VIRTUAL EXPLORATION OF GEORGIA'S COASTAL WETLANDS

GUIDE TO EDUCATIONAL STANDARDS

Science Georgia Standards of Excellence

ECOLOGY:

SEC1. Obtain, evaluate, and communicate information on how biotic and abiotic factors interact to influence the distribution of species and the diversity of life on Earth.

a. Develop a model describing the organizational structure of a habitat within an ecosystem. (Clarification statement: Includes biotic and abiotic factors and the organizational structure; organism, population, community, ecosystems.)

b. Ask questions to predict the cause and effect of varying levels of abiotic and biotic factors on a habitat in Georgia. (Clarification statement: Focus on specific habitat types, not biomes.)

c. Construct an argument based on evidence to explain factors that lead to sustainability of biodiversity in an ecosystem.

SEC3. Obtain, evaluate, and communicate information to construct explanations of community interactions.

c. Construct an explanation based on evidence that describes the impact of keystone, invasive, native, indicator, and rare species in Georgia ecosystems.

d. Construct an explanation about species diversity and how it relates to the stability of ecosystems and communities.

SEC5. Obtain, evaluate, and communicate information on the impact of natural and anthropogenic activities on ecological systems.

a. Analyze and interpret data on the ecological impacts of sustainable and non-sustainable use of natural resources and predict the cause and effect of unsustainable use of natural resources on ecosystems.

b. Construct an argument based on evidence to predict the impact of climate change on an ecosystem.

c. Construct an argument based on evidence of the consequences of habitat fragmentation and habitat loss on biodiversity in relation to island biogeography.

d. Obtain, evaluate, and communicate mitigation strategies to reduce the impacts of non-sustainable activities on Georgia ecosystems.

ENVIRONMENTAL SCIENCE:

SEV4. Obtain, evaluate, and communicate information to analyze human impact on natural resources.

a. Construct and revise a claim based on evidence of the effects of human activities on natural resources.

Human Activities: Agriculture, Forestry, Ranching, Mining, Urbanization, Fishing, Water use, Pollution, Desalination, Waste water treatment

Natural Resources: Land, Water, Air, Organisms

b. Design, evaluate, and refine solutions to reduce human impact on the environment including, but not limited to, smog, ozone depletion, urbanization, and ocean acidification.

Next Generation Science Standards

HS-ESS3-1 Earth and Human Activity

Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.

HS-LS2-7 Ecosystems: Interactions, Energy, and Dynamics

Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.

References

1. Georgia Department of Education. Science Georgia Standards of Excellence. https://www.georgiastandards.org/Georgia-Standards/Documents/Science-Ecology-Georgia-Standards.pdf
2. Georgia Department of Education. Science Georgia Standards of Excellence. https://lor2.gadoe.org/gadoe/file/5ade13de-199c-493e-88a7-e441a00ad6a9/1/Science-Environmental-Science-Georgia-Standards.pdf
3. Next Generation Science Standards. https://www.nextgenscience.org/
4. National Research Council. 2012. A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas. Washington, DC: The National Academies Press. https://doi.org/10.17226/13165.