Unit 2 : Ecology

Content Area: **Science**
Course(s): **Environmental & Earth Science**
Time Period: **Second Marking period**
Length: **7 Weeks**
Status: **Published**

Unit Overview

Unit 2 covers the study of Ecology with more focus on population and population growth. It also covers the topic of evolution and how species interact to achieve community stability. In this unit, students also explore the major biomes with all their unique characteristics. The last topic of this unit addresses biodiversity and its impact on the sustainability of ecosystems.

STAGE 1- DESIRED RESULTS

Standards- 2020 New Jersey Student Learning Standards- Science

SCI.9-12.HS-LS2-4	Use a mathematical representation to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.
SCI.9-12.HS-LS2-1	Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.
SCI.9-12.HS-LS2-2	Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.
SCI.9-12.HS-LS2-6	Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.
SCI.9-12.HS-LS2-8	Evaluate the evidence for the role of group behavior on individual and species' chances to survive and reproduce.
SCI.9-12.HS-LS4-5	Evaluate the evidence supporting claims that changes in environmental conditions may result in: (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.

Science and Engineering Practices

- Analyzing and Interpreting Data
- Asking Questions and Defining Problems
- Constructing Explanations and Designing Solutions
- Developing and Using Models

- Engaging in Argument from Evidence
- Obtaining, Evaluating, and Communicating Information
- Planning and Carrying Out Information
- Using Mathematics and Computational Thinking

Cross Cutting Concepts

- Cause and Effect
- Energy and Matter
- Influence of Engineering, Technology, and Science on Society and the Natural World
- Interdependence of Science, Engineering, and Technology
- Patterns
- Scale, Proportion, and Quantity
- Stability and Change
- Structure and Functions
- Systems and System Models

Disciplinary Core Ideas

Physical Sciences

- PS1A: Structure and Properties of Matter
- PS1B: Chemical Reactions
- PS1C: Nuclear Processes
- PS2A: Forces and Motion
- PS2B: Types of Interaction
- PS3A: Definitions of Energy
- PS3B: Conservation of Energy and Energy Transfer
- PS3C: Relationship Between Energy and Forces
- PS3D: Energy in Chemical Processes and Everyday Life
- PS4A: Wave Properties
- PS4B: Electromagnetic Radiation
- PS4C: Information Technologies and Instrumentation

Life Sciences

- LS1A: Structure and Functions
- LS1B: Growth and Development of Organisms
- LS1C: Organization for Matter and Energy Flow in Organisms
- LS1D: Information Processing
- LS2A: Interdependent Relationships in Ecosystems
- LS2B: Cycles of Matter and Energy Transfer in Ecosystems
- LS2C: Ecosystems Dynamics, Functioning, and Resilience
- LS2D: Social Interactions and Group Behavior
- LS3A: Inheritance of Traits
- LS3B: Variation of traits
- LS4A: Evidence of Common Ancestry and Diversity
- LS4B: Natural Selection
- LS4C: Adaptation
- LS4D: Biodiversity and Humans

Earth and Space Sciences

- ESS1A: The Universe and its Stars
- ESS1B: Earth and the Solar System
- ESS1C: The History of Planet Earth
- ESS2A: Earth Materials and Systems
- ESS2B: Plate Tectonics and Large-Scale Systems
- ESS2C: The Role of Water in Earth's Surface Processes
- ESS2D: Weather and Climate
- ESS2E: Biogeology
- ESS3A: Natural Resources
- ESS3B: Natural Hazards
- ESS3C: Human Impacts on Earth Systems
- ESS3D: Global Climate Change

Engineering. Technology. and Applications of Science

- ETS1A: Defining and Delimiting an Engineering Problem
- ETS1B: Developing Possible Solutioins
- ETS1C: Optimizing the Design Solution

Essential Questions

- How do changes in population size relate to environmental conditions?
- How do ecologists organize and study life?
- What are the important characteristics of populations?
- What factors do determine whether, and how, a population's size changes?
- How do organisms affect one another's survival and environment?
- What role does the environment play in an organism's survival and reproduction?
- How do species interact in nature?
- How do energy and nutrients move through communities?
- How do communities respond to a disturbance?
- How does the environment affect where and how an organism lives?
- What abiotic and biotic factors are used to classify biomes?
- What conditions and organisms do characterize the world's biomes?
- What conditions and organisms do characterize the world's aquatic ecosystems?
- What is biodiversity?
- Why is it important to protect biodiversity?
- Why is global biodiversity decreasing?
- How can we protect and preserve biodiversity?

