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A16 BIOTA THEME STATUS BRIEFING TO FGDC STEERING COMMITTEE

April 8, 2016

Marcia McNiff/USGS – Biota Theme Lead

Topics

Biota Theme Background

- Leadership and Coordination

Current Activities

- Recent accomplishments
- Proposed theme name change

Datasets

- Brief overview of each

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Background and Leadership

Biota Theme Definition

- Datasets in the Biota Theme pertain to, or describe, the dynamic processes, interactions, distributions, and relationships between and among organisms and their environments.

Biota Theme Leadership

- Lead Agency: DOI/USGS
- Theme Lead: Marcia McNiff/USGS
- Executive Champion: Jerry Johnston/DOI

Biota Theme Datasets and Managers

Dataset Name	Dataset Manager Lead Agency
Bailey's Ecoregions and Subregions Of The United States, Puerto Rico, And The U.S. Virgin Islands	David Rugg USDA-USFS
Environmental Sensitivity Index (ESI) Data	Jill Petersen DOC-NOAA
FWS Critical Habitat for Threatened and Endangered Species	John Swords DOI-USFWS
Omernik's Level III Ecoregions Of The Conterminous United States	Randy Comeleo USEPA
Terrestrial Ecosystems of the Conterminous United States	Roger Sayre DOI-USGS
U.S. Geological Survey Gap Analysis Program Species Distribution Models	Julie Prior-Magee DOI-USGS
U.S. Geological Survey Gap Analysis Program Species Ranges	Julie Prior-Magee DOI-USGS

Coordination/Community of Interest

Coordination includes:

- Participation in Theme Lead and Coordination Group (CG) meetings
- Briefed CG in December 2015 and Theme Leads in January 2016
- Personal contact with dataset managers

Community of Interest for this theme includes:

- Scientists, data managers and researchers from the Federal, state, public and academic sectors
- Conservation land managers and decision makers in federal and non-profit organizations
- The NGDA Biota Theme Community on the Geospatial Platform provides a forum to serve these stakeholders

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Community

Current Activities

Recent Accomplishments and Activities

- All datasets in the theme registered on data.gov
- All datasets in the theme completed the Lifecycle Maturity Assessment (LMA)
- Processed several changes to inventory of Biota datasets in response to discussions with dataset managers and others
- 6 of 7 datasets have new dataset managers
- Strategic Plan discussions are in progress
- Currently working on obtaining consensus and approval for changing the theme name from Biota to Biodiversity and Ecosystems

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Proposal:
"Biota" to "Biodiversity and Ecosystems"

Proposal: Change the theme name from "Biota" to "Biodiversity and Ecosystems" to better reflect the content of the theme

Initiated by Roger Sayre, PhD

- Dataset manager for Terrestrial Ecosystems
- Senior Scientist for Ecosystems, USGS Land Change Science Program, and GEO Task Lead GI-14
- Presented proposal to CG in December 2015
- Precedents cited: GEO/GEOSS, SDGs, CBD, NGOs, Donors, etc.
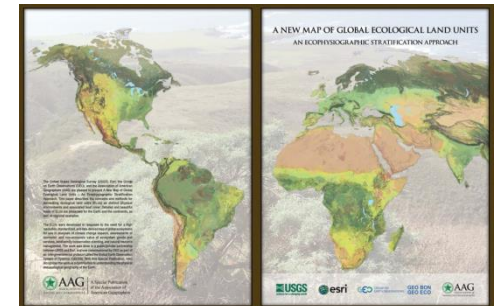
"Biota" to "Biodiversity and Ecosystems" (cont.)

Biota – A16 definition

- Pertain to, or describes, the dynamic processes, interactions, distributions, and relationships between and among organisms, and their environments.

Wikipedia definitions of Biota and Ecosystems

Biota

- Biota are the total collection of organisms of a geographic region or a time period, from local geographic scales and instantaneous temporal scales all the way up to whole-planet and whole-timescale spatiotemporal scales. The biota, or biotic component of the Earth make up the biosphere.

