

[View this in your browser.](#)



International Geographical Union
Union Géographique Internationale

Commission on Coastal Systems
Commission des Systèmes Côtiers



No. 92 - January 2025

Editor:

Irene Delgado-Fernandez

Missed the previous newsletter? [Click here!](#)

Objectives: The Commission on Coastal Systems encourages the **study of coastal systems throughout the world**. The Commission sponsors and supports activities leading to the exchange of information regarding coastal systems among our members and throughout the IGU at large. The focus of attention is on interactive systems, both human and physical, and the areas of inquiry include issues such as sea-level rise, land-use changes, estuarine resources, coastal tourism and shoreline development, coastal recreation, and coastal zone management. The Commission will make concerted efforts to emphasize issues of Global Change.

[Commission on Coastal Systems website](#)

MESSAGE FROM THE CHAIR



Dr. David Green, University of
Aberdeen, Scotland, UK.

It gives me great pleasure to welcome you all to the first issue of the CCS Newsletter for 2025 and to wish you all a Very Happy New Year! My thanks go to Irene Delgado-Fernandez and her team for putting together this issue of the Newsletter and for the content and finally of course to Professor Colin Woodroffe.

I am very pleased to be taking on the role of the Chair of the IGU CCS in 2025. Colin's sterling work over the last few years will, however, be a hard act to follow. On behalf of the CCS, I would like to thank Colin for all his hard work and especially his dedication and commitment in leading the CCS providing us with such a solid foundation on which to build for the future.

By way of a brief introduction, I am Director of the Aberdeen Institute for Coastal Science and Management (AICSM) in the Department of Geography and Environment, School of Geosciences, at the University of Aberdeen in Scotland, UK; Chair and Director of the East Grampian Coastal Partnership (EGCP Ltd) in Aberdeen and Aberdeenshire; and Editor in Chief of the Journal of Coastal Conservation, Management and Planning (Springer). For many years I was also the Director of the BSc Marine and Coastal Resource Management. I am the Director of the MSc in GIS degree programme, and aside from my GIS-related teaching, I currently teach modules in Hydrography, and Managing Our Coastal Environment, with a specialism in Marine Spatial Planning, which currently involves helping to roll out the Marine Planning Challenge Game to coastal stakeholders and communities as part of our commitment to community education and outreach.

I do hope that as a Commission we will continue to develop and promote the good work that this particular CCS has undertaken to date and to take this opportunity to continue to contribute to coastal education and outreach in the coming years.

I trust that you will find something of interest in this issue of the newsletter. As always, we welcome feedback on the format of the newsletter and will be pleased to make a pdf copy available to anyone who prefers to receive the newsletter in the more traditional format. Previous newsletters are archived on our CCS website, which also has a range of other resources: <https://igu-coast.org/> or email me: d.r.green@abdn.ac.uk.

I look forward to working with you all in the coming years.

PHOTO OF THE ISSUE



Greenwich Dunes, located on the north shore of Prince Edward Island National Park in Eastern Canada, experiences significant ice and snow cover during the winter months. This photo, taken in late April, captures the melting ice in the nearshore. The presence of snow and ice throughout the winter influences both aeolian processes and nearshore dynamics at this site, as well as many others along Canada's coastline. Extensive research has been conducted at Greenwich Dunes over the past two decades, providing valuable insights into beach-dune dynamics and coastal dune evolution. For more information, please refer to the article below.

Photo credit: Irene Delgado-Fernandez, University of Cadiz (Spain).

Related article: Walker, I.J., Davidson-Arnott, R.G., Bauer, B.O., Hesp, P.A., Delgado-Fernandez, I., Ollerhead, J. and Smyth, T.A., 2017. Scale-dependent perspectives on the geomorphology and evolution of beach-dune systems. *Earth-Science Reviews*, 171, pp.220-253.

Send us your coastal photos and we'll feature them in future newsletters!