Enduring Understanding

- Life on earth depends on interaction among organisms and between organisms and their environment.
- Scientists have identified and described over 1.5 million species.
- The Sun provides the energy for almost all of the ecological communities and species interactions on Earth.
- Human systems work together to create an interconnected system.
- Organisms attain, transform, transport, release, and eliminate matter and energy to sustain life.
- Biodiversity losses caused by humans are common in our history.
- The major biomes of our planet are characterized primarily by the region's seasonal temperature and annual rainfall or humidity.

Students will know..Students will do.....Suggested activities/Strategies

Standards	Students will know	Students will do	Suggested Activities/ Strategies

HS-LS2-6	• Ecologists study life at many levels, from individual organisms to the entire biosphere.	• Describe the different levels of organization studied by ecologists.	• Figure 1: Ecological Organization, *(Pearson Environmental Science: Your World, Your Turn,* 2011, p.100*).*
HS-LS2-6	• Ecosystems include both biotic and abiotic factors.	• Explain the difference between biotic and abiotic factors.	• Lab: Classification of Biotic and Abiotic Factors.
HS-LS2-1	• Organisms depend on resources provided by their habitat for survival.	• Discuss how an organism's habitat relates to its survival.	• Case Study: Golden Toad Ecosystem. • Give different examples of how organism's habitat is related to its survival. • Video: Planet Earth.
HS-LS2-6	• The overall health of a population can often be monitored by tracking how its size changes.	• Explain the usefulness of tracking population size.	• Case Study: The Decline of the Passenger Pigeon. • Case Study: The Decline of the Dodo Bird.
HS-LS2-2	• A population's density is a measure of how crowded it is.	• Define population density and explain how it can be distributed.	• Case Study: The Harlequin Frog. • Case Study: The Easter Island Population Decline.
HS-LS2-2	• Population can be distributed randomly, uniformly, or in clumps.	• Describe the three ways populations can be distributed.	• Interactive application to show the three models of population distributions. • Figure 5: Population Distribution, *(Pearson Environmental Science: Your World, Your Turn,*

			2011, p.107*).*
HS-LS2-2	• Age structure diagrams show the number of males and females in different age groups within a population.	• Explain what age structure diagrams tell you about a population.	• Figure 6: Age Structure Diagram, *(Pearson Environmental Science: Your World, Your Turn,* 2011, p.108*).*
HS-LS2-2	• A population's growth rate is determined by births, deaths, immigration, and emigration.	• Describe the factors that influence a population's growth rate.	• Figure 8: Survivorship Curves, *(Pearson Environmental Science: Your World, Your Turn,* 2011, p.111*).* • Analyze data related to population growth rate, e.g., Turkey Vulture. • Figure 10: The Population Growth Equation, *(Pearson Environmental Science: Your World, Your Turn,* 2011, p.113*).*
HS-LS2-2	• Populations can grow exponentially or logistically.	• Explain exponential growth and logistic growth.	• Figure 11: Exponential Growth, *(Pearson Environmental Science: Your World, Your Turn,* 2011, p.114*).* • Students to use different sets of data to differentiate between exponential growth and logistic growth.
HS-LS2-1	• Limiting factors and biotic potential regulate a population's growth.	• Explain how limiting factors and biotic potential affect population growth.	• Video: Limiting Factors. • Case Study: Cabazon, Orangutans, and Great Black-backed Gulls.

HS-LS2-6	• Biological evolution can occur through mutation, migration, genetic drift, and natural selection.	• Describe the four primary mechanisms of biological evolution.	• Students to give at least one example of the following biological evolution mechanism: - Mutation - Migration - Genetic Drift - Natural Selection • Figure 2: Natural Selection, *(Pearson Environmental Science: Your World, Your Turn,* 2011, p.128*).* • Video: Natural Selection. • Figure 3: Artificial Selection, *(Pearson Environmental Science: Your World, Your Turn,* 2011, p.130*).*
HS-LS2-6	• Two processes, speciation, and extinction, combine to produce the diversity of life on Earth.	• Describe how speciation and extinction affect the diversity of life on Earth.	• Figure 4: Allopatric Speciation, *(Pearson Environmental Science: Your World, Your Turn,* 2011, p.131*).* • Students to search the major 5 mass extinction events.
HS-LS2-6	• An organism's niche is affected by both its tolerance and competitive interactions.	• Discuss the factors that influence an organism's niche.	• Students to define The following: - Niche - Tolerance - Resource Partitioning • Figures 7,8,9: Fundamental and Realized Niche, *(Pearson Environmental Science: Your World, Your Turn,* 2011, p.135*).*
HS-LS2-8	• Predation, parasitism, and herbivory are interactions in which one species benefits	• Compare and contrast predation, parasitism, and herbivory.	• Graph: Wolf and Moose Population on Isle Royale, Michigan. • Case Study: The

