ICAN International Coastal Atlas Network

http://ican.iode.org

ICAN Mini-Workshop at at CoastGIS 2018

On Friday 28 September 2018 ICAN hosted a mini-workshop at the CoastGIS 2018 conference in Ísafjörður, Iceland. The mini-workshop program featured presentations on recent ICAN member activities around the world, and a brainstorming session on the theme of "How can ICAN and CWA operators contribute to United Nations Sustainable Development Goal (SDG) 14 and the UN Decade of Ocean Science?" Presenters included:

Kathrin Kopke, University College Cork, Ireland

David Hart, University of Wisconsin Sea Grant, USA

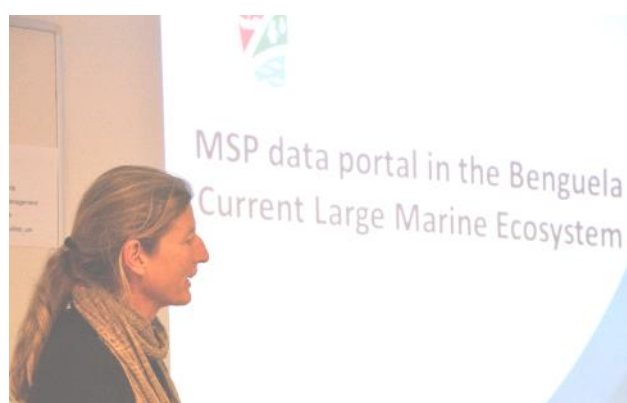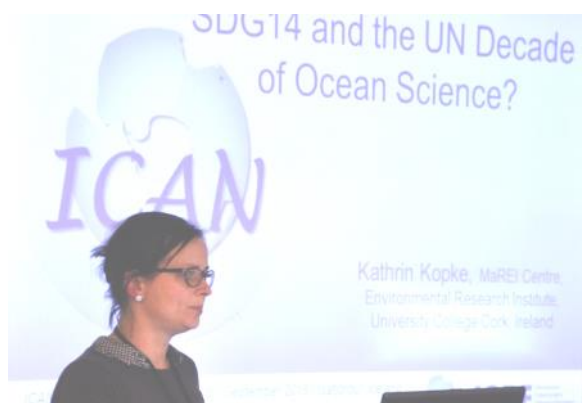Anja Kreiner, National Information and Research Centre, Namibia

Francisco Arias, INVEMAR, Columbia

Kathy Belpaeme, Provincie West-Vlaanderen, Belgium

After presentations, the room broke into 4 groups for focused discussion on the topics presented, and participants documented their discussions. These notes were transcribed after the event, and key points are presented on page 3.

We had approximately 30 participants from 16 countries, and participants were surveyed both before and after the event to gauge their reaction to, and perception of the topics and approach. Overall, reactions from participants were positive regarding the group break out approach, and participants reported increased knowledge about ICAN, the UN Ocean Decade of Science, and the SDGs after the conclusion of the event. Presentations are posted on the ICAN website.

Front page and back page: Rotated map from the EMODNet Map Viewer of the 'Coastal Migration' layer for the southern coast of Iceland. The background layer is the 'Event Environment' layer showing 'active spreading centre setting' in orange and 'oceanic crustal and plateau settings' in purple. http://www.emodnet-geology.eu/map-viewer

Coastal migration
— no information on evolution
— erosion (coastline retrogradation)
— accretion (coastline progradation)
— stable (imperceptible change)

Photo: View of the harbour at Ísafjörður, Westfjords, Iceland.

Photos from the ICAN Mini-workshop

Photos: clockwise from the top; Some participants in the ICAN mini-workshop working in groups; Anja Kreiner, National Information and Research Centre, Namibia presenting on the Marine Spatial Data Portal for the Bengeula Current Large Marine Ecosystem; Kathy Belpaeme, Provincie West-Vlaanderen, Belgium presenting on new atlas initiatives in Belgium; Francisco Arias, INVEMAR, Columbia presenting on atlas initiatives in western South America and the Caribbean and Kathrin Kopke, University College Cork, Ireland, introducing the UN Sustainable Development Goals and UN Decade for Ocean Science.

Highlights from the mini-Workshop Breakout Groups

A Coastal Atlas is a portal to understanding that provides:
- insights into nature
- understanding of the interaction of processes
- democratic access to information
- ability to participate in conversations
- highlight the importance of the coast for decision makers

Coastal Atlases could potentially provide:
- Open access to data
- Information about
  - economic value of coasts
  - ecosystem services
  - human uses and intensity
  - climate change, future mitigation
  - land loss due to sea level rise
  - indigenous / cultural community impacts
  - Access to crowd-sourced information based on citizen observations
  - Tools to "make your own" version
  - Improved use of indicators
  - Priority to local approaches
 - Mobile friendly / compatible applications

ICAN should have
- Provide more comprehensive coverage
- Access to guidance and best practices for Atlases
- Access to information about Coastal Atlases worldwide and the information they contain
- Consider minimum atlas pages for not yet participatory countries (e.g. via OBIS)
- Opportunities for non-coastal countries, especially those with watersheds that contribute plastics