Ecosystem

- An ecosystem is a community of living organisms called producers, consumers, and decomposers.[2] These biotic and abiotic components are regarded as linked together through nutrient cycles and energy flows.[3].... As ecosystems are defined by the network of interactions among organisms, and between organisms and their environment,[4] they can be of any size but usually encompass specific, limited spaces[5] (although some scientists say that the entire planet is an ecosystem, which is probably true).[

"Biota" to "Biodiversity and Ecosystems" (cont.)

Dataset Name	✖ ═══ Abiotic
Bailey ✖ regions and Subregions Of The United States, Puerto Rico, And The U.S. Virgi✖ ds	
Environmental Sensitivity Index (ESI) Data	
FWS Critical Habitat for Threatened and Endangered Species	
Ome✖ Level III Ecoregions Of The Conterminous United States	
Terre✖ Ecosystems of the Conterminous United States	
U.S. Geological Survey Gap Analysis Program Species Distribution Models	
U.S. Geological Survey Gap Analysis Program Species Ranges	

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"Biota" to "Biodiversity and Ecosystems" (cont.)

Proposal: Change the theme name from "Biota" to "Biodiversity and Ecosystems" to better reflect the content of the theme

Discussion currently underway

- Presented to Theme Leads in January 2016
- Circulated to Coordination Group, Theme Leads, and Biota dataset managers for comment and consensus
- https://www.fgdc.gov/participation/coordination-group/meeting-minutes/2015/december/index_html
- All feedback received to date has been positive

"Biota" to "Biodiversity and Ecosystems" (cont.)

Impacts of Name Change

- As per A-16: "Lead Agency responsibilities and new data themes may be added or altered by recommendation of the FGDC and concurrence by the OMB"

- Current list of 16 NGDAs, was an update to OMB Circular A-16, Appendix E: "NSDI Data Themes, Definitions, and Lead Agencies"

- Change will need to be reflected in multiple places, e.g. GeoPlatform.gov, Annual Report, communications materials, FGDC website, NGDA tools and reports

Next Steps

- Coordination Group will vote on their recommendation for Steering Committee endorsement of the change

- Steering Committee will vote which will include concurrence by OMB, as FGDC Vice Chair

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Additional recommendations

Recommendations for additional changes to consider regarding datasets within the Biota/Biodiversity and Ecosystems theme

- Change the name of the Terrestrial Ecosystems of the Conterminous United States dataset to Potential Ecosystems of the Conterminous United States

- Resurrect the former USGS GAP Land Cover resource, change its name to Actual Ecosystems of the United States, and place it in the Biodiversity and Ecosystems theme.

- In the future, consider moving some of the LandFire layers (existing vegetation, potential vegetation) into the Biodiversity and Ecosystems theme.