	while the other is harmed.		Evolution of the Rough-Skinned Newt. • Case Study: Antibiotic Resistance.
HS-LS2-8	• Mutualism and commensalism are relationships in which neither participant is harmed.	• Describe mutualism and commensalism.	• Related Videos. • Define and give examples of the following relationships: - Mutualism - Commensalism - Parasitism
HS-LS2-8	• Organisms are classified as either producers or consumers based on how they obtain energy and nutrients.	• Explain the difference between a producer and a consumer.	• Figure 19: Electromagnetic Spectrum Chart, *(Pearson Environmental Science: Your World, Your Turn,* 2011, p.142*).* • Compare and contrast photosynthesis and cellular respiration. • Real Data: Energy Flow in Communities, *(Pearson Environmental Science: Your World, Your Turn,* 2011, p.144*).*
HS-LS2-8	• Inefficient energy transfer between organisms shapes the structure of a community.	• Explain the effect of inefficient energy transfer on community structure.	• Activity: Thermogram. • Figure 22: Pyramid of Energy, *(Pearson Environmental Science: Your World, Your Turn,* 2011, p.145*).*
HS-LS2-8.	• Feeding relationships have both direct and indirect effects on organisms in the community.	• Describe how feeding relationships can have both direct and indirect effects on community members.	• Figure 26: Food Web, *(Pearson Environmental Science: Your World, Your Turn,* 2011, p.147*).* • Lab: Keystone Species.

HS-LS2-6	• Following a disturbance, communities may undergo succession.	• Describe what happens to a community after a disturbance.	• Lab: Successful Succession. • Figures 29, 30: Primary and Secondary Succession, *(Pearson Environmental Science: Your World, Your Turn,* 2011, pp.150: 151*).*
HS-LS2-6	• Without limiting factors, species introduced to a new area can become invasive.	• Explain the conditions necessary for a species to become invasive.	• Investigate the following invasive species: - Zebra Muscle - European Honeybee - Kudzu Plants - The Cane Toad • Design an invasive species.
HS-LS2-4	• Biomes are characterized by their climates as well as typical plant and animal life.	• Explain how biomes are characterized.	• Figure 1: Earth's Major Biomes, *(Pearson Environmental Science: Your World, Your Turn,* 2011, p.156*).* • Search the average temperature and precipitation in the past three years for the local community.
HS-LS2-4	• Biomes vary in their rates of net primary production. Warm and wet biomes have the highest net primary production, and cold, dry biomes have the lowest.	• Describe how net primary production varies among biomes.	• Analyze and evaluate the net primary productivity for all biomes.
HS-LS2-6	• Earth Biosphere is divided into 6 major biomes.	• Describe the major features of each biome including biotic and abiotic factors.	• Activity: Biome Model, *(Pearson Environmental Science: Your World, Your Turn,* 2011, p.179*).*

HS-LS2-6	• Ecologists classify aquatic ecosystems according to criteria such as salinity, depth, and whether the water is flowing or standing.	• Describe the criteria ecologists use to classify aquatic ecosystems.	• Figure 5: Light and Dark, *(Pearson Environmental Science: Your World, Your Turn,* 2011, p.182*).*
HS-LS2-6	• Standing freshwater ecosystems include ponds, lakes, inland seas, and wetlands. Flowing freshwater ecosystems include rivers and streams.	• List the major categories of freshwater ecosystems.	• Lab: Collecting water samples from local lakes and ponds. • Videos: - Wetland - Marshes - Swamps - Estuaries
HS-LS2-6	• Estuaries are home to diverse ecosystems that prevent soil erosion and flooding.	• Explain the ecological importance of estuaries.	• Figure 9: Marshes and Mangroves, *(Pearson Environmental Science: Your World, Your Turn,* 2011, p.186*).*
HS-LS2-6	• The ocean can be divided into three zones based on their distance from shore: intertidal, neritic, and open ocean.	• List the three major zones of the ocean.	• Figure 11, 12: The Intertidal Zone, *(Pearson Environmental Science: Your World, Your Turn,* 2011, pp.188: 189*).* • Related Videos.
HS-LS2-2	• Species diversity, genetic diversity, and ecosystem diversity are all parts of an area's overall biodiversity.	• Differentiate the components of biodiversity.	• Figure 3: Ecosystem Diversity, *(Pearson Environmental Science: Your World, Your Turn,* 2011, p.202*).*
HS-LS2-2	• Biodiversity varies among taxonomic groups and geographic regions.	• Explain two ways in which biodiversity varies across groups or geography.	• Figure 4: What Insects are Kings, *(Pearson Environmental Science: Your World, Your Turn,* 2011, p.203*).*