Workshop participant distribution by gender

Number of workshop participants by country
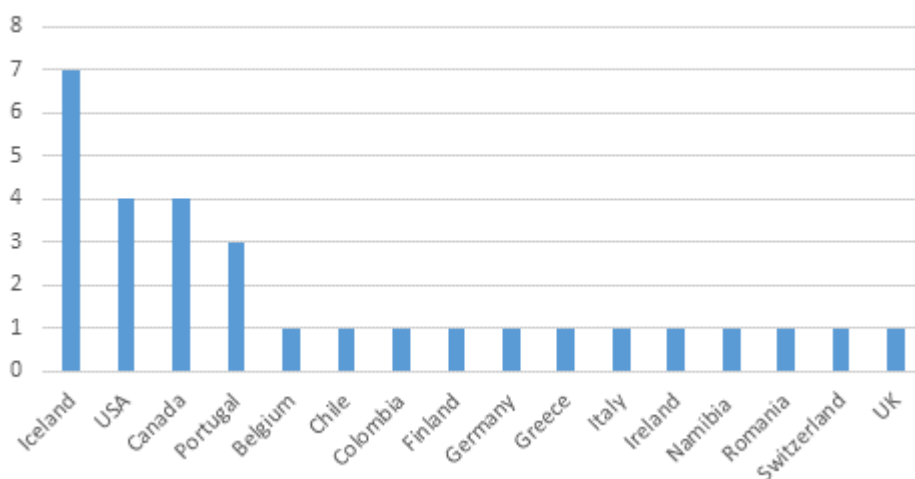
ICAN at CoastGIS 2018

International Coastal Atlas Network affiliates had a high profile at CoastGIS 2018 in Ísafjördur, Iceland from 27-29 September 2018.

Two affiliates were addressed plenary sessions. **David Green**, University of Aberdeen is the ICAN contact person for the **Living North Sea** website. His invited lecture featured low-coast monitoring, mapping and modelling of the coast using UAVs with a focus on the potential of small low-cost, off the shelf platforms and sensors

Photos: left: Louis Celliers; top right: Astrid Fehling, CoastGIS 2018 organizing committee and Project Manager, University Centre of the Westfjords, Iceland (Photo credit: CoastGIS); bottom right: Andrus Meiner.

with illustrations. d.r.green@abdn.ac.uk

Louis Celliers, formerly with the CSIR in South Africa, hosted ICAN 7 in Cape Town. He is now with the Climate Service Centre in Germany. His lecture focused on systems thinking and its relationship to geomatics. louis.celliers@hzg.de

Five other affiliates gave presentations in the parallel sessions.

Tanya Haddad, ICAN Steering Group Co-chair with the Oregon Coastal Management Program presented *Advancing Oregon Estuarine Habitat Mapping with the Coastal and Marine Ecological Classification Standard*. Oregon is remapping its estuary habitats with modern data and GIS tools and broadening its data integration efforts to include multiple new data types, remote sensing products and high resolution bathymetry. Their aim is to build a living habitat map product directly usable for local planning processes and a database product for conservation planners and scientists. Tanya.haddad@state.or.us

Andrus Meiner an ICAN Steering Group member with the EU Environment Agency presented *Copernicus land monitoring service for coastal zones*. The preparation for production of very high resolution land cover and land use datasets for coastal zones has been initiated with first results expected in 2020. The map product will cover a 10 km wide land area adjacent to the sea coastline for 39 countries with tailored coastal zone land

cover and land use mapping nomenclature. The new product will build on existing Copernicus products such as the Urban Atlas for coastal cities, Riparian zones and the Natura 2000 areas. The initiative will cooperate with the Copernicus marine environment monitoring service that is underdevelopment. Andrus.meiner@eea.europa.eu

David Hart an ICAN Steering Group member with the University of Wisconsin Sea Grant Institute presented *Geospatial Technologies to Understand and Communicate Coastal Hazards*. Since 2015 a team has been exploring the impact of changing water levels in Lake Michigan on coastal bluffs in eight communities north of Milwaukee, Wisconsin. Over 60 possible options were developed to help local official and property owners adapt to a changing coast. One of the three themes of options included mapping tools to promote outreach and education about coastal processes. dhart@aqua.wisc.edu

Andrew Sherin an ICAN Steering Group member with COINAtlantic and your newsletter`s editor made two presentations. The first was on automated processes used by COINAtlantic to maintain the currency and display reliability of the web mapping services accessed by its Search Utility on-line mapping tool. The second presentation was a reprise of the COINAtlantic Data Accessibility Self-Assessment Tool presented at ICAN 7 in Cape Town with modifications that make it compatible with the FAIR principles. a.sherin@dal.ca

Will McClintock, University of California at Santa Barbara and ICAN contact for SeaSketch co-presented with **Charla Burnett** *SeaSketch`s Ideal Process Planning Model: Ensuring Equitable Decision-making in Marine Spatial Planning*. The presentation highlights essential elements of the ideal planning process that is to be used alongside Sea-Sketch for the development of a successful plan. charla.burnett001@umb.edu

The presentation contributions to CoastGIS 2018 from ICAN affiliates was strengthened by the participation of other ICANers as delegates including Kathrin Kopke, ICAN Steering Group co-chair, Anja Kreiner, ICAN Steering Group member, Francisco Arias, INVEMAR, Columbia and host for ICAN 8 and Kathy Belpaeme, Provincie West-Vlaanderen, Belgium.

