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## VENUE AND DATES

The conference will be held from 30 May – 2 June 2017 in Busan, Korea, hosted by the Korea Institute of Ocean Science and Technology (KIOST). The meeting venue will be the Commodore Hotel Busan. (<http://www.commodore.co.kr/eng/html/main/index.php>)

## CONFERENCE STRUCTURE

The conference will take place over 4 days. Each day will begin with an invited plenary address followed by two parallel sessions.

## PARTICIPATION AND ELIGIBILITY CRITERIA

Applicants must be under 35 years in age or have completed a PhD since 2012. Early career scientists who would like to participate must submit a complete application which consists of 1) pre-registering online, 2) an abstract of their original research for oral or poster presentation, 3) a curriculum vita, with the usual information and a section labeled MOTIVATION that describes how this conference will benefit the applicant towards attaining their marine science professional goals, and 4) an on-line financial application for travel funds. The Scientific Steering Committee (SSC) will evaluate the applications and invite successful candidates to attend the conference. Scientists from developing countries are especially encouraged to apply. Venue capacity restricts the conference to ca. 130-140 participants.

## MEETING EXPENSES/FINANCIAL ASSISTANCE

There is no registration fee. Room and board expenses during the event will be covered for all invited applicants. Travel expenses will be partially-to-fully covered for a portion of invited attendees (based on financial need and scientific potential).

## SOCIAL EVENTS

Several networking opportunities are planned to promote informal discussion among participants, including communal meals, poster sessions and an afternoon excursion.

## DEADLINES AND IMPORTANT DATES

**September 28, 2016: Abstracts, CVs, and financial support applications are due (submitted through website).**

January 2017: Applicants notified of decisions on abstract acceptance or rejection, and amount of financial support.

February 2017: Invited participants to confirm participation

*Note: Exact dates will be clearly stated on the conference website.*

## CONFERENCE WEBSITE

For all details pertaining to the conference, check the conference website at: <http://www.pices.int/ecs3>

## SCIENTIFIC STEERING COMMITTEE

Antje Gimpel (Thunen Institute, Germany), Allan Hicks (International Pacific Halibut Commission, USA), Tae-Wook Kim (Incheon Nat. Univ., Republic of Korea), Haruka Takagi (Waseda Univ., Japan), Daniël van Denderen (DTU Aqua, Denmark), Maija Viska (Latvian Inst. Aquatic Ecol., Latvia)

## ADVISORS

Kyung-Il Chang (Seoul National Univ., Republic of Korea), Chul Park (Chungnam National Univ., Republic of Korea), Bryan Black (Univ. of Texas, USA)

## CONVENERS

Hal Batchelder (PICES), Wojciech Wawrzynski (ICES)



## Climate, Oceans and Society: Challenges and Opportunities



3<sup>rd</sup> Early Career Scientist Conference  
30 May – 2 June 2017, Busan, Korea



[www.pices.int/ecs3](http://www.pices.int/ecs3)

## BACKGROUND AND OBJECTIVES

To encourage the participation of young scientists in international scientific investigations and to promote their involvement in the management and stewardship of the marine environment, the North Pacific Marine Science Organization (PICES) and the International Council for the Exploration of the Sea (ICES) are co-organizing a conference for Early Career Scientists in Busan, Republic of Korea, in late-May-June.

## SCIENTIFIC THEMES AND SESSIONS

The conference theme “Climate, Oceans and Society: Challenges and Opportunities” will broadly address interactions among the natural processes of the ocean and human activities affecting, and affected by, marine ecosystems, including sustainability of marine resource management. One of the challenges is to become more socially and environmentally conscious, while taking greater responsibility for maintaining ocean ecosystems through sustainable ecological and resource management. Contributions should address one of the following session themes:

### 1: Climate effects on physical, chemical and biological processes

Climate change influences marine biogeochemistry and ecosystems through changes in physical processes such as currents, eddies, mixing, and thermohaline circulation. Understanding these changes at various spatial-temporal scales and exploring their effects on biogeochemical cycling, species distributions, ecophysiology, and marine food-webs is fundamentally important.

