

International Coastal Atlas Network (ICAN)



URL: <http://icoastalatlant.net> or <http://ican.science.oregonstate.edu>

Purpose of Network

ICAN is a newly founded, informal group of organizations with the mission to share experiences and to find common solutions to coastal web atlas (CWA) development (e.g., user and developer guides, handbooks and articles on best practices, information on standards and web services, expertise and technical support directories, education, outreach, and funding opportunities, etc.). The long-term view is for global-level operational interoperability, which will evolve as the ICAN community strives to increase awareness of the opportunities that exist for increased coastal and marine data sharing among policy makers and resource managers as strategic users of a CWA. ICAN participants seek to play a leadership role in forging international collaborations of value to the participating nations, thereby optimizing regional governance in coastal zone management. A major goal is to help build a functioning digital atlas of the worldwide coast based on the principle of shared distributed information.

Accomplishments to Date

In 4 short years ICAN has grown from an idea to the cusp of a formal virtual organization/community of practice which, through its workshops in 2006-2009, has captured the interest of local and state governments, non-governmental organizations, universities, NOAA, the European Environment Agency (EEA), and UNESCO's Intergovernmental Oceanographic Commission. In 2008 the EEA invited and funded the PI and four other U.S. colleagues to present the idea of an ICAN and to foster further collaborations at their headquarters in Copenhagen, Denmark. ICAN has thus far proven to be an organic, highly motivated, productive informal group that despite its informality and lack of incorporation is capable of generating tangible, useful products that would attract and help users. These products to date include a working interoperability prototype (see below), a peer-reviewed handbook on coastal web atlas design and implementation (published in 2010 by IGI-Global Publishers), 4 workshop proceedings volumes, scores of technical articles and mini-workshop materials, and a comprehensive web site.

Geographic Extent

The coverage of ICAN is intended to be global but current coverage of the fledgling network is mostly on the U.S. west and east coasts, Brazil, Mexico, Canada, northern Europe, and the Mediterranean, with nodes emerging in Africa and the Caribbean. For a full list of partners, see <http://bit.ly/cWhBmU>.

Target Audience

U.S. state and federal agencies, non-governmental organizations, European Commission, regional and national coastal data centers and networks, researchers, consultants, and interested citizens.

Data Included (general categories)

Our network currently includes ~40 organizations from over 10 nations, all with data for marine spatial planning, coastal governance (including MPAs, protected areas), climate change impacts studies, coastal conservation and protection, base maps, physical, biological/habitat, cultural, coastal planning, hazards, and resource availability/extraction.

Distinguishing Features

- ICAN is developing coastal web atlas user and developer guides, articles on best practices, information on standards and web services, expertise and technical support directories, education, and outreach, etc. Furthermore, through its workshops it continues to build a **community of**

practice, and encourage and help facilitate global operational interoperability between coastal atlases in order to enhance data and information sharing among users. ICAN is therefore also all about education, outreach and general capacity-building regarding coastal web atlases.

- A proof-of-concept atlas interoperability prototype (aka mediator catalogue to demonstrate how coastal web atlases from different parts of the world can be linked together and how users may ultimately conduct queries across a range of atlases. The mediator uses ontologies to connect metadata databases built from local atlases. In this prototype, each atlas maintains its own independent ontologies of their coastal erosion data, which are then mapped to the ICAN global coastal erosion ontology. These ontologies work behind-the-scenes to simplify searching of multiple atlases at once. See <http://ican.ucc.ie> .

Technologies used in Prototype

- **Open Source Catalog Application:** GeoNetwork
- **Ontology Builder:** Protégé or CMAP
- **OGC Web Services:** Catalogue Services for the Web (CSW) via GeoNetwork, Web Map Service (WMS), in future Web Feature Service (WFS)

Atlas Support (financial/institutional)

ICAN was founded by an initial partnership between the Davey Jones Locker Marine GIS Lab of Oregon State University and the Coastal and Marine Resources Centre of the University College Cork, Ireland. Our institutional support has greatly increased to over 20 people volunteering their time to serve on the ICAN technical, atlas assessment, strategic planning and governance working groups. We have been sustained thus far by funding from the U.S. NSF, the Irish National Development Plan, the Marine Institute (Ireland) and its Marine RTDI Networking & Technology Transfer Initiative, and the European Environment Agency. Funding thus far has *only* been for international workshop hosting and travel. We continue to seek longer-term funding for salaries and computing resources in addition to the travel.

Future Directions

- ICAN 5 International Workshop, UNESCO IODE Headquarters, Belgium, September 2011
- Obtaining long-term financial support
- Compilation of a comprehensive, high-resolution digital coastline for the nation
- Officially incorporating as a more formal organization with final implementation structures on governance (including formal procedures for receiving **new members**), strategic planning/funding, and technical activities.

Important References

Our workshops and related proceedings volumes:

ICAN 1 (Ireland, 2006) – Potential and Limitations of Atlases - <http://bit.ly/bGqgcc>

ICAN 2 (Oregon USA, 2007) – Coastal Atlas Interoperability - <http://bit.ly/b36goS>

ICAN 3 (Denmark, 2008) – Federated Coastal Atlases - <http://bit.ly/bztrlr>

ICAN 4 (Italy, 2009) – Formalizing the Network, Engaging the Mediterranean - <http://bit.ly/EYVPP>

ICAN Great Lakes Workshop (Wisconsin USA, 2010) - <http://www.aqua.wisc.edu/ican/>

Our published handbook on coastal web atlas design and implementation - <http://bit.ly/blUeQa>

See ICAN-related presentations at Coastal GeoTools 2009, <http://bit.ly/bacWjo>, Coasta GeoTools 2011, <http://bit.ly/kek0wq>, and other ICAN publications at <http://bit.ly/awGhnw>.