Datasets in the Biota Theme
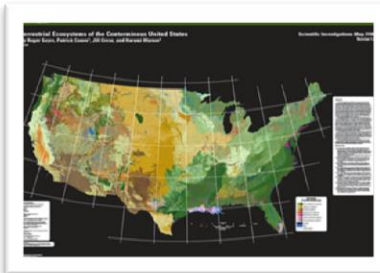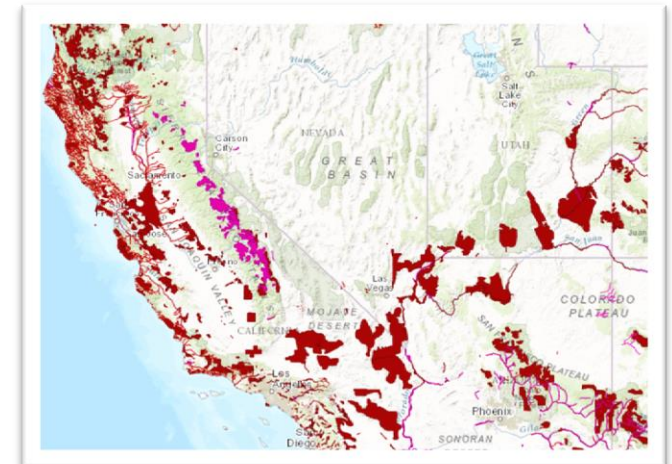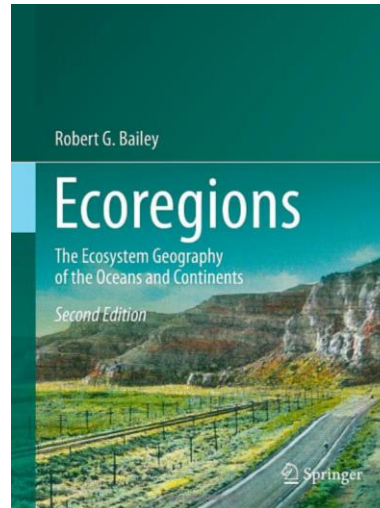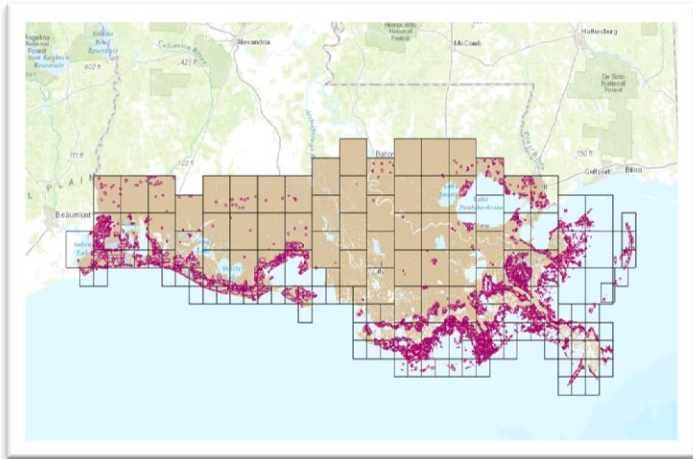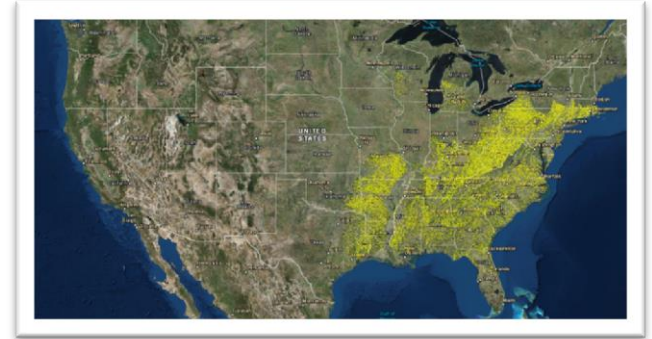
Biota Datasets – Bailey's Ecoregions

Full name: Bailey's Ecoregions And Subregions Of The United States, Puerto Rico, And The U.S. Virgin Islands – Direct Download

- Agency lead: USDA - USFS
- Dataset manager: David Rugg (new)
- Shows ecosystems of regional extent in the United States, Puerto Rico, and the U.S. Virgin Islands
    - Four levels of detail are included to show a hierarchy of ecosystems
- Overall Maturity: Mature; Consistent (4)
    - Dataset is static – no further updates planned
- Of note: USFS has recently completed new publication process and is now hosting the dataset
    - Previously hosted by USGS' National Map
    - Working with FGDC staff and contractors to update metadata and links to reflect new host location
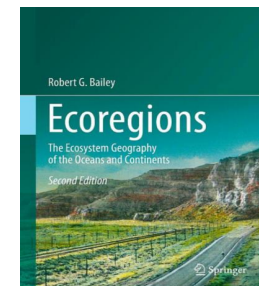
Biota Datasets - ESI

Full name: Environmental Sensitivity Index (ESI) Data Viewer and REST Services for Atlases

- Agency lead: Commerce - NOAA

- Dataset managers: Jill Petersen and Donna Roberts (new)

- ESI data characterize the marine and coastal environments and wildlife based on sensitivity to spilled oil

  - Three main components: shoreline habitats, sensitive biological resources, and human-use resources

- Overall Maturity: Managed; Predictable (3)

