

Common Cultural Ecosystem Services (CES)

Frameworks and Categories

Expanding and Deepening the Application of Cultural Ecosystem Services in Estuary Stewardship and Management

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There are a few key internationally recognized frameworks commonly cited in CES work. These include the Millennium Ecosystem Assessment (MEA or MA) and Common International Classification of Ecosystem Services (CICES). While researchers commonly cite and reference these CES categories, they should not be seen as exhaustive. Other more recent CES initiatives have expanded the possible values and categories to be considered (see our compilation of case studies for more information). Our scan of the CES literature helped us to compile a list of commonly used CES categories. While this list aims to provide a substantive picture of the types of CES that can be measured, it should not be seen as exhaustive. This list of categories draws from the research encountered in our literature search; see Sterling et al. in prep. for additional details.

List of commonly used CES categories with descriptions and examples

Activity: Recreation, Sport, Leisure, Ecotourism

Description: Includes a range of opportunities to be physically active or relax in a natural environment.

Example: *Enjoying spending time on the beach or kayaking on a river.*

Aesthetics

Description: Appreciation or meaning from visual characteristics or beauty of landscapes or seascapes; also includes appreciation from other sensory experiences (e.g., soundscapes, feel of wind, etc.).

Example: *Enjoying beautiful mountain views.*

Bequest

Description: Importance of maintaining landscapes and seascapes for future generations.

Example: *Protecting vulnerable habitats and engaging in sustainable harvesting practices so that coastal wetland resources are available for future generations.*

Ceremony/Sacred

Description: Places, plants, animals, or other natural elements that are sacred and/or important for ceremonies.

Example: *Maintaining knowledge of species used for specific cultural ceremonies, including when and how to engage in sustainable harvesting of those species.*

Cultural Heritage

Description: Multi-generational interactions/connections with landscapes and/or resources through cultural traditions, stories, and/or past events, etc.

Example: *Benefit from knowing that one's ancestors resided in a particular place or engaged in a particular occupation over time.*

Cultural Subsistence

Description: Place-based practices (e.g., fishing, farming) that not only provide material goods, but also perpetuate local knowledge, cultural norms, and cultural values surrounding those practices.

Example: *Nearshore fishing practices and their associated norms, values, behaviors (e.g., family care for coral reefs, gear restrictions to limit waste, elders fishing with children and transmission of Indigenous and local knowledge).*

Education/Scientific knowledge

Description: Ecosystems and their components and processes provide the basis for both formal and informal education and learning.

Example: *Conducting research in a specific ecosystem and teaching others what was learned.*

Fulfilling stewardship

Description: The satisfaction or benefit in carrying out the responsibility and role of caring for and managing the environment and its resources.

Example: *Caring for the coastline provides benefits / satisfaction.*

Identity

Description: Sense of self; personal or community identity that is intimately tied to a particular place or practice.

Example: *An important part of who I am / how I identify myself to others is in regards to the place I grew up and how I was raised.*

Indigenous/Local Knowledge

Description: Lived experience of Indigenous and/or local communities over time, and the associated transmission of knowledge, which shape interactions with the environment.

Example: *Knowledge of seasonal abundance or spawning seasons informs local harvesting periods.*

Inspiration

Description: Feeling stimulated, often for creative outlets, by being in nature.

Example: *A song or painting that was created or heavily influenced by the creator's time spent in nature.*

Intrinsic Value

Description: The value nature has "for its own sake"; the idea that nature has value even if it does not benefit humans.

Example: *A particular forest is inherently valuable regardless of the services or benefits it contributes to humans.*

Livelihood

Description: Ecosystems play an important role in supporting and sustaining populations dependent upon them for survival.

Example: *Healthy wetland ecosystems can enable and support diverse ways of acquiring life necessities or otherwise making a living (e.g., subsistence fishing and farming, and/or occupations in fishing, farming, conservation, and outreach education).*

Material/Subsistence/Use

Description: The adequate provision (in quality and quantity) of locally and/or culturally meaningful resources for human needs and use.

Example: *Availability of culturally-significant plants for harvest, made possible by having those resources in adequate quality (health) and quantity (abundance).*

Option

Description: Future unknown and speculative benefits or the importance that people give to the future availability of ES for personal benefit.

Example: *I have never spent time enjoying coral reefs (e.g., through snorkeling), but I may want to in the future.*

Physical and Mental Health/Well-being

Description: Spending time in nature for physical (e.g., cognitive functioning, physiological changes) and mental (e.g., stress reduction, feeling of peace) benefits.

Example: *Walking in a forest can reduce stress levels.*

Religion, Spirituality, Mindfulness

Description: Gaining deeper meaning from metaphysical forces larger than oneself or beyond one's comprehension; interacting with nature in a way that perpetuates spiritual beliefs and practices.

Example: *A particular place that is important for connecting with something greater than oneself or mediation.*

Sense of Place

Description: Sense of belonging to and connection with landscape/seascapes.

Example: *I feel I belong to this place, being associated with this place is integral to who I am as a person.*

Social Relations

Description: Ecosystems influence social interactions, cohesion, and relationships that are established in a particular place.

Example: *Coastal restoration activities can build communities of practice (e.g., among volunteers, managers, stewards, etc) and the health of coastal subsistence resources can promote social cohesion when resources are shared across groups.*

Additional information and resources from this project are available on the [project page](#).

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