[Click here for more information.](#)

MEETINGS / SESSIONS SPONSORED OR CO-SPONSORED BY THE COMMISSION ON COASTAL SYSTEMS

AUGUST 24-30, 2024. 35th INTERNATIONAL GEOGRAPHICAL CONGRESS, DUBLIN, IRELAND



The 35th International Geographical Congress was held in Dublin 24-30 August 2024. The coastal component of the congress began on 24 August with a fieldtrip to investigate the low-lying coastal environments around Dublin, focusing on Portrane and North Bull Island, both of which are of ecological and cultural significance. Led by Iris Möller, the 26 participants were provided with a comprehensive field guide.



Group photo with participants from the field trip on August 24th, 2024. Photo credit: C. Woodroffe.

The first site at Portrane is an example of one of the bar-built estuaries that are characteristic of the east coast of Ireland. Sands and gravel, winnowed primarily from glacial deposits associated with the Celtic ice sheet that covered the region at the Last Glacial Maximum, cover the seabed offshore

of the River Liffey. These have been reworked as the postglacial sea rose and shaped by wave and tidal processes into a barrier, Burrow Spit, partially occluding the Rogerstown Estuary. The 1.8 km-long beach is backed by ~9.5 ha of dunes, much of which have been converted into agricultural or residential land, and extensive salt marshes have formed in the lee of this barrier. The beach and dune front have been experiencing ongoing erosion, with several residential properties affected. Attempts to protect the frontage have led to hexagonal concrete 'Seabees' placed on the beach. These and several other management issues were discussed in the field.



Field participants discussing beach and dune erosion on the Burrow, Portrane, north of Dublin Bay.
Photo credit: C. Woodroffe.

The second field site was North Bull Island in Dublin Bay. This is a barrier island that has formed in the past 200 years since construction of the north wall designed to increase the effectiveness with which the ebb current of the estuary of the Liffey self-dredges. The island comprises a sequence of foredune ridges, constituting one of the few places along the east coast of Ireland that continues to prograde, and salt marsh that has accumulated in the lee of this barrier. Located less than 7 km from Dublin city centre, this is a popular recreational destination with two golf courses on it. However, it also holds multiple protection designations, having been declared a National Nature Reserve in 1988, and being recognised as a UNESCO Biosphere Reserve. After an introduction in the visitor centre, participants visited the sandy foreshore, and the leeward salt marsh, and a number of ongoing research projects were discussed.



Pat Corrigan, Dublin City Council warden of North Bull Island, giving an introduction to the island to fieldtrip participants. Photo credit: C. Woodroffe.

The Congress opening ceremony was held in the evening of 24 August. This started with an impressive performance by an Irish drumming and dancing ensemble, warm welcome speeches by the Chair of the Organising Committee, Prof Niamh Moore-Cherry, and others. The Congress was attended by 2654 delegates from 80 countries, featuring 1,815 oral papers, 3 public engagement events, poster sessions, photo exhibitions, and performances by the 'Circus of Climate Horrors' and many Irish musicians over the 6 days.

CCS-SPONSORED COASTAL SESSIONS

The Commission on Coastal Systems sponsored four oral paper sessions, that occupied 7 separate time slots within the Congress, as well as several posters.

The first, entitled '**Transdisciplinary science for near-future habitable coasts**', convened by Paolo Ciavola and Tom Spencer (as well as Iris Möller) included several papers that described EU-funded programs to restore coastal ecosystems and/or adopt nature-based solutions. These included community/volunteer-based efforts to restore coastal wetland at Harpers Island, County Cork, wetland restoration sites in the WaterLANDS project in the Ems-Dollard estuary, and the Blue Carbon values of over 50 nature-based solution projects around Ireland as part of the Marine Strategy Framework Directive Programme of Measures. An innovative approach was described to automate coastal vegetation line extraction from historical aerial images using the Normalized Green-Blue Difference Index. Approaches to detecting coastline changes were reviewed, identifying advances since the IGU Commission on the Coastal Environment in the 1980s. Variability in shoreline response was outlined using multiple techniques for the Camposoto coastal barrier in southwest Spain. Whereas a morphometric study of a rocky cliff section in eastern Spain indicated the significance of structural control and provides a basis for assessing geological hazards. By contrast with coasts experiencing relative sea-level rise, the morphostratigraphy of tidal marshes in the St Lawrence estuary, Quebec, which experiences relative uplift, include terrace-like steps indicating complex development.