Overall ICAN made a very significant contribution to CoastGIS 2018. ICAN is grateful to the CoastGIS organizers for including an ICAN workshop (see report on page 1) to initiate the development of a new ICAN work plan focussed on the UN Sustainable Development Goals and the upcoming Decade for Ocean Science.

Þakka þér fyrir

Photos: ICAN presenters at CoastGIS 2018; top right: Tanya Haddad; middle right: David Hart; bottom right: Andy Sherin (Photo credit: Robert Branton).

Sustainable Development Goals

SUSTAINABLE DEVELOPMENT GOALS

1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS

The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries - developed and developing - in a global partnership. They recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests.

SUSTAINABLE DEVELOPMENT GOAL 14

Conserve and sustainably use the oceans, seas and marine resources for sustainable development

PROGRESS OF GOAL 14 IN 2018

Advancing the sustainable use and conservation of the oceans continues to require effective strategies and management to combat the adverse effects of overfishing, growing ocean acidification and worsening coastal eutrophication. The expansion of protected areas for marine biodiversity, intensification of research capacity and increases in ocean science funding remain critically important to preserve marine resources.

- The global share of marine fish stocks that are within biologically sustainable levels declined from 90 per cent in 1974 to 69 per cent in 2013.

- Studies at open ocean and coastal sites around the world show that current levels of marine acidity have increased by about 26 per cent on average since the start of the Industrial Revolution. Moreover, marine life is being exposed to conditions outside previously experienced natural variability.

- Global trends point to continued deterioration of coastal waters due to pollution and eutrophication. Without concerted efforts, coastal eutrophication is expected to increase in 20 per cent of large marine ecosystems by 2050.

- As of January 2018, 16 per cent (or over 22 million square kilometres) of marine waters under national jurisdiction—that is, 0 to 200 nautical miles from shore—were covered by protected areas. This is more than double the 2010 coverage level. The mean coverage of marine key biodiversity areas (KBAs) that are protected has also increased—from 30 per cent in 2000 to 44 per cent in 2018.

Sustainable Development Goal 14: Life Under Water[*]

	TARGETS		INDICATORS
14.1	By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution	14.1.1	Index of coastal eutrophication and floating plastic debris density
14.2	By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans	14.2.1	Proportion of national exclusive economic zones managed using ecosystem-based approaches
14.3	Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels	14.3.1	Average marine acidity (pH) measured at agreed suite of representative sampling stations
14.4	By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics	14.4.1	Proportion of fish stocks within biologically sustainable levels
14.5	By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information	14.5.1	Coverage of protected areas in relation to marine areas
14.6	By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation	14.6.1	Progress by countries in the degree of implementation of international instruments aiming to combat illegal, unreported and unregulated fishing
14.7	By 2030, increase the economic benefits to Small Island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism	14.7.1	Sustainable fisheries as a percentage of GDP in small island developing States, least developed countries and all countries
14A	Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries	14.A.1	Proportion of total research budget allocated to research in the field of marine technology
14B	Provide access for small-scale artisanal fishers to marine resources and markets	14.B.1	Progress by countries in the degree of application of a legal/regulatory/policy/institutional framework which recognizes and protects access rights for small-scale fisheries
14C	Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in UNCLOS, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of The Future We Want	14.C.1	Number of countries making progress in ratifying, accepting and implementing through legal, policy and institutional frameworks, ocean-related instruments that implement international law, as reflected in the United Nation Convention on the Law of the Sea, for the conservation and sustainable use of the oceans and their resources

[*] https://sustainabledevelopment.un.org/sdg14 (accessed 9 January 2019)

major basins

- a quantitative understanding of ocean ecosystems and their functioning as the basis for their management and adaptation

- a data and information portal supporting the decade outcomes

- an integrated multi-hazard warning system

- an ocean in earth-system observation, research and prediction, supported by social and human sciences and economic valuation

- capacity building and accelerated technology transfer, training and education, and ocean literacy

How will the Decade of Ocean Science achieve its goals?

The Decade is embracing a participative process so that scientists, policy makers, managers, and service users can work together to ensure that ocean science delivers greater benefits for both the ocean ecosystem and for society. A two way process is envisioned (top down and bottom-up): the objectives and outcomes will be agreed globally and every group and region of the world will support them. The bottom-up process will be established so as to allow for the regional or even local definition of these outcomes and objectives, with the formulation of scientific products, activities and partnerships that could be proposed in the context of the Decade.

Overall the Decade will mobilize resources towards:

TRANSFORMING - knowledge systems to support sustainable development

BOLSTERING - ocean observing and data systems

MEASURING - cumulative impacts for effective solutions

DELIVERING - best available knowledge to decision-makers

REDUCING - vulnerability to ocean and coastal hazards

ACCELERATING - transfer of marine technology, training and education

What Does the Ocean Decade Mean For You?

The success of the Decade will rely on the contributions of many different stakeholders including scientists, policy-makers, civil society, funders and the private sector. It

What is the UN Decade of Ocean Science?

The United Nations Decade of Ocean Science for Sustainable Development (2021-2030) is an initiative launched by the UN in December 2017. It seeks to drawn attention to the importance of ocean science data and information in the management decisions that will help the world make progress to the 2030 Sustainable Development Goals (SDGs), particularly Goal 14 – the ocean sustainability goal. The Decade will start in 2021, and planning for the decade will occur in the 2018-2020 time period. The IOC has been tasked by the UN General Assembly to work with all interested stakeholders to design a "Decade of Ocean Science" that will help us to deliver the ocean we need for the future we want.

