

Update on the GEO Coastal Zone Community of Practice (CZCP)

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GEO Coastal Zone Community of Practice (CZCP)

- Global, regional and local trends in natural processes and human demands on coastal ecosystems jeopardize the ability of these ecosystems to support commerce, living resources, recreation and habitation.
- In this context, improved, integrated and sustained coastal observing capabilities are required to better support user information needs.
- GEOSS provides a valuable framework/mechanism to help implement these capabilities, and under the auspices of GEO, a *Coastal Zone Community of Practice (CZCP)* was initiated in 2006 by the IGOS Coastal Theme.

Figure 1.1. The Coastal Zone: Where inputs from land, sea, air and people converge



Heavily developed coast of Cancun, Mexico mostly for international tourism. Image credit: © Wolcott Henry 2001.

Image source: www.marinephotobank.org.

GEO Coastal Zone Community of Practice (CZCP)

The GEO Coastal Zone Community of Practice (CZCP) objectives are to:

- Engage coastal users (e.g., managers and decision makers) and data providers to collaborate in the specification of requirements for *in situ* & remote coastal observations and derived Information products (variables to monitor, time-space resolution, accuracy, rate, forms and delivery methods in which data and derived products are needed);
- Evaluate current and projected observational capabilities against these requirements, identifying gaps, redundancies and activities that need to be strengthened;
- Promote the development of workshops and “proof of concept” pilot projects that both address these gaps and enable data integration for the provision of new or improved decision support tools;
- Promote development or strengthening of networks of institutions globally, regionally, and across Communities of Practice (CPs) that contribute to and benefit from GEOSS;
- Advise the **GEO User Interface Committee**, other CPs and GEO on matters relating to coastal zone observations and related societal benefits, and identify priority needs as well as areas for linkage, collaboration and support.

Coastal Zone Community of Practice Update

- CZCP Organizing group:

Jimmy Adegoke

Michael Bruno

Robert Christian

Franciscus Colijn

Paul DiGiacomo

Thomas Malone

Liana Talaue-McManus

Jose Muelbert

Hans-Peter Plag

- Numerous GEO member nations, as well coastal user interests & applications (e.g., sea level rise and inundation; water quality; habitat, resource and integrated coastal area management) are represented within the CZCP.
- Frequent communication is occurring within this group to facilitate discussion and plan CZCP activities.

Coastal Zone Community of Practice Activities/Plans

Recent and ongoing CZCP community engagement activities:

- Coastal users/organizations/needs are being identified by the organizing group, guided by their broad/diverse user knowledge, interests, and national/international activities.
- A GEO CZCP list server (CP-COASTAL@LIST.GEOSEC.ORG) has been created to facilitate discussion with and between these coastal users; an FTP site has also been established, and a web site (hosted by GTOS) will also come online fairly soon.
- The CZCP, in conjunction with IGOS, GOOS-PICO et al., has presented at and also helped organize, plan, & run recent coastal user workshops, sessions and meetings (along with supporting associated reports and articles), including:
 - => Workshop on Regional Needs for Coastal Remote Sensing
(Durham, New Hampshire, USA, October 2006)
 - => 3rd GOOS Regional Forum (Cape Town, South Africa, November 2006)
 - => GEO Inland & Nearshore Coastal Water Quality Remote Sensing Workshop
(Geneva, Switzerland, March 2007)
 - => GEOSS in the Americas Symposium (Mangaratiba, Brazil, September 2007)
 - => Estuarine Research Federation Conference
(Providence, Rhode Island, USA, November 2007)
 - => Ocean Sciences Meeting
(Orlando, Florida, USA March 2008)

Coastal Zone Community of Practice Activities/Plans

The CZCP organized several coastal-themed special sessions at the recent Ocean Sciences Meeting (Orlando, Florida, USA; March 2008):

(099) Susceptibility to Coastal Flooding: Effects of Changes in Near Shore Bathymetry, Topography, Habitats and Sea Level, On Daily to Decadal Scales

(139) Applications of Remote Sensing Data for Assessing and Monitoring Coastal and Inland Water Quality

(183) Interannual Trends in Phytoplankton Dynamics in Coastal Ecosystems

(137) Oceanic and Meteorological Measurements From Voluntary Observing Ships and Other Platforms of Opportunity

Coastal Zone Community of Practice Activities/Plans

A series of CZCP regional users workshops is currently being planned:

“GEOSS Support for Decision-Making in the Coastal Zone: Managing and Mitigating the Impacts of Human Activities and Natural Hazards In the Coastal Zone”

First workshop:

“Observing System Requirements for Managing and Mitigating the Impacts of Human Activities and Coastal Inundation in the Mediterranean Region” , to take place 9-13 June 2008, Athens, Greece; locally hosted by Greek GEO Office in conjunction with the GEO Secretariat.