This introductory session provided a good introduction for a second session entitled **‘Managing coastal hazards and minimizing vulnerability’**, chaired by Irene Delgado-Fernandez (although organised by Ritika Prasad who was unable to attend). Transformational adaptation was further defined in line with the IPCC, indicating that it refers to adaptation that changes the fundamental attributes of a system in response to climate and its effects. The challenges faced by nature restoration projects in northern France were outlined, contrasting with 15 years of monitoring at Greystones Harbour, south of Dublin, where nourishment of a beach impacted by engineering works to the south, appears to have met community expectations. Based on interviews in England, the importance of building on the lived experiences of stakeholders was apparent. Further evidence of the value of satellite-derived shorelines was presented with a detailed assessment of how effectively the waterline can be detected at the time of a high-resolution satellite overpass. Whereas tidal conditions can be relatively well constrained for such analysis, a further presentation on wave climate analysis for the Dublin coast indicated the complexity of waves entering Dublin Bay. The significance of extreme storm events was demonstrated with an example of a hurricane (Hurricane Fiona in 2022) and its impact on beach-dune systems on Prince Edward Island in Canada.

The third session was on **‘Climate change and local knowledge in coastal and island contexts’**. Convened and chaired by Maeve McGandy, the first paper began by outlining methods of measuring saltmarsh erosion, particularly adopting participatory mapping, and incorporated architectural design-thinking along Mulranny’s degraded coastline (County Mayo, Ireland). The interplay of socio-ecological relationships with climate, where many activities are weather-dependent, on the remote island of Inishbofin off the west coast of County Galway was discussed. The Irish perspectives contrasted with risk perceptions of the various stakeholders on the coasts of Mauritius. A very different experience was described for the disappearing islands of the Sundarbans in West Bengal, India. This deltaic region is subsiding, and the presentation recounted field narratives of marginalised people through a decolonial lens.

The final session entitled **‘Managing, protecting, and conserving of the coastal natural resources’** was chaired by Colin Woodroffe. The impact of coastal erosion on tourist beaches along the coast of Ghana was described, and a methodological approach to unified spatial planning approach for achieving sustainable development in coastal areas in China was outlined. The effectiveness of multispectral and LiDAR UAV remote sensing and fieldwork was explained for different eco-geomorphological units of the Camposoto sandy barrier in southwest Spain, with a discussion of how satellite imagery might be used to monitor changes to the dune system. The vulnerability of cycleways along adjacent coasts was also explained. Several papers described the blue carbon potential of Irish saltmarshes. These included the results of eddy covariance measurements of carbon dioxide flux from salt marsh in Derrymore (County Kerry), indicating a modest carbon sink, assessment of soil organic carbon content, biomass and accretion rates in the Turvey Nature Reserve salt marsh (County Dublin), and an overview of the emerging threats to saltmarshes more generally.

Report submitted by Iris Möller and Colin Woodroffe.

REPORTS ON MEETINGS

THE INTERNATIONAL COASTAL SYMPOSIUM (ICS2024)



INTERNATIONAL COASTAL SYMPOSIUM

DOHA2024

It was with great pleasure that we welcomed everyone to the 17th meeting of the International Coastal Symposium, known throughout the world as the ICS. It is amazing to see how the ICS has grown in content, attendance, and stature since it was first started in 1990. Our original vision was to hold smaller scientific meetings in world-class venues. Over time, successive meetings grew by tenfold and migrated to many countries around the globe. By doing so, more interaction among coastal and marine experts, delegates, researchers, guests, and sponsors has been achieved. Furthermore, the ICS has matured over the past 25 years and now attracts researchers from all different regions of the world in a wide variety of fields.