What is the aim of the Decade of Ocean Science?

The objective of the Decade is to strengthen the international cooperation needed to develop the scientific research and innovative technologies that can connect ocean science with the needs of society, and to support countries in achieving the 2030 Agenda for Sustainable Development. The Decade will require the engagement of many different stakeholders to create new ideas, solutions, partnerships and applications, these include: scientists, governments, academics, policy makers, business, industry and civil society.

What will the Ocean Decade focus on as Research & Development Priority Areas?

The Decade will provide a framework for achieving a number of high level outcomes, clustered around:

- a comprehensive digital atlas of the world

- a comprehensive ocean observing system for all

will support a new cooperative framework to ensure that global ocean science provides greater benefits for ocean ecosystems and wider society. One hoped for outcome will be improvements in alignment between investments and high impact ocean science connections to management. Another is that the Decade will open up access to tools, information and investment needed to create solutions for ocean sustainability.

How can you help?

During the planning phase (right now!) of the Decade a call for inputs and contributions towards the planning phase of the Decade will be launched including opportunities to:

-Contribute to the Planning Process by submitting ideas or participate in Decade dedicated workshops and / or host and organize events.

-Consult stakeholders, communicate about the Decade and identify opportunities for investment and resource mobilization.

-Provide staff and/or financial support.

-Help the IOC and its preparatory activities.

-Communicate about the Decade by sharing the purpose and expected results of the Decade, its planning phase and preparatory activities.

ICAN supports ACMA migration to GeoNode

The African Coastal and Marine Atlas (ACMA) editorial team supported by Greg Reed from IODE, Tanya Haddad, ICAN Technical team, and Carlos Oliveros from the Caribbean Marine Atlas, held a meeting in November 2017 to discuss the migration of ACMA to a new content management system using the open source software GeoNode. As this new system would be more functional and sustainable for marine spatial planning than the existing ACMA, the Marine Spatial Management and Governance Project (MARISMA) supported the development of GeoNode for the Benguela Current Convention and its member states (Angola, Namibia and South Africa), using the data layers from ACMA as baseline and additional relevant national/regional spatial data.

From 12 to 16 March 2018 MARISMA together with IOC/Africa hosted a GeoNode workshop in Swakopmund, Namibia. The objective of the workshop was to start with the migration of the African Coastal and Marine Atlas to the new GeoNode platform. Greg Reed and Tanya Haddad joined participants from Angola, Côte d'Ivoire, Kenya, Madagascar, Namibia, Nigeria and Tunisia to provide training and advice. After installing GeoNode on all laptops, the first two days were spent on training and customizing the look and feel of GeoNode.

During the remaining three days participants uploaded and standardized their country and region layers.

The Ecosystem Advisory Committee of the Benguela Current Convention (BCC) has approved the request to host GeoNode by the BCC Secretariat for the member states. In 2019 the data and information of the Current Status Report, compiled by the Namibian MSP National Working Group and MARISMA as well as relevant data and information compiled by the Angolan MSP Working Group will be uploaded and made available online.

Photos: above; Group photo of workshop participants; left; Workshop participants hard at work with Tanya Haddad, technical expert and ICAN Steering Group Co-chair at the podium. Photo credit: Anja Kreiner

HELCOM map and data service updated – enhanced system for making available assessment data products and underlying data

Joni Kaitaranta and Andžej Miloš, HELCOM Secretariat

Introduction

HELCOM ([Baltic Marine Environment Protection Commission - Helsinki Commission](#)) is the governing body of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, known as the Helsinki Convention. The Contracting Parties are Denmark, Estonia, the European Union, Finland, Germany, Latvia, Lithuania, Poland, Russia and Sweden. HELCOM works to protect the Baltic Sea from all sources of pollutions through intergovernmental cooperation. HELCOM is a regional sea convention (RSC) for the Baltic Sea and policy maker for the Baltic Sea area by developing common environmental objectives and actions. One of HELCOM's task is to act as an environmental focal point providing information which requires GIS web mapping tool for providing information and data used in assessment carried out by HELCOM.

HELCOM Map and Data service (HELCOM MADS) was designed to fulfill that requirement and first version was developed in 2010. During 2016 a project was launched where resources were made available to completely renew and update the tool that was reaching the end of its life-span. This article

Requirements and use cases

Fundamental requirement for tools used in making available data stems from HELCOM Monitoring and Assessment Strategy, which contains attachment of Data and Information Strategy. The strategy sets out following guiding principle: The HELCOM data and information activities should facilitate access of the general public to environmental information. This includes requirements for various thematic datasets ranging from in-situ monitoring of eutrophication, biodiversity and hazardous substances related data to more aggregated data products on status of marine environment, nutrient loading and trends and overview of maritime traffic related activities.

HELCOM Contracting Parties that are also EU Member State have obligation stemming from Marine Strategy Frame Work Directive (MSFD). The Directive requires coherence and coordination within regions and makes possible reference to assessments/data that is done by Regional Sea Conventions. This sets requirements in relation to data products being made available on regional level and according to INSPIRE Directive.

