорії та практики на території ПП «Беремицьке»

LOCAL HISTORY MUSEUM OF NATURE PARK «BEREMYTSKE» AS AN ORGANIZATIONAL AND METHODOLOGICAL CENTER OF SCHOOL LOCAL HISTORY AND TOURISM ADVENTURE

> Polina Gurzhiy magister of Tourism Vadym Golovko senior lecturer at the Department of Tourism Faculty of Natural and Geographical Education and Ecology NATIONAL PEDAGOGICAL DRAGOMANOV UNIVERSITY Kyiv Ukraine

The formation of tourism in rural areas of the country can be significantly influenced by school and extracurricular tourism-oriented museum and local history activities. It should be career-oriented to create a local tourist product and appropriate forms of tourist hospitality, the development of which will affect the production and economic activities of people and their socially responsible behavior for the environment. At the same time, the career guidance of tourism and local lore activities of school (extracurricular) groups will always have the support of the local population, business people and local authorities. This is especially important for museums created in protected areas and considered as an effective means of spiritual, moral, patriotic and civic education of children and youth.

At Pridesen, the creation and development of a museum complex in the Nature Park Beremytske can become an effective form of cooperation between the public and private sectors, promote the formation of museum-tourist forms of management in the tourism sector, and become a driving force for rural revival.

The emergence and development of out-of-school local lore museums is connected with the public needs to use them as one of the most effective means of