As delegates from all over the world gathered at the ICS2024 in Doha, Qatar, we collectively shared in the latest coastal studies being conducted today. This was an historic meeting, as it was the first ICS to officially take place in the Middle East, and we hope this will be a trend for the future. The

ICS2024 was led by a wonderful Local Organizing Committee (LOC), which included the UNESCO accredited University of Doha for Science & Technology (UDST), and was under the auspices of the Coastal Education & Research Foundation (CERF) and the Journal of Coastal Research (JCR). CERF and the JCR are specifically indebted to the following individuals for their hard work in organizing this symposium: Dr. Salem Al-Naemi (UDST President), Prof. Michael Phillips (ICS2024 Chairman), Prof. Rachid Benlamri (ICS2024 Co-Chairman), and Ms. Nayla Higazy (ICS2024 Secretariat). Our hosts are graciously thanked for the preparation and management of this meeting and for their dedication, foresight, and hospitality.

The University of Doha for Science and Technology (UDST), as the proud local organizer, was truly honored to host ICS2024 this past year. We are excited to continue our engagement and play an active role in the future of our coasts, fostering further collaboration and innovation in the years to come. On behalf of the ICS2024 organizing committee, we are delighted to inform you that the ICS2024 Photo Album is now live on the ICS2024 website. You can view and download photos from the event through the following link: <https://www.ics2024.org/photo-album>

All the very best,

Coastal Education and
Research Foundation

<https://www.cerf-jcr.org/>



Report submitted by Chris Makowski.

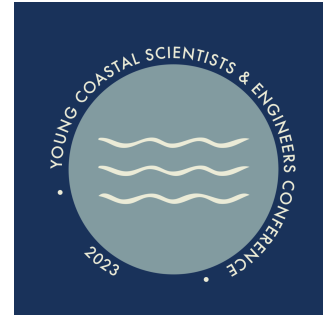
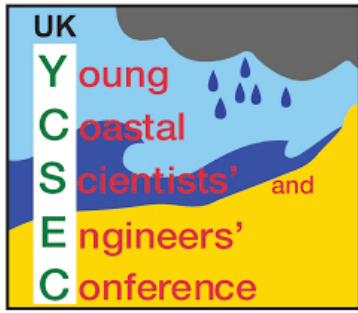
MEETINGS WITH COASTAL INTEREST

YOUNG COASTAL SCIENTISTS & ENGINEERS CONFERENCES

The Young Coastal Scientists & Engineers Conference (YCSEC) series bring together early-career researchers and practitioners, such as PhD students, postdoc researchers & recently qualified professionals, with expertise and interests in coastal environments. It provides a welcoming and supportive environment to present and discuss research and share good practice.

There are **three branches of the conferences** which are a great opportunity to interact with a small community of researchers. **The next YCSEC is scheduled for 3rd to 4th April, 2025**, in Newcastle University, UK. Registration is still open! Check out the details below.

[YCSEC - 2025 - KEY DATES!](#)



APRIL 27 – MAY 2, 2025. EGU GENERAL ASSEMBLY. VIENA.



CCS is sponsoring a session at EGU 2025: GM8.5 Coastal Morphodynamics: nearshore, beach and dunes, convened by Irene Delgado-Fernandez, Emilia Guisado-Pintado, Susana Costas, Carlos Loureiro, Dominique Townsend. We are looking forward to your active participation again! Please note: The abstract submission deadline is Wednesday, 15 January 2025, 13:00 CET.

[EGU25 Abstract Submission](#)

COASTAL DYNAMICS 2025, APRIL 7 – 11, 2025



The University of Aveiro, Portugal, is set to host **Coastal Dynamics 2025** from April 7th to 11th, 2025. This prestigious conference will center around the theme “**Living with a Dynamic Coast**”, highlighting the challenges and opportunities associated with coastal management in the face of natural and human-induced changes. While the abstract submission period has now closed, the

event promises to bring together leading researchers, engineers, and policymakers to share insights and cutting-edge research on coastal dynamics.

For more details, visit the official website: <https://coastaldynamics25.web.ua.pt/>

GEOHAB 2025, MAY 12 – 16, 2025



The primary objective of GeoHab 2025 is to bring together scientists and stakeholders from around the globe to exchange knowledge, insights, and advancements in the field of marine habitat mapping. Scheduled to take place in the **Florida Keys** from **May 12–16, 2025**, the conference will provide a platform for discussing new technologies and applications in marine habitat studies. Participants are encouraged to submit abstracts by **January 17, 2025**.

