



OPERATION: RESILIENT PLANET

Protecting Our Ecological Future

Researchers

Mission Overview

National Science Education Standards Alignment



Dr. Russell Cuhel
Ecologist
Great Lakes WATER
Institute

Mission 1: Invaders – A Constant Ecological Battle

Investigate and analyze the critical abiotic and biotic factors that define an ecosystem.

- C.4.a** All populations living together and the physical factors with which they interact compose an ecosystem.
- C.4.b** Food webs identify the relationships among producers, consumers, and decomposers in an ecosystem.
- C.4.c** For ecosystems, the major source of energy is sunlight.
- C.4.d** The number of organisms an ecosystem can support depends on the resources available and abiotic factors.
- D.3.d** The sun is the major source of energy for phenomena on the Earth’s surface, such as growth of plants, winds, ocean currents, and the water cycle.



Dr. Robert Ballard
Explorer-in-Residence
National Geographic
Society
JASON Founder and
Chief Scientist

Mission 2: Survivors – Securing a Niche

Discover the competitive strategies within a resilient ecosystem.

- C.3.c** Behavior is one kind of response an organism can make to an internal or environmental stimulus.
- C.3.d** An organism’s behavior evolves through adaptation to its environment.
- C.4.a** See above
- C.4.b** See above
- D.1.c** Land forms are the result of constructive and destructive forces.
- D.3.d** See above



Dr. Sylvia Earle
Oceanographer
Explorer-in-Residence
National Geographic
Society

Mission 3: Paradise Lost – A Fragile Environmental Recovery

Assess a degraded ecosystem by gathering historical and current evidence.

- C.4.d** See above
- D.1.c** See above
- D.3.d** See above
- F.1.g** Natural environments may contain substances (i.e., radon and lead) that are harmful to human beings. Maintaining environmental health involves establishing or monitoring quality standards related to use of soil, water, and air.
- F.2.a** When an area becomes overpopulated, the environment will become degraded due to the increased use of resources.
- F.2.b** Create a proposal to restore or preserve an ecosystem.

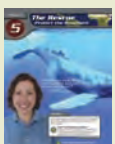


Dr. Enric Sala
Ecologist
National Geographic
Society Fellow

Mission 4: Paradise Found – Earth’s Natural Treasures

Investigate the value of a diverse biosphere.

- C.4.a** See above
- C.4.b** See above
- C.4.c** See above
- C.4.d** See above



Dr. Leila Hatch
Ocean Acoustics
Specialist
NOAA

Mission 5: The Rescue– Protect the Biosphere

Defend the Earth’s biodiversity through personal action and community involvement.

- C.3.c** See above
- F.4.a** Risk analysis considers the type of hazard and estimates the number of people that might be exposed and the number likely to suffer consequences. The results are used to determine the options for reducing or eliminating risks.
- F.4.c** Individuals can use a systematic approach to thinking critically about risks and benefits.
- F.4.d** Important personal and social decisions are made based on perceptions of benefits and risks.