- Of note: Environmental Sensitivity Index Data Viewer online at http://egisws02.nos.noaa.gov/esi/esi.html

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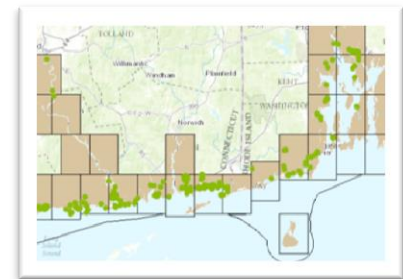
Biota Datasets - Critical Habitat

Full name: FWS Critical Habitat for Threatened and Endangered Species Dataset

- Agency lead: Interior - USFWS

- Dataset manager: John Swords

- Critical habitat is a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection

    - For species proposed for listing as endangered or threatened under the Endangered Species Act

- Overall Maturity: Mature; Consistent (4)

- Of note: Online mapper available as part of USFWS Environmental Conservation Online System http://fws.maps.arcgis.com/home/webmap/viewer.html?webmap=9d8de5e265ad4fe09893cf75b8dbfb77

Biota Datasets – Omernik's Ecoregions

Full name: Omernik's Level III Ecoregions Of The Conterminous United States

- Agency lead: USEPA

- Dataset manager: Randy Comeleo (new)

- Ecoregions denote areas of general similarity in ecosystems and in the type, quality, and quantity of environmental resources. They are designed to serve as a spatial framework for the research, assessment, management, and monitoring of ecosystems and ecosystem components.

  - The approach used to compile this map is based on the premise that ecological regions can be identified through the analysis of patterns of biotic and abiotic phenomena, including geology, physiography, vegetation, climate, soils, land use, wildlife, and hydrology.

- Overall Maturity: Transition; Transformation (2)

  - Dataset is static – no further updates planned

Level III Ecoregions

Biota Datasets – Terrestrial Ecosystems

Full name: Terrestrial Ecosystems of the Conterminous United States

- Agency lead: Interior - USGS
- Dataset manager: Roger Sayre
- The U.S. Geological Survey (USGS), with support from NatureServe, has modeled the potential distribution of 419 terrestrial ecosystems for the conterminous United States
    - Uses a comprehensive biophysical stratification approach that identifies distinct biophysical environments and associates them with known vegetation distributions
- Overall Maturity: Mature; Consistent (4)
- Of note: Considering changing the name of the dataset to "Potential Ecosystems of the Conterminous United States" to more accurately reflect that the dataset is of potential distribution of ecosystems

A New Map of Standardized Terrestrial Ecosystems of the Conterminous United States
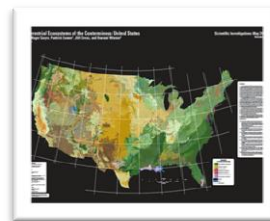
Biota Datasets – GAP Species Datasets

There are two GAP Species related datasets in the Biota Theme:

Full name: U.S. Geological Survey Gap Analysis Program Species Distribution Models

- GAP distribution models represent the areas where species are predicted to occur based on habitat associations.
- The spatial arrangement of environments suitable for occupation by a species.

Full name: U.S. Geological Survey Gap Analysis Program Species Ranges

- GAP species range data show a coarse representation of the total areal extent of a species or the geographic limits within which a species can be found (Morrison and Hall 2002).

- Agency lead: Interior - USGS
- Dataset manager: Julie Prior-Magee (new)
- Overall Maturity for both: Managed; Predictable (3)
- Of note: GAP Species Viewer available at http://gapanalysis.usgs.gov/species/viewer/
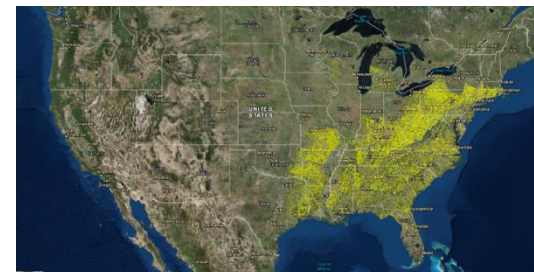
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