For further details and updates, visit the official website: <https://geohab.org/keywest2025/>

HIGHLIGHTS & FEATURES

IGCP 725 “FORECASTING COASTAL CHANGE”

2024 was a big year for IGCP Project 725! Through a series of meetings, workshops, and panel discussions, we were once again successful in bringing together geoscientists and key process/statistical modellers. New collaborations were formed through each of our marquee events: Geochron January III in January 2024 and our Project meeting in the Philippines in Sept/October 2024. Importantly, these were generally between coastal scientists whose work is field-based and those whose work emphasizes numerical modelling, and also with stakeholders in the Philippines.

Geochron January III: Mining the Historical Coastal Record, followed the theme of IGCP725 by covering the basics “from cores to code” for improved “forecasting of coastal change”. In this edition, we focused on field sampling strategies across environments, but timescales were centered around the historical record (early historical maps and written documentation through to modern satellite imagery). The workshop consisted of two components: Twelve pre-recorded presentations that were posted one week in advance of the workshop on the IGCP725 YouTube site; and two synchronous breakout sessions where attendees had the opportunity to interact with topical experts and discuss their own data/project needs and questions.

The IGCP725 annual meeting involved field trips to Northern Luzon coastal communities where emerging research from the past decades of coastal research at these sites as well as those elsewhere in the Philippines was highlighted. Given the vulnerability of the Philippines to typhoons, earthquakes, tsunamis, and sea level rise, increased exposure of the past, current, and future research needs of the Philippines was a particular focus of the meeting. The comprehensive field guide was co-created by meeting host Dr. Noelynna Ramos, who has been working at many of these locations for more than a decade. The detailed field manual highlights key methodological developments and geologic results and includes studies that demonstrate best practices for the integration of modelling and geologic research into coastal change spanning from days to millennia (<https://www.sfu.ca/igcp-725/Resources.html>).

Following the last few years of successful meetings, conference sessions, and workshops, the IGCP725 leadership team looks forward to new events in the years to come. Of particular note is an annual meeting in Australia in 2026 and this year's Geochron January IV: Looking to the Future – Modeling Coastal Change (Registration still open; see details below).

GEOCHRON JANUARY IV: January 16, 2025

Looking to the Future: Modelling Coastal Change

The IGCP725 leadership team invite you to participate in a virtual workshop focused on the applications, approaches, tools, and potential pitfalls of various approaches used to reconstruct and project coastal change. Previous Geochron virtual workshops covered radiocarbon dating in 2022, moved 'beyond radiocarbon' in 2023, and in 2024 looked at documenting and monitoring coastal change using modern techniques, and historical and geological records. This year, the emphasis is on using modelling approaches, how they work and what they might tell us about future changes in coastal settings. This workshop will take place on Thursday 16 January 2025. It is free to attend and fully virtual. If you wish to register for the workshop, please go to the IGCP725 webpage and complete and submit the registration information by Monday **6 January 2025**. Links to workshop materials will be circulated one week in advance of the workshop.

The workshop will have two components:

1. Pre-recorded presentations by each of our expert guest speakers, covering the topics advertised. These will be available to view one week in advance of the live sessions
2. Breakout Sessions covering one or more tools and topics on 16 January 2025. These three breakout sessions will be held during two timeslots: Topics include:

Planform Coastal Evolution (Andrew Ashton, Woods Hole Oceanographic Institution, USA)

Aeolian Transport Modeling of Dunes for Coastal Engineering (Sierd de Vries, TU Delft, NETHERLANDS)

Modeling Dune Processes (Susana Costas, Universidadedo Algarve, PORTUGAL)

Long-term Shoreline Change Modeling (Sean Vitousek, US Geological Survey Pacific Coastal and Marine Science Center, USA)

Storm-Impact Modeling (Kristen Splinter, University of New South Wales Sydney, AUSTRALIA)

Prediction of coastal processes by a tsunami based on numerical modelling (Masashi Watanabe, University of Southampton, UK)