Maritime Spatial Planning (MSP) requires also regional coordination and coherence of plans across the region and between neighboring countries. According to the MSP Directive, plans should be harmonized across the region and this requires regional level work and agreement on data harmonization. Spatial data should be also spatially very accurate and up-to-date to be useful in the planning process.

According to HELCOM data and information strategy, the target group for information and data products should be also general public / decision makers. This sets a requirement on complexity of information and terms used for displaying results. This purpose sets a requirement to be able to pinpoint to a specific aggregated and simplified map product in the service.

Technical solutions

HELCOM MADS is based on two user interfaces, which are seamlessly interlinked:

Map and Data service map viewer part (ESRI ArcGIS Server and ArcGIS API for Javascript) http://maps.helcom.fi/website/mapservice/index.html

-Viewing a dataset and feaure attributes on map viewer;

-Searching dataset in table of contents;

-Viewing external datasets (WMS);

-Data service addresses (ArcGIS Rest / OGC WMS);

-Accessing datasets and features by URL parameters

Metadata catalogue part (Geonetwork) http://metadata.helcom.fi/geonetwork/srv/eng/catalog.search#/home

-Viewing, downloading and searching metadata records (INSPIRE compliant).

Each dataset has a unique ID, which is used to link a record in the metadata catalogue with a dataset in the map viewer. Linkage is done by including ID in the map viewer and metadata catalogue URL. At anytime user can switch between two systems: to view dataset in the map viewer or read metadata and download dataset in the metadata catalogue (Fig. 1).

Map and Data service viewer is based on datasets stored in file Geodatabases and published in ArcGIS Server (10.6.1). The Map viewer user interface is developed by
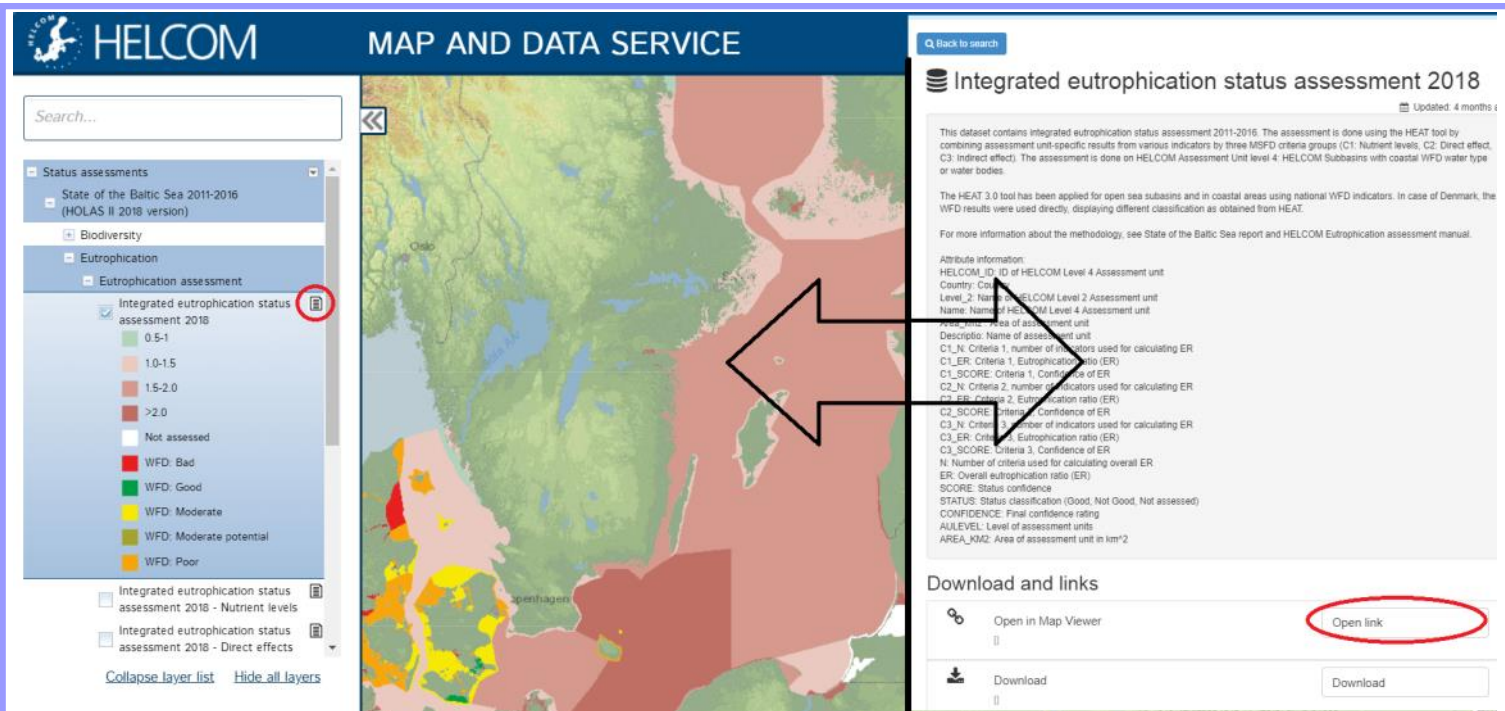
Figure 1. Visualization of a dataset in the map viewer (left hand side) and metadata record in metadata catalogue (right).