			• Students to describe different patterns of biodiversity.
HS-LS2-2	• Biodiverse ecosystems provide economically valuable services and products	• Describe the economic benefits of biodiversity.	• Evaluate the impact of biodiversity on: - Medicine - Food - Tourism and Recreation
HS-LS4-6	• Scientists monitor biodiversity closely and have noticed significantly higher than normal extinction rates in recent decades.	• Describe how biodiversity is monitored and explain current biodiversity trends.	• Figure 8: The living Planet Index, *(Pearson Environmental Science: Your World, Your Turn,* 2011, p.208*).*
HS-LS4-6	• Habitat change and loss, invasive species, pollution, overharvesting, and climate change are the major causes of biodiversity loss.	• List the major causes of biodiversity loss.	• Figure 9: Habitat Loss, *(Pearson Environmental Science: Your World, Your Turn,* 2011, p.209*).* • Map it: Invading Muscles, *(Pearson Environmental Science: Your World, Your Turn,* 2011, p.212*).*
HS-LS4-6	• Nations can pass laws and sign international treaties that protect biodiversity.	• Explain legal actions nations can take to protect biodiversity.	• Students to search international treaties involving environmental issues.
HS-LS4-6	• Species Survival Plans manage, protect, and reintroduce threatened and endangered species.	• Explain the goal of Species Survival Plans.	• Real Data: Golden Lion Tamarin, *(Pearson Environmental Science: Your World, Your Turn,* 2011, p.214*).* • Students to propose

			"Species Survival Plan, SSP" for endangered species.
HS-LS4-6	• Strategies that manage whole ecosystems and habitats, such as the hotspot approach, conservation concessions, and wildlife corridors, protect many species at once.	• Describe three strategies for managing whole ecosystems and habitats.	• Figure 13: Endemic Species, *(Pearson Environmental Science: Your World, Your Turn,* 2011, p.215*).* • Students to analyze biodiversity hotspots on a world map, *(Pearson Environmental Science: Your World, Your Turn,* 2011, p.216*).*

Predictable Misconceptions

- Predator and prey populations are similar in size.
- The relative sizes of predator and prey populations have no bearing on the size of the other.
- Varying the population size of a species may not affect an ecosystem because some organisms are not important.
- Ecosystems are not a functioning whole but simply a collection of organisms.
- Species coexist in ecosystems because of their compatible needs and behaviors; they need to get along.
- Losing a species does not affect humans.
- All species have been discovered.
- Individuals develop traits in response to the needs of other individuals.
- Species have always gone extinct so we do not need to worry about a few animals or plants disappearing.

Modification

- IEP guideline and modification for classified students.
- Extended time for struggling students.
- When available, assignments are sent electronically through online accounts and Mac-book Air.
- Special accommodations for students with physical or visual impairments.
- Differentiated instruction.

Unit 2 Suggested Case Studies

- Invasion from Earth: Burmese Pythons in the Everglades National Parks.
- Finding Gold in Costa Rican Cloud Forest.
- Black and White and Spread All Over: Zebra Muscle in the Great Lakes.
- Too Much of a Good Thing? Elephant's Tusks in Africa.

