



CMECS -- The Common Language for Marine Ecosystems

Frequently Asked Questions

What is the intent of CMECS?

CMECS is designed to provide a national standard for consistent descriptions of coastal and marine ecological features. CMECS offers implementation guidance, a classification hierarchy, and definitions of terms. The primary uses of CMECS are in mapping and classifying the geological, physical, biological, and chemical components of the environment. Among other applications, the CMECS framework can be used to inventory resources, describe areas of interest, facilitate comparisons among sites, and organize data.

What if I don't have information on one or more components?

Most data collection efforts will focus on one of the components. There is no requirement to collect data across all components in any individual application; however, data developers are encouraged to populate as much of the larger CMECS structure as possible.

Will I have to use CMECS for my project?

If approved as a Federal Geographic Data Committee (FGDC) standard, CMECS (or a product that reports to or is cross-walked to CMECS) would be required if federal funds are used for the project.

What if I don't have enough information to get to the lowest level in the hierarchy?

Most data collection efforts will be able to populate the hierarchy to at least the subclass level for the Benthic Biotic Component. It is not required that data collections reach the Biotope level. Conversely, in some instances, data may be available at the Biotope level, but not for higher levels. Data should only be used to populate those levels for which the project accuracy requirements can be confidently met.

Is there a specific minimum mapping unit for CMECS?

No. The minimum mapping unit will be a function of individual project needs and data requirements.

Why are there multiple components instead of one?

The CMECS components reflect different aspects or characteristics of the coastal and marine environment. These aspects were divided into separate components to avoid proliferation of habitat types, allow flexibility of application to meet various user needs, and to accommodate existing classification work and data. The components also reflect and support the various data collection technologies currently in use.

How will the components be integrated?

Components of CMECS will be best integrated through a geographic information system (GIS). This will allow queries across components tailored to specific habitats or species requirements, and will also allow identification of specific habitat types resulting from unique combinations of the various component layers.

What are the geographic limits for CMECS?

CMECS is intended for use in areas ranging from the splash zone (and upriver to tidally influenced oligohaline areas) to the deepest ocean depths. While CMECS has been developed for the U.S., it can be applied in any coastal or marine environment worldwide. CMECS has already been applied on a project-specific basis in other countries.

How should ephemeral habitats/ features be captured in CMECS?

Any given CMECS data collection effort should be considered a “snapshot in time.” However, CMECS provides a defined set of modifiers that allow users to describe the temporal variability of features and to identify ephemeral habitats or features that may temporarily dominate an area at the time of observation.

What is the difference between modifiers and classifiers?

Classifiers are physical, biological, geological, and chemical parameters that are required to define and assign units. Modifiers are not required to assign classifications, but are used to further describe classified habitat units. For example, salinity is a classifier for determining whether a system is estuarine or marine, but it can also be a modifier of a water column unit.

Are there rules associated with the use of modifiers?

A goal of CMECS is to provide a framework for uniform descriptions of environmental features. Modifiers are not required to assign classification, so guidance and consistent sets of terms are provided in lieu of “rules” for applying modifiers.

Why are some parts of CMECS incomplete?

Marine mapping efforts, technological developments, and ecological research studies continuously advance our understanding of physical, geological, chemical, and biological processes and the aquatic features they create. In one example, additional work is needed to identify relationships among biota and the driving factors that collectively form biotope features. It is expected that additional biotopes, groups, and other units will be identified and added to CMECS. To expedite the evolution of CMECS, new units will be added to the CMECS structure through a formal process that will not require repeating the FGDC standards approval process.

Why are some features reflected in multiple components?

Some features that drive specific habitats are significant from both a biological and a physical/structural perspective. For example, hard corals build living assemblages (reefs) that form a biological cover over the benthos. They also build extensive structural features that affect ocean circulation and other larger-scale environmental processes. Depending on the scale and focus of a given study, hard corals could be reflected in both the Benthic Biotic and GeoForm Components. It is also important that CMECS be flexible enough to accommodate user needs and technologies. Since use of all components will not be required, it is necessary to include some features in multiple components to ensure that key factors defining a specific habitat will be captured regardless of which component is being utilized.

What defines the scale within CMECS?

The specific goals of each classification project define the geographic “scale” at which CMECS would be applied, as well as the specific mapping scale. CMECS is designed to provide a flexible classification standard for mapping and for other applications across a broad range of geographic scales from the local estuary to large ocean basins.

What difficulties may I encounter in cross-walking/ reporting my classification to CMECS?

CMECS is intended for use across broad geographic ranges and to accommodate a wide variety of technologies. Information from classification systems designed for use at very high levels of detail (e.g., NERRS cultural resources subclasses) or with very specific focus areas may need to be “rolled up” to fit into the CMECS structure, whereas elements that are within a single hierarchical level in an existing classification system may need to be distributed among two or more of the CMECS levels or components. Rules and guidance will be developed for these situations as they are encountered. NOAA and NatureServe will assist users if they encounter these types of difficulties.

**For more information, please visit: www.csc.noaa.gov/benthic/cmecs
or contact: nos.csc.cmecs_IG@noaa.gov**