HELCOM Secretariat using ArcGIS API for Javascript. The source code for the map viewer part can be found at GitHub under GNU General Public License v3.0: https://github.com/helcomsecretariat/MADS. The main features of map viewer (Figure 2) are:

-Searchable table of contents

-Linkage between to metadata catalogue, accessing datasets and features via URL

-feature identification

-Attribute table widget

-Widget to add WMS services (from predefined list and custom)

-Ability to query features with URL parameters

HELCOM Metadata catalogue is an application of Geonetwork and utilizing INSPIRE compatible metadata template with GEMET thesauri. The metadata catalogue contains following features:

-Search feature for metadata records titles and content

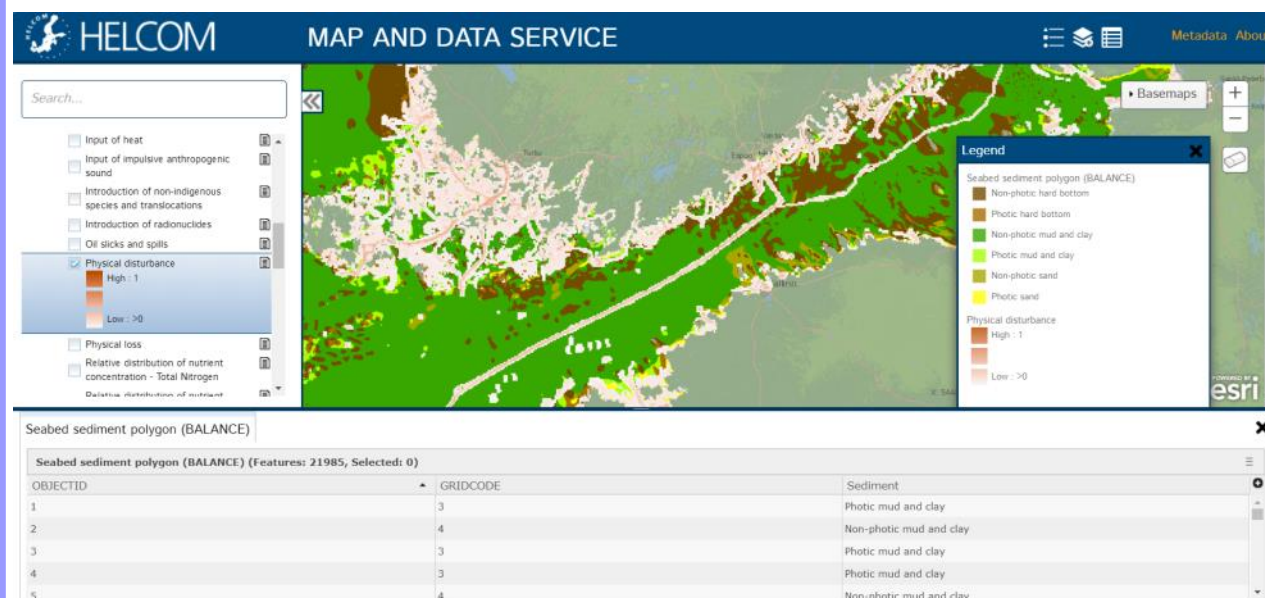-Downloadable content of each metadata record

Figure 2. Screenshot of HELCOM Map and Data service map viewer. On the left hand side searchable table of contents, at the bottom extendable attribute table widget and right hand side legend widget.

Marine component of the Unique System of Environmental Information (SUIA) - Ecuador

Ecuador is the first country in the world to recognize the rights of nature and implement Good Living (Buen Vivir – in Spanish) as an alternative to the traditional concept of development, - the search for a new balance between the human being, society and nature; a model where the best strategy to eradicate poverty is through the elimination of social, economic, environmental and cultural asymmetries, objectives clearly reflected in our National Plan of Development "Whole Life" that observes the Sustainable Development Goals as a set of minimum that our collective action must order.

The efficient management of data has allowed the Ministry of the Environment (MAE - by its initials in Spanish), to provide reliable and timely environmental information to the user of any field or sector attending to any type of requirement, allowing to adopt and apply timely measures in decision-making.

In this institutional framework, the Ministry of the Environment, the governing entity, coordinator and regulator of Environmental Management in Ecuador, has been working since 2010 on the project "Unique System of Environmental Information (SUIA - by its initials in Spanish)", as a management and dissemination tool of environmental information, which has allowed the country to know the state and the changes suffered by natural resources and the environment in general; covering different areas, ranging from research, education, statistics, consolidation, validation of geographic data, to the systematization of the institutional processes of the MAE.

It should be noted that based on the available environmental information, within the statistical and geospatial scope, the MAE has built an updated information base, in which the statistics, environmental indicators, layers and maps of the strategic resources are displayed, which serve as tool for the evaluation and validation of the progress of the goals outlined in the environmental field and the relationships between it.

Highlight that these processes of environmental information production, allow visualizing the contribution of the Ministry of the Environment to the fulfillment of the goals of the National Development Plan, the National Environmental Policy, Institutional Management and International Multilateral Agreements, contributing to global sustainable development.