STAGE 2- EVIDENCE OF LEARNING

Formative Assessment

- Analogy Prompt
- Debriefing
- Hand Signals
- Misconception Check
- Observation
- One Minute Essay
- Questions & Answers

- Quiz
- Self-Assessment
- Student Conference
- Think-Pair-Share
- Web or Concept Map

Authentic Assessments

- Chapter 4 Assessment, *(Pearson Environmental Science: Your World, Your Turn,* 2011, p.121*).*
- Chapter 5 Assessment, *(Pearson Environmental Science: Your World, Your Turn,* 2011, p.159*).*
- Chapter 6 Assessment, *(Pearson Environmental Science: Your World, Your Turn,* 2011, p.195*).*
- Chapter 7 Assessment, *(Pearson Environmental Science: Your World, Your Turn,* 2011, p.221*).*
- E-text: Chapter 4,5,6,and 7 Tests, *(Pearson Environmental Science: Your World, Your Turn,* 2011).
- Self-Test Assessment, *(Pearson Environmental Science: Your World, Your Turn,* 2011*).*
- Teacher–prepared Case Study Project Assessment.
- Student Workbook, *(Pearson Environmental Science: Your World, Your Turn,* 2011, p.56*).*

Benchmark Assessments

- Unit One: Final Test
- Unit One: Project Assessment
- Final Exam

STAGE 3- LEARNING PLAN

Instructional Map

Unit	Time Frame	Date	Marking Period
2	**7 Weeks:** • 5 Weeks Instruction • 2 Weeks Formative and Summative Assessment	**November and December**	**2nd**

- Assess students' prior knowledge of the related topics in the unit, (Pre-Assessment).
- Unit Case Study:

- Preview the case study.

- Read the case study.

- Assimilate the facts.

- Gather additional information.

- Map the contents.

- Make local connection.

- Create a project.

- Teacher to use formative assessment and feedback to improve students' learning.
- Students to use the textbook, or E-text, for reading and definitions.
- Teacher to use PowerPoint and multi-sensory media to introduce concepts and main points.
- Teacher to use the suggested activities, in the table above, for teaching each concept in the unit.
- Students to connect and relate unit topics to their local communities and environment, when possible.
- Students to use study guides, homework, and students' workbook for reference and feedback.
- Apply labs and outside activities as indicated in the table above.
- Teacher to guide students through authentic resources during their conduction of research and inquiries.
- Students to use graphs, charts, data table, and maps throughout the unit as indicated in the table above.
- At the end of the unit, students should present scientifically sound projects supported by evidence, data, charts, and maps.
- Unit summative assessment.

Modification/Differentiation of Instruction

Differentiation Strategies for Special Education Students

- Remove unnecessary material, words, etc., that can distract from the content
- Use of off-grade level materials
- Provide appropriate scaffolding
- Limit the number of steps required for completion
- Time allowed
- Level of independence required
- Tiered centers, assignments, lessons, or products
- Provide appropriate leveled reading materials
- Deliver the content in "chunks"
- Varied texts and supplementary materials
- Use technology, if available and appropriate
- Varied homework and products
- Varied questioning strategies
- Provide background knowledge
- Define key vocabulary, multiple-meaning words, and figurative language.
- Use audio and visual supports, if available and appropriate
- Provide multiple learning opportunities to reinforce key concepts and vocabulary
- Meet with small groups to reteach idea/skill
- Provide cross-content application of concepts
- Ability to work at their own pace
- Present ideas using auditory, visual, kinesthetic, & tactile means
- Provide graphic organizers and/or highlighted materials
- Strategy and flexible groups based on formative assessment
- Differentiated checklists and rubrics, if available and appropriate

Differentiation Strategies for Gifted and Talented Students

- Increase the level of complexity
- Decrease scaffolding
- Variety of finished products
- Allow for greater independence
- Learning stations, interest groups
- Varied texts and supplementary materials
- Use of technology
- Flexibility in assignments
- Varied questioning strategies
- Encourage research
- Strategy and flexible groups based on formative assessment or student choice
- Acceleration within a unit of study
- Exposure to more advanced or complex concepts, abstractions, and materials
- Encourage students to move through content areas at their own pace

- After mastery of a unit, provide students with more advanced learning activities, not more of the same activity
- Present information using a thematic, broad-based, and integrative content, rather than just single-subject areas

Differentiated Strategies for ELL Students

- Remove unnecessary materials, words, etc., that can distract from the content
- Provide appropriate scaffolding
- Limit the number of steps required for completion
- Gradually increase the level of independence required
- Tiered centers, assignments, lessons, or products
- Provide appropriate leveled reading materials
- Deliver the content in “chunks”
- Varied texts and supplementary materials, including visuals
- Use technology, if available and appropriate
- Differentiate homework and products
- Varied questioning strategies
- Provide background knowledge
- Define key vocabulary, multiple-meaning words, and figurative language.
- Use audio and visual supports, if available and appropriate
- Provide multiple learning opportunities to reinforce key concepts and vocabulary
- Meet with small groups to reteach idea/skill
- Provide cross-content application of concepts
- Allow students to work at their own pace
- Presenting ideas through auditory, visual, kinesthetic, & tactile means
- Role play
- Provide graphic organizers, highlighted materials
- Strategy and flexible groups based on formative assessment

