The 4DEE framework seeks to:

- Describe a set of concepts and practices central to ecology as requested by the membership
- Inform students of the scope of ecology for future study and career goals
- Describe core ideas (concepts) for practitioners seeking certification as ecologists
- Inform and support instructors and education researchers seeking to incorporate ecology into their STEM education initiatives
- Identify ecology practices and skills necessary for careers in today’s and tomorrow’s environmental workforce
- Establish ESA as the leader in ecology education

For more info on the framework please visit the 4DEE website or scan the barcode
Core Ecology Concepts

Classical Ecological Hierarchy

Core Ecological Concepts follows the widely recognized hierarchy of ecology presented in most ecology textbooks, including individuals, populations, communities, ecosystems, landscapes, biomes and biosphere.

Ecology Practices include approaches and methods used in doing ecology, e.g. natural history, fieldwork, quantitative reasoning, computational thinking, designing and critiquing investigations, and collaboration.

Human-Environment Interactions include dependence on the environment, human-accelerated environmental change, how humans can use ecological systems to shape and manage resources/ecosystems/the environment, ethical dimensions and communicating and applying ecology.

Cross-Cutting Themes include structure & function, pathways & transformations of matter and energy, systems, and spatial & temporal scales and processes (including evolution). Integration across the dimensions is a hallmark of the framework. The ultimate goal is for the four dimensions to be taught as integrated units, courses, and curricula.

GET INVOLVED:

- Redesign curriculum and support ecology educators
- Reframe student advising and mentoring
- Develop research agenda on teaching and learning
- Inform professional development programs

Ecology Practices

Approaches and Methods

Cross-cutting Themes

Ways of thinking, Unifying Ideas

Human-Environment Interactions

Human Dependencies, Impacts, Ethics