Componente marino del Sistema Único de Información Ambiental (SUIA) - Ecuador

Ecuador es el primer país del mundo en reconocer los derechos de la naturaleza e implementar el Buen Vivir como una alternativa al tradicional concepto de desarrollo, - la búsqueda de un nuevo balance entre el ser humano, la sociedad y la naturaleza; un modelo donde la mejor estrategia para erradicar la pobreza pasa por la eliminación de las asimetrías sociales, económicas, ambientales y culturales, objetivos reflejados claramente en nuestro Plan Nacional de desarrollo "Toda una Vida" que observa los Objetivos de Desarrollo Sostenible como un conjunto de mínimos que debe ordenar nuestra acción colectiva global.

El manejo eficiente de datos, ha permitido a que el Ministerio del Ambiente MAE, provea de información ambiental confiable y oportuna al usuario de cualquier ámbito y/o sector atendiendo a todo tipo de requerimiento, permitiendo adoptar y aplicar medidas oportunas en la toma de decisión.

En ese marco institucional, el Ministerio del Ambiente, ente rector, coordinador y regulador de la Gestión Ambiental en el Ecuador, trabaja desde el año 2010 en el proyecto "Sistema Único de Información Ambiental (SUIA)", como un instrumento de gestión y difusión de la información ambiental, que le ha permitido al país conocer el estado y los cambios que sufren los recursos naturales y el ambiente en general; abarcando diferentes ámbitos, que van desde la investigación, educación, estadística, consolidación, validación de datos geográficos, hasta la sistematización de los procesos institucionales del MAE.

Cabe señalar que con base a la información ambiental disponible, dentro del ámbito estadístico y geoespacial, el MAE ha construido una base de información actualizada, en la cual se visualizan las estadísticas, indicadores ambientales, capas y mapas de los recursos estratégicos, que sirven de herramienta para la evaluación y validación del progreso de las metas trazadas en el campo ambiental y las relaciones entre éste.

Destacar que estos procesos de producción de información ambiental, permiten visualizar el aporte del Ministerio del Ambiente al cumplimiento de las metas del Plan Nacional de Desarrollo, la Política Ambiental Nacional, Gestión institucional y Acuerdos Multilaterales internacionales, aportando con el desarrollo sos-

VISUALIZACIÓN DE INDICADORES EN SISTEMA ÚNICO DE INFORMACIÓN AMBIENTAL - MAE

SISTEMA NACIONAL DE INDICADORES AMBIENTALES – SNIA:

http://snia.ambiente.gob.ec:8090/indicadoresambientales/pages/indicators.jsf

MAPA INTERACTIVO AMBIENTAL

http://mapainteractivo.ambiente.gob.ec/portal/

The country being an active member of the Project "Information and Data Network of the South Pacific for the Support of the Integrated Management of the Coastal Area - SPINCAM", through this State Portfolio, fulfills the commitment to visualize the information generated at the country level in the International Atlas of Marine Networks - ICAN, and under the premise of integrating environmental information in the SUIA platform, provides statistical and spatial information in the National System of Environmental and Sustainability Indicators - SINIAS, and Interactive Map Environmental.

On the latter, it is a Geovisor through which users can access, view and, depending on the level of sensitivity of it, download information regarding the national environmental theme, which includes the coastal marine around the project.

Finally, highlight that Ecuador through its environmental information processes seeks to strengthen the management it provides, promoting the cross-cutting use of the products and services generated through the generation of environmental and geographic data, guaranteeing the availability and integrity of it, through the implementation of new technologies; with the purpose of having statistical products that allow to measure the contribution not only of this state portfolio, but also of the Entities competent in the monitoring and conservation of the natural heritage, especially in the coastal zones, allowing the decision making towards compliance with the objectives that society wants to achieve, in search of sustainable development, good living and the rights of nature as established in our Constitution.

tenible global.

El país al ser parte y miembro activo del Proyecto "Red de Información y Datos del Pacífico Sur para el Apoyo a la Gestión Integrada del Área Costera – SPINCAM", a través de ésta Cartera de Estado, cumple con el compromiso de visualizar la información generada a nivel país en la Red Internacional de Atlas Marinos – ICAN, y bajo la premisa de integrar la información ambiental en la plataforma del SUIA, proporciona información estadística y espacial, en el Sistema Nacional de Indicadores Ambientales y de Sostenibilidad – SINIAS, y Mapa Interactivo Ambiental.

Sobre este último, es un Geovisor mediante el cual los usuarios pueden acceder, visualizar y, dependiendo del nivel de sensibilidad de la misma, descargar información referente a la temática ambiental nacional, que incluye la marino costera en torno al proyecto.

Finalmente, resaltar que el Ecuador a través de sus procesos de información ambiental busca fortalecer la gestión que brinda, promoviendo el uso transversal de los productos y servicios generados mediante la generación de datos ambientales y geográficos, garantizando la disponibilidad e integridad de la misma, mediante la implementación de nuevas tecnologías; con la finalidad de contar con productos estadísticos que permitan medir el aporte no sólo de esta cartera de estado sino de las Entidades competentes en el monitoreo y conservación del patrimonio natural en especial en las zonas costeras, permitiendo la toma de decisiones hacia el cumplimiento de los objetivos que la sociedad desea alcanzar, en busca del desarrollo sostenible, el buen vivir y los derechos de la naturaleza como lo establece nuestra Constitución.