Differentiation Strategies for At Risk Students

- Remove unnecessary materials, words, etc., that can distract from the content
- Provide appropriate scaffolding
- Limit the number of steps required for completion
- Gradually increase the level of independence required
- Tiered centers, assignments, lessons, or products
- Provide appropriate leveled reading materials
- Deliver the content in “chunks”
- Varied texts and supplementary materials
- Use technology, if available and appropriate

- Differentiate homework and products
- Varied questioning strategies
- Provide background knowledge
- Define key vocabulary, multiple-meaning words, and figurative language
- Use audio and visual supports, if available and appropriate
- Provide multiple learning opportunities to reinforce key concepts and vocabulary
- Meet with small groups to reteach idea/skill
- Provide cross-content application of concepts
- Presenting ideas through auditory, visual, kinesthetic, & tactile means
- Provide graphic organizers and/or highlighted materials
- Strategy and flexible groups based on formative assessment

504 Plans

Students can qualify for 504 plans if they have physical or mental impairments that affect or limit any of their abilities to:

- walk, breathe, eat, or sleep
- communicate, see, hear, or speak
- read, concentrate, think, or learn
- stand, bend, lift, or work

Examples of accommodations in 504 plans include:

- preferential seating
- extended time on tests and assignments
- reduced homework or classwork
- verbal, visual, or technology aids
- modified textbooks or audio-video materials
- behavior management support
- adjusted class schedules or grading
- verbal testing
- excused lateness, absence, or missed classwork
- pre-approved nurse's office visits and accompaniment to visits
- occupational or physical therapy

Modification Strategies

- Cooperative Grouping
- Extended Time
- Highlighted Text
- Modified Test
- Oral Directions
- Preferential Seating
- Repeated Drill and Practice
- Shortened Assisgnment
- Teacher Notes

Differentiation Strategies

Horizontal Intergration- Interdisciplinary Connections

See Appendix

Vertical Integration- Discipline Mapping

- **Middle School**

- 6th Grade: Diversity of Life and Weather and Water

- 7th Grade: Populations and Ecosystems and Planetary Science

- 8th Grade: Earth History

- **High School**

- Biology

- Anatomy and Physiology

- Chemistry

- Physics

- Forensic Science

- Zoology

- Human Impact on the Environment

Additional Materials

- ***Lab Manual and Equipment***
- ***Safety Rules and Equipment***
- ***Pearson: Environmental Science, Your World, Your Turn, 2011***
- ***Textbook, Students' Workbook, and Lab Manual***
- ***E-texts, Teacher Resources, and Students Resources***
- ***Environmental Protection Agency http://www.epa.gov***
- ***Food and Drug Administration, http://www.fda.gov***
- ***National Oceanographic and Atmospheric Administration (NOAA)***
- ***National Oceanographic and Atmospheric Administration (NOAA)***
- ***National Environmental Satellite, Data and Information Service (NESDIS)***
- ***National Marine Fisheries Service (NMFS)***
- ***National Ocean Service (NOS)***
- ***National Weather Service (NWS)***
- ***Office of Oceanic and Atmospheric Research (OAR)***
- ***Department of Health and Human Services (HHS)***
- ***Agency for Toxic Substances and Disease Registry (ATSDR)***
- ***Centers for Disease Control and Prevention (CDCP)***
- ***National Institutes of Health (NIH)***
- ***New Jersey Department of Environmental Protection***
- ***New Jersey Division of Fish, Game and Wildlife***
- ***US Fish and Wildlife Service Offices in New Jersey***
- ***Nature, http://www.nature.com/nature/index.html***
- ***Conservation Fund, http://www.conservationfund.org***
- ***Conservation International, http://www.conservation.org***
- ***Earth Justice, http://earthjustice.org***
- ***Environmental Defense Fund, https://www.edf.org***
- ***Natural Resources Defense Council, http://www.nrdc.org***
- ***Oceana, http://oceana.org***
- ***Rainforest Alliance, http://www.rainforest-alliance.org***
- ***Sierra Club Foundation, http://www.sierraclubfoundation.org***
- ***Union of Concerned Scientists, http://www.ucsusa.org***
- ***World Resources Institute, http://www.wri.org***
- ***Discovery: http://www.discovery.com***