

# **The GEO Coastal Zone Community of Practice (CZCP): An Overview of Status, Activities and Plans**

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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](http://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 (CZCP)

- CZCP Organizing group:

Jimmy Adegoke

Michael Bruno

Robert Christian

Franciscus Colijn

Paul DiGiacomo

Thomas Malone

Liana Talaue-McManus

Jose Muelbert

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- 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.

# CZCP Activities: Organizational Steps

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](mailto:CP-COASTAL@LIST.GEOSEC.ORG)) has been created to facilitate discussion with and between these coastal users; an FTP site has also been established.
- A CZCP Web Page has been established at <http://www.czcp.org>. This page includes information about the CZCP, the Workshop series, a library, and a discussion forum. A product page is under development.

# CZCP Activities: A Web page

GEO Coastal Zone Community of Practice - SeaMonkey

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Our mission:  
Empowering integrated coastal zone management  
with Earth observations ...

Coastal Zone Community of Practice **CZCP**

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Coastal zones are areas of particular ecological, social, and economic value where many conflicting interests need to be resolved in order to ensure a sustainable development of this highly complex environment. Humanity has always shown a special interest in the coastal zone and a large fraction of the human population traditionally settles in or close to the coastal zone. Recent increases in coastal urban population and changes in land-use practices have led to rapid and large changes in sediment supplies and increases in nutrient, pollutant and pathogen loadings to coastal waters. Climate-induced changes in sea level are likely to increase the risk of inundation in many parts of the coastal zone. The on-going and anticipated changes pose serious risks to human health and the capacity of ecosystems to support products and services critical to the survival and well being of human populations, in developed and developing nations alike.

The Coastal Zone Community of Practice (CZCP) supports the Group on Earth Observations (GEO) in its goal to provide observations required for informed decisions concerning the coastal zone. High and immediate priorities for GEOSS are improved forecasts of sea-level rise and associated increases in coastal inundation that may be exacerbated by increases in the frequency of extreme weather.

**Latest News:**  
**[18 July 2008] Workshop report available:** The report of the first regional CZCP Workshop held on June 9th to 13th, 2008 in Athens, Greece is available in the [CZCP library](#). The direct link to the pdf file is [http://geodesy.unr.edu/czcp/library/reports/CZCP\\_Athens\\_report\\_DRAFT\\_v2\\_20080709.pdf](http://geodesy.unr.edu/czcp/library/reports/CZCP_Athens_report_DRAFT_v2_20080709.pdf). To submit comments on the report, please visit the [CZCP Discussion Forum](#).  
**[15 June 2008] First regional CZCP Workshop held successfully in Athens, Greece:** The first Workshop in a series of regional GEO/CZCP Workshops focusing on GEOSS Support for decision-making in the coastal zone and particularly the managing and mitigating the impacts of human activities and natural hazards in the coastal zone was successfully held on June 9th to 13th, 2008 at the the Research Center for Astronomy and Applied Mathematics Medical and Biological Research Foundation (IBEAA) in Athens, Greece. More than 35 participants representing global and regional organizations with interest in the Mediterranean coastal zone discussed the current status of Earth observations and decision support, identified gaps specific to the Mediterranean, and proposed activities addressing these gaps. A workshop report is currently in preparation and will be made available at the CZCP web page in the near future. More information on the Workshop is available at the [GEO CZCP Workshop](#) web page. Post workshop information is collected at the CZCP [Workshop Page](#).

# CZCP Activities: A Series of Regional Workshops

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

*“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”* took place 9-13 June 2008, Athens, Greece; locally hosted by Greek GEO Office in conjunction with the GEO Secretariat.

There were approximately 35 participants from 13 nations.

# CZCP Activities: 1<sup>st</sup> Regional Workshop



## First Regional Workshop

June 9-13, 2008, Athens, Greece

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

Draft Workshop Plan

Scope

Specific Objectives of Workshop

Goals



Deliverables



Format and Outcome



Workshop Documents

# CZCP Activities: Conclusions, 1<sup>st</sup> Regional Workshop

*Draft Workshop Report available at*

*<http://www.greekgeo.noa.gr/geoworkshop1/page01.html> and*

*<http://www.czcp.org>.*

## *Conclusions resulting from the First CZCP Workshop:*

1. **Region-scale differences** in observational capabilities hinder progress in the development of basin-wide observing and decision support systems.
2. There is a need for **enhanced risk awareness**, based on scientific hazard and vulnerability assessments.
3. There is a need for **enhanced Land Cover /Land Use & Digital Elevation Maps**.
4. There is a need to **assess the impact of climate change** on nearshore processes under both current and future (up to year 2100) conditions.
5. There is a need to **assess the “dynamic” impacts** of climate change on inundation, erosion and shoreline change.
6. There is a need to assess nutrient loading (**terrestrial input**), hypoxic/anoxic conditions, habitat alteration and water quality.

# CZCP Activities: Recommendations, 1<sup>st</sup> Regional Workshop

*Draft Workshop Report available at*

*<http://www.greekgeo.noa.gr/geoworkshop1/page01.html> and*

*<http://www.czcp.org>.*

## *Recommendations resulting from the First CZCP Workshop:*

- Develop a Pilot Project to address and promote the **minimization of the North-South differences** in observational capabilities in the Mediterranean.
- Develop and facilitate improved basin-wide observation capabilities to help enable the **capability for dynamics-based inundation forecasting** for both short-term events and long-term water level changes.
- Develop and facilitate improved basin-wide observation capabilities to provide **improved ecological/habitat assessments and forecasting capabilities** as well as trans-boundary (e.g., watershed-ocean) assessments and integrated modeling efforts.
- Existing **Land Cover/Land Use maps** should be updated and standardized for more effective use by the Integrated Coastal Area Management (ICAM) community.
- Develop **climatologies and forcing scenarios for future** (up to year 2100) conditions, including winds, atmospheric pressure, precipitation at scales from local to basin-wide.
- Develop proposal to initiate more effective use of information analyses to **support risk & vulnerability assessments** in the Mediterranean
- Form a **CZCP Mediterranean**
- Develop basin-wide **capability to perform ecological and water quality Assessments, Forecasts and Scenarios** (e.g., biodiversity, water quality, and fisheries) under conditions provided by IPCC (and other) predictions in forms useful for use in ICAM.

# CZCP Plans: Subsequent Workshops

Series of CZCP regional workshops:

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

*Subsequent Workshops:*

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

- A North-Africa Workshop is currently prepared with support from Egypt and Algeria.
- The Africa workshop is presently being developed with representatives from GOOS-Africa, Pan African Large Marine Ecosystems (LMEs), the African Association for Remote Sensing of the Environment, and other regional partners and end users.
- Focal points will be on coastal inundation, erosion, human health risks (water quality et al.), resilience of coastal ecosystems et al.

# CZCP Plans: Pilot Projects

## *Development of Water Quality Remote Sensing Pilot Projects:*

- Following up on the GEO Inland & Nearshore Coastal Water Quality Remote Sensing Workshop (March 2007), planning is underway (led by Steve Greb/Water Cycle) for an “Inland and Coastal Water Remote Sensing *Algorithm* Workshop”, tentatively planned for April 2009 in Washington, D.C.; CZCP will help support this.
- CZCP will also work with GOOS/PICO, IOCCG, and other partners to facilitate development of water quality remote sensing pilot project(s), likewise supporting continued development of the Chlorophyll Global Integrated Network (ChloroGIN) project in conjunction with Shubha Sathyendranath/POGO et al.

# CZCP Contacts

## CZCP Co-Chairs:

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## Web Page:

<http://www.czcp.org>