

## **STAFF DEVELOPMENT COMPONENT INFORMATION**

**COMPONENT TITLE:** Florida Master Naturalist Program: Wetland Systems of Florida

**IDENTIFIER NUMBER:** 2015008

**MAXIMUM POINTS:** 35

### **GENERAL OBJECTIVE:**

Participants will demonstrate increased knowledge in biology, and environmental science instruction. This will include knowledge of Florida's wetland systems, of the plants and animals that depend upon those systems, and the role of humankind in shaping our past, of determining our future, and as stewards of the land. The participants will demonstrate competency in the use of provided materials in instructional applications in the classroom including but not limited to field experiences and reading in the subject area with all students grade K-12.

### **SPECIFIC OBJECTIVES:**

Within the duration of this component participants will:

1. Demonstrate an understanding of wetland ecology including:
  - a. Ecosystems and ecological scale
  - b. Florida's geologic history and Karst topography
  - c. The climate, and hydrology of Florida
  - d. Watersheds and Florida's five water management districts
  - e. Types of wetlands including marshes, swamps, rivers, lakes, and springs
  - f. Ground water/aquifers
  - g. Trophic structure and nutrient cycling
  - h. Invasive exotic species
  - i. Economic value of wetland communities
  - j. Threats to wetland communities
  - k. Conservation, management and restoration within wetland communities
2. Demonstrate an understanding of wetland habitats including:
  - a. Types of marshes including floodplain wetlands, basin wetlands, wet flatlands, and seepage wetlands
  - b. Types of swamps including river swamps, basin swamps, Melaleuca dominated swamps, hydric pine flatwoods, and seepage swamps
3. Demonstrate an understanding of wetland plants ecology including:
  - a. Resource partitioning (zonation), including emergent, floating, and submersed plants
  - b. Plant identification techniques including root, stem and leaf types
  - c. Representative herbaceous plant species and their role in the ecology of wetland systems
  - d. Representative woody plant species and their role in the ecology of wetland systems
  - e. Conservation and interpretation of wetland plants
4. Demonstrate an understanding of invertebrate species found in wetland systems including:
  - a. Arthropods, mollusks, and worms

- b. Adaptations and ecological function of representative species
  - c. Conservation and interpretation of wetland invertebrates
- 5. Demonstrate an understanding of invertebrate species found in wetland habitats including:
  - a. Reptiles and amphibians
  - b. Diversity and ecology of fresh water fish
  - c. Diversity and ecology of water birds
  - d. Diversity and ecology of birds of prey
  - e. Diversity and ecology of mammals
  - f. Conservation and interpretation of representative vertebrate species
- 6. Demonstrate an understanding of interpretation within wetland systems including:
  - a. Concepts and components of interpretation
  - b. Communicating with your audience
  - c. Developing a theme and structure for interpretive programs
  - d. Spoken presentations, guided tours, and spontaneous information
  - e. Working with children
- 7. Develop an understanding of ethical issues in wetland systems including:
  - a. Philosophy and general components of environmental ethics
  - b. Tips for protecting resources through planning
  - c. Specific issues related to wetland systems of Florida
  - d. Individual lifestyles and management of natural resources

## **DELIVERY PROCEDURES:**

Participants will:

1. Attend in-service presentations on the Wetland Systems of Florida
2. Observe demonstration lessons taught by in-service provider which highlights strategies presented in the workshops
3. Complete a final project as required by the Florida Master Naturalist Program
4. Develop and implement plans for a classroom lesson applying strategies presented in the in-service presentations. This can be part of the final project.
5. Participate in the follow-up activities

## **EVALUATION PROCEDURES:**

Participants will:

1. Demonstrate a minimum of 80% of the component objectives as measured by pre- and post-tests or other valid measures
2. Demonstrate increased competence as indicated by valid measures of performance as required in Florida Statute 231.508 (1) on eighty (80) percent of the specific objectives of a component that is used for certification
3. Develop a lesson and create relevant materials to demonstrate an understanding of Florida's Wetland Systems
4. Teach a lesson incorporating the wetland systems of Florida. Submit a copy of the lesson plan to document the incorporation of the strategies

5. Submit written documentation of required hours for the component and complete a component evaluation

#### **FOLLOW-UP PROCEDURES:**

1. Collect data affirming that activities/implementation have impacted instruction and increase student achievement
2. Provide written/oral reflections
3. Analyze student performance data
4. Share ideas, research, lesson plans and/or best practices
5. Provide and share feedback regarding implementation of activities

#### **COMPONENT EVALUATION:**

All participating teachers will assess the degree to which the seminar lectures, activities and classroom modules addressed the specific objectives and will make recommendations for revisions through the component evaluation.