Tsunami modeling with GeoClaw: Balancing accuracy & efficiency with adaptive mesh refinement (Catherine Jeffries, Virginia Tech, USA)

River Delta Modeling (Jaap Nienhuis, Universiteit Utrecht, NETHERLANDS)

Modeling Coastal Cliff Erosion (Mark Dickson, University of Auckland, NEW ZEALAND)

Spatiotemporal Sea-Level Modeling (Jennifer Walker, Rowan University, USA)

Kind regards from the IGCP725 leadership team:

Jessica Pilarczyk, Chris Hein, Matt Brain, Noelynna Ramos, Annie Lau, & Andy Green

IGCP 725 Website



AWARDS

Congratulations to:

MASATOMO UMITSU who has been awarded the International Geographical Union Distinguished Practice Award 2024 in recognition of his remarkable achievements in relation to the geomorphology and environmental studies of Asian alluvial and coastal plains, important landforms where many people live and make their livelihoods.

ANDY SHORT who has been awarded the Coastal Award 2025 by Coastal Dynamics (to be awarded at the 2025 meeting in Portugal, see above), in recognition of his outstanding research on beach morphodynamics, surf zone coastal processes and beach safety, and impressive publications on coastal systems.

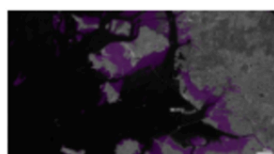
AVAILABLE RESOURCES ON THE CCS WEBSITE

Have you explored the wealth of resources available on the Commission on Coastal Systems website? These encompass diverse datasets spanning world population statistics, engaging podcasts, connections to various coastal associations, an array of informative videos, and community-driven initiatives. There's a wide spectrum of valuable content waiting for you!

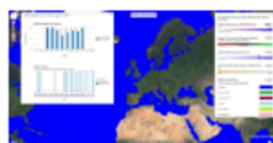
Click here to find out more.



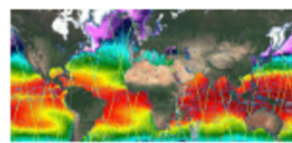
CoastSAT



Global Intertidal Data



Global Surface Water



Ocean Virtual Laboratory



Local Wave and Tide Data



Marine Data Portal



Coastal sea level anomalies



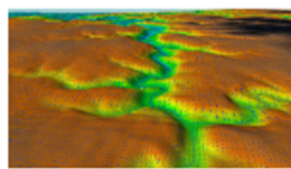
WorldPop



CoastalDEM



World Vector Shoreline (WVS)



Spatial Data Management with Google Earth Engine



Coasts for Kids the Series



Sea Level Projection Tool



Coastal Futures (CoFu)



Coastal Education and Research Foundation



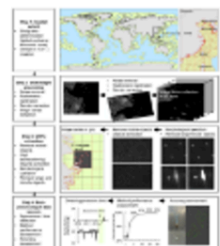
Living Deltas Research Hub



CoastSnap



Digital Coast



Global Offshore Wind Turbine Dataset



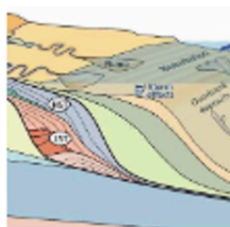
Coast2Coast Zoominars



Coast2Cast Podcasts



Women in Coastal Geoscience and Engineering network



Source-to-Sink





**BECOME
A CORRESPONDING
MEMBER
OF THE IGU
COMMISSION ON
COASTAL
SYSTEMS**

We kindly ask for your assistance in sharing this newsletter with individuals you think might find its content valuable. This newsletter will be sent out twice a year, predominantly via email. We encourage you to forward this edition to contacts in your coastal network and invite them to subscribe by clicking on the link below.

**JOIN THE CCS
MAILING LIST!**



**International Geographical Union
Union Géographique Internationale**

**Commission on Coastal Systems
Commission des Systèmes Côtiers**



Click [HERE](#) to download a PDF copy of this Newsletter.

[Unsubscribe](#) | [Manage subscription](#)