In his recent message 'What's Going on with The Gateway Anyway?' Jeff Herter with New York Department of State Office of Planning, Development & Community Infrastructure and a frequent correspondent with the ICAN newsletter shared the following metrics for the Geographic Information Gateway, the one stop, state-of-the-art website providing public access to data, real-time information, interactive tools, and expert knowledge relevant to the Office of Planning and Development's activities throughout New York State.

Gateway Metrics

"It's been just over 3 years that the Gateway has been up and running and we've had over 46, 000 visits, over 212,000 pageviews, over 600,000 actions and a bounce rate that is 12%. Folks spend an average of over 5 ¼ minutes and carry out an average of 13 actions during their visit. It's gratifying for the Team to see the continued use of the Gateway and we all thank you for your continued use and support! We hope you find even more useful uses and information on the Gateway in the coming year!"

ICAN is an International Oceanographic Data and Information Exchange (IODE) project of the Intergovernmental Oceanographic Commission (IOC) and comprises over 60 member organizations in more than fifteen countries. The overall aim of the ICAN project is to be a global reference for the development of coastal/marine web atlases (CWAs). The long-term strategic objective of ICAN is to help build a functioning digital atlas of global coastal areas. We define coastal/marine web atlases as collections of digital maps and datasets with supplementary tables, illustrations and information that systematically illustrate coastal areas for the purposes of coastal zone management and planning, including marine spatial planning, often including cartographic and decision support tools, all accessible on the Internet. By the sharing of the expertise of its members, ICAN intends to lead, influence, guide and inform in a coherent manner on matters related to development and use of coastal/marine web atlases in order to find common solutions to CWA development whilst ensuring maximum relevance and added value for end users.

ICAN will encourage and facilitate global operational interoperability between such atlases based on the principle of distributed information and standards-based Internet web services in order to enhance coastal and marine data and information discovery, access and exchange among users, including policy makers, resource managers and the general public. ICAN governance is via a Steering Group of 16 members of which the Co-Chairs are Kathrin Kopke based at Centre for Marine and Renewable Energy (MaREI), University College Cork, Ireland (K.Kopke@ucc.ie) and Tanya Haddad, Oregon Coastal Management Program Oregon Dept. of Land Conservation and Development (tanya.haddad@state.or.us).

Map legend on page 1.

Unless otherwise credited all photographs were taken by Andrew Sherin.
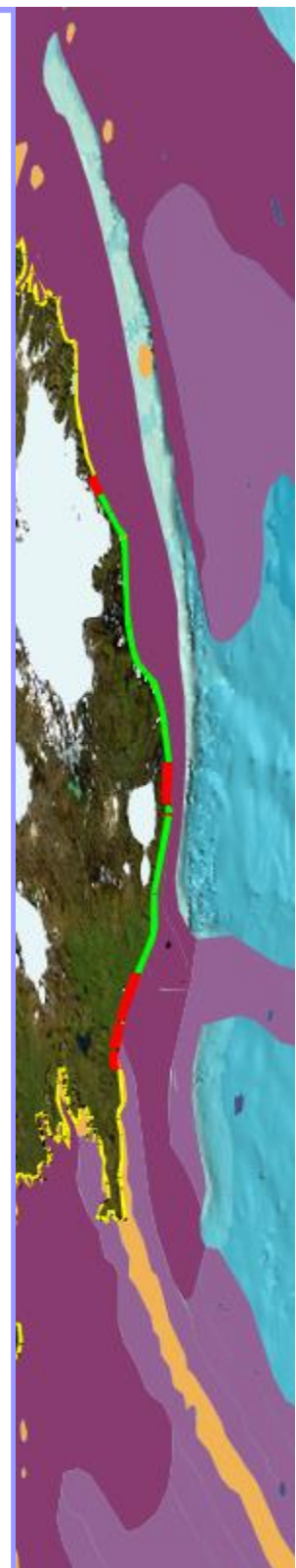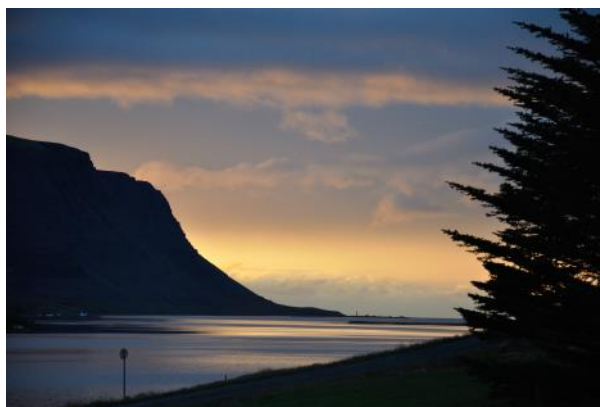
Photos: clockwise from top left; CoastGIS 2018 plenary session in the Edinborg Culture House (photo credit CoastGIS 2018); Dynjandi waterfall, the largest waterfall in the Westfjords and a stop on the post-conference bus tour to Reykjavik; sunset over Tálknafjörður, Westfjords where your editor enjoyed a soak in the community geothermal bath or Pollurinn which translated means 'The Puddle'; Ísafjörður Culture House with the Fishermen's Monument in the foreground and surrounding mountain in the background. The monument commemorates the mariners who drowned at sea and was erected to celebrate the centenary of the city of Ísafjörður.