

# Florida Springs Field School

**SUMMER 2017** August 20-23, 2017

**INSTRUCTOR** Robert L. Knight/Howard T. Odum Florida Springs Institute  
[bknight@floridaspringsinstitute.org](mailto:bknight@floridaspringsinstitute.org)  
[www.floridaspringsinstitute.org](http://www.floridaspringsinstitute.org)  
386-454-2427

**CLASS SCHEDULE** Detailed schedule to be determined.

## Description

Applied and theoretical aspects of the ecology and management of Florida's artesian springs.

## Enrollment

This course is offered through the Howard T. Odum Florida Springs Institute (FSI) and not currently affiliated with any university. It is open to anyone with an interest in studying springs in detail.

## Recommended Reading List

- 2008 - **Effects of Nutrients in Springs** (Brown, Knight, et al. - Florida Department of Environmental Protection)
- 2004 - **Springs of Florida** (Florida Geological Survey Bull. No. 66)
- 2002 - **First Magnitude Springs of Florida** (Florida Geological Survey Bull. No. 85)
- 2014 - **Silenced Springs: Moving from Tragedy to Hope** (Robert L. Knight)

## Course Description

Florida's artesian (deep groundwater) springs are an important natural resource, providing the basis for extensive wildlife support and human recreation. These springs and the Floridan Aquifer that feeds them are under increasing threats from human activities, including flow reductions, nutrient increases, aquatic weed management activities, recreational impacts, and a variety of water resource development projects. A growing awareness of these problems is leading to a rapid increase in demand for knowledge about the basic chemistry, biology, and ecology of springs to be used for improved resource management. This course provides an overview of the current understanding of how springs are a product of their environmental surroundings and how they respond to management decisions.

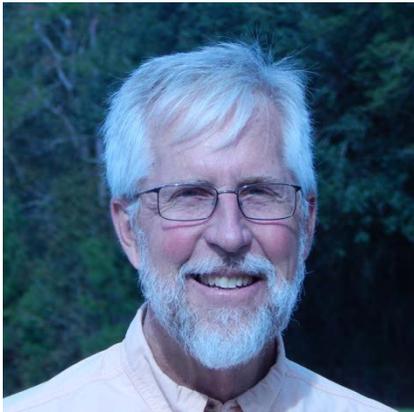
The Florida Springs Field School is scheduled for three days of lectures and field trips. The Springs Field School will be held in The Ocala National Forest at Lake in the Forest Resort

which includes a lecture hall, dining hall, camping, showers, swimming pool, and overnight cabins (at extra cost), and conveniently located just west of Ocala, Florida. Field trips are tentatively planned to Silver Springs State Park, Salt Springs, Juniper Springs, and Silver Glen Springs. The first day of the school (Sunday, August 20) will start at 10 AM with check in and cabin assignment. Each succeeding day will consist of about four hours of field visits and four hours of lectures with breaks for meals. All meals will be provided starting with Sunday's lunch. The Springs Field School will end with check-out after lunch at 1 PM on Wednesday, August 23.

## Who Should Take this Course?

This course is offered to those interested in Florida's water resources from a science, management, or administrative perspective and for those who wish to develop or sharpen their understanding of aquatic ecology in general. Information from all related physical, chemical, biological, and economic disciplines will be integrated to allow an understanding and appreciation of the role that springs play in overall support for Florida's natural and human ecologies. This course should be of interest to ecologists, environmental scientists, water resources engineers, natural resource managers, and those practicing environmental law.

## Your Primary Instructor



Dr. Robert L. Knight is an environmental scientist/systems ecologist. He is Director of the Howard T. Odum Florida Springs Institute and has over 35 years of experience as an aquatic and wetland ecologist in Florida. His doctoral work included an ecological assessment of Silver Springs and Silver River under the direction of Howard T. Odum. He completed assessments of the quantitative basis for establishing a minimum flow regime for protection of water and human-use resource values (WRVs) in Volusia County Blue Spring, a 50-year retrospective study of the ecological health of Silver Springs, the basis for establishing pollutant load

reduction goals and WRVs for the Wekiva River and Rock Springs Run, and a comparison of the ecology of twelve of Florida's artesian springs. Dr. Knight and the Florida Springs Institute have developed restoration action plans for Wakulla Springs, Ichetucknee Springs, the Santa Fe River springs, Silver Springs, and Rainbow Springs.

## Guest Lecturers

A number of other experts in Florida springs science and regulation will be invited to present lectures as part of this field school.

## **Course Content**

- Introduction to Florida Hydrogeology
- Distribution of Springs
- Physical Attributes of Springs
- Chemical Characteristics of Florida Springs
- Biological Variability in Florida Springs
- Integrated Ecosystem Behavior of Springs
- Human Impacts on Florida Springs
- Management of Florida Springs
- Environmental Regulations and Florida Springs

## **Preliminary Grading Basis**

The FSI will issue a Certificate of Completion to all participants based on attendance and performance on a series of short exams. A minimum of 70 points on a 100-point grading scale will be required for certification.

## **Lecture Series Topics**

### **Introduction to Florida Springs**

- Introduction to spring ecosystems
- Groundwater distribution
- Florida water balance and climatic variability
- Groundwater quality
- Spring classification and distribution
- Watershed and springshed contributions
- Springs water quality
- Florida's karst geology

### **Biological and Ecological Variability of Florida Springs**

- Primary producers
- Primary consumers
- Higher level consumers

- Detritivores
- Ecosystem structure and function
- Consumer control and carrying capacity
- Energy flows
- Ecological efficiency

### **Human Impacts and Management of Florida Springs**

- Reductions in spring discharge and MFLs
- Nutrient enrichment and TMDLs/BMAPs
- Sedimentation
- Aquatic plant management effects
- Recreational impacts
- Other water resource projects
- Publically-owned springs
- Listed species
- New state and local regulations

### **Future of Florida Springs**

- Nutrient controls/best management practices
- Water permitting/conservation
- A new environmental ethic

## **Registration Fee**

Registration for the four-day Florida Springs Field School is \$550 per person for non-FSI members and \$515 per person for FSI members. A non-refundable deposit of \$100 is required to hold your place for this Springs Field School and the full fee is due no later than Friday, August 18th. Payment should be to the Howard T. Odum Florida Springs Institute and 50% is tax deductible. The minimum enrollment target is 15 persons and the maximum enrollment is 50. If the course is cancelled for any reason FSI will provide a 100% refund.