See <http://www.greekgeo.noa.gr/geoworkshop1/page01.html> for further details.

Approximately 65-70 participants are expected!

Coastal Zone Community of Practice Activities/Plans

International Steering Committee for First CZCP Workshop:

“Observing System Requirements for Managing and Mitigating the Impacts of Human Activities and Coastal Inundation in the Mediterranean Region”.

- Hans-Peter Plag (Co-Chair, USA)
- Michael Bruno (Co-Chair, USA)
- Jimmy Adegoke (AARSE, Nigeria)
- Mahmoud H Ahmed (NARSS, Egypt)
- Geoff Brundrit (GOOS Africa, South Africa)
- Robert Christian (Coastal GTOS, USA)
- Hans Dahlin (EuroGOOS, Sweden)
- Paul DiGiacomo (PICO Co-Chair, USA)
- Eleni Fitoka (Greece)
- Tom Malone (PICO, USA)
- Jose Muelbert (PICO Co-Chair, Brazil)
- Kostas Nittis (MedGOOS, Greece)
- Jozef M. Pacyna (LOICZ, Norway)
- Nadia Pinardi (MOON, Italy)
- Roger Proctor (UK)
- Michael Rast (GEO Sec)

Coastal Zone Community of Practice Activities/Plans

First CZCP Workshop: "Observing System Requirements for Managing and Mitigating the Impacts of Human Activities and Coastal Inundation in the Mediterranean Region".

Specific objectives of the Workshop:

- Compare scientifically sound scenarios for (1) time-space extent of coastal inundation and storm surge in the coastal zone and for impacts of coastal flooding on coastal (2) infrastructure, (3) human health risks (exposure to waterborne pathogens), (4) ecosystems (e.g., water quality, habitats, biodiversity), and (5) living resources (organisms and habitats).
- Assess current observing system capacities for providing the data and information required to assess changes in susceptibility (risk and resilience) both temporally (annual to decadal scales) and spatially (100 meter to 1 kilometer resolution).
- Increase awareness among coastal planners and managers of geospatial patterns of susceptibility and causes of changes in susceptibility, both short term (e.g., coastal engineering) and long term (e.g., changes in sea level).

Coastal Zone Community of Practice Activities/Plans

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Subsequent Workshops:

Will be held in *2) Africa, 3) Asia and 4) the Americas* in the 2009-2010 timeframe; Suggestions welcome for specific locales/venues, hosts, sponsors et al. These workshops will also be developed in coordination with the GEO Secretariat.

Coastal Zone Community of Practice Activities/Plans

Development of Water Quality Remote Sensing Pilot Projects:

- Following up on the GEO Inland & Nearshore Coastal Water Quality Remote Sensing Workshop (March 2007), a U.S. Workshop on Regional Needs for Coastal Remote Sensing (Oct. 2006), the last GEO UIC meeting (Aug 2007), and the GEOSS in the Americas Symposium (Sept 2007), there is strong interest in developing water quality remote sensing pilot projects and related sustained activities.
- Specifically, there is a desire to better leverage existing remote sensing capabilities, as well as promote R&D efforts, to facilitate greater utilization of satellite remote sensing data by coastal managers and decision-makers in support of improved monitoring of water quality in nearshore coastal and inland waters in both developed and developing nations.
- In particular, the CZCP, working with the GEO Water Cycle Community of Practice as well as GOOS-PICO and the IGOS Water Cycle & Coastal Themes, is working to identify and develop *user-driven* end to end water quality pilot projects that help integrate satellite remote sensing into the routine decision-making process and provide improved capacity.
- Exciting opportunities exist in the Americas, Africa, and Asia et al., expanding and leveraging activities such as the Antares network, ChlorOGIN and other global/regional efforts.
- Efforts are now underway by *Steve Greb* et al. to develop an IEEE pilot project that builds on the rapidly developing Chlorophyll Global Integrated Network (ChloroGIN) project.