

## High School Wetland Ecology Description and TEKS Inside/Outside 3 – 3 ½ hours

During this hand-on field study, students will be briefed on the different types of wetlands, three factors that make a wetland and how to explore and gather data in the wetland. Field and lab studies will include water quality testing, macroinvertebrate collection and identification, and plant identification. Students will determine the water quality of the wetland by analyzing and interpreting the data collected in the field. Macroinvertebrates and the biotic and abiotic factors affecting their health will be the highlighted during the lesson. Each group will receive data gathering tools: Test kits for abiotic testing, collection materials for biotic testing, nets, collection containers and turbidity tube, The blackland prairie and wetland ecosystems will also be discussed with direct observation of the ecotone between them. Emphasis will be given to research, observation, and data collection.



### **Environmental Systems TEKS (this is only a brief overview of the TEKS covered.)**

The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to explain phenomena or design solutions using appropriate tools and models. (1.A, D & F)

Relationships of biotic and abiotic factors within habitats, ecosystems, and biomes; explain the cycling of water, phosphorus, and nitrogen through ecosystems measure the concentration of dissolved substances such as dissolved oxygen, chlorides, and nitrates and describe their impacts on an ecosystem (5.B, C, & D)

Interrelationships among the resources within the local environmental system; relate how water sources, management, and conservation affect water uses and quality. (6.B & C)

Evaluate indicators of air, soil, and water quality against regulatory standards to determine the health of an ecosystem. (10.D)

### **Aquatic Science (this is only a brief overview of the TEKS covered)**

The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations. (1.D)

The student knows about the interdependence and interactions that occur in aquatic environment (7.A, B & E)

Collect and analyze, pH, temperature, nitrogen compounds, dissolved oxygen and turbidity data (8.B)

The student knows the origin and potential uses of fresh water. Analyze water quantity and quality in a local watershed or aquifer. (10.C)

The student knows environmental adaptations of aquatic organisms. Compare different traits in aquatic organisms using tools such as dichotomous keys; Describe how adaptations allow an organism to exist within an aquatic environment. (13.A & B)