#### 1a. Climate change and the effects on the ocean

Physical changes, such as temperature, precipitation and ice cover lead to altered water circulation and ocean chemical composition that can influence ocean ecosystems. This session will examine climate change impacts on marine physical, chemical and biological processes and their interactions.

#### 1b. Cross-scale interactions and trends of climate change

Downscaling global climate and ecosystem models to regional and local scales is important for understanding small-scale ecosystem structure. Contributions are welcome that focus on shifts, trends and variability in the marine environment and biota at seasonal, interannual, decadal, and century timescales.

#### 1c. Coastal dynamics: changes in sea level, geomorphology and ecosystems

Coastal areas are important for humans and marine ecosystems. It is there that water and land meet, marine life is rich and diverse, and human populations are concentrated and reliant upon services provided by the ocean. This session seeks abstracts on topics related to the impacts of sea-level rise, upwelling and downwelling, altered nutrient cycling, wave energy and ocean currents on coasts, marine habitats and their biota.



### 2: Anthropogenic effects on the marine environment

Human activities significantly impact the marine environment by directly utilizing coastal land and marine resources. Developing mitigation strategies and management tools based on scientific knowledge of biogeochemistry, life cycles, and ecosystem processes is critical for the concurrent achievement of sustainable use of marine resources and maintenance of healthy ecosystems. This theme focuses on monitoring, assessment and management of anthropogenic effects on the marine environment.

#### 2a. Introduction of anthropogenic substances to the ocean and their impacts

The assessment of anthropogenic effects requires sound knowledge of the complex spatial and temporal relationships between human activities and the sensitivity of marine ecosystem components. The monitoring and evaluation of impacts such as pollution, including marine debris, petrochemicals and other toxics coming from human activities is essential. Particularly important are observation-based results demonstrating temporal trends, fates of pollutants, pollution sources, transport pathways (e.g. currents, river, atmosphere, submarine groundwater) and the impacts on the ecosystem.

#### 2b. Ecosystem-Based Management – Get the big picture

Ecosystem-Based Management (EBM) is a holistic approach to management that considers the entire ecosystem, including humans. Its goal is to maintain the ecosystem in a healthy, productive and resilient state while exploiting natural resources for the benefit of society, and assuring that the ecosystem services it provides are available for current and future generations. This topic explores the assessment of direct and indirect effects of diverse human uses (e.g. fisheries, mariculture, marine energy, transportation and other sectors) on coastal systems.

#### 2c. Evaluation of best management practices

This topic addresses the evaluation of management strategies/options and their consequences for marine ecosystems. With the implementation of links between science and management, future risks, conflicts or synergies (e.g. between wind farm development and aquaculture) can be identified, and trade-offs might be eased. Outcomes will offer decision support and facilitate the communication between scientists, stakeholders, planners and decision makers.

### 3: Patterns and processes in marine ecosystems

Investigating the patterns and processes in marine ecosystems is of great interest to marine scientists and managers, and is fundamental to modeling ecosystems, predicting change, determining effects of human impacts, and managing marine populations. Abstracts submitted to this theme will explore marine life and its dynamics, from individuals to ecosystems, as well as present the tools and models suitable to explain them.

#### 3a. Biodiversity and ecosystem functioning

Marine biodiversity has a global conservation value and is an important factor in marine ecosystem functioning. This topic will embrace studies that characterize marine biodiversity patterns, describe biodiversity and ecosystem functioning relationships and link community and species' traits to ecosystem function.

#### 3b. Marine population dynamics and community ecology

Abstracts will address the ecology of individuals, populations and the interaction of species within marine communities using modeling and observation techniques. The session invites studies that link evolutionary and

ecological dynamics, examine multi-taxonomic and/or multi-habitat interactions, and investigate other biological relationships in the ocean.

#### 3c. Marine ecosystems and biogeochemical cycles

Marine ecosystems play a key role in the cycling of carbon and other important elements, but many biological processes directing these biogeochemical cycles remain poorly understood. This topic welcomes studies on plankton dynamics, primary/secondary production processes, the microbial community, carbon transport to the deep sea (biological pump), and studies that link ecosystem models with biogeochemistry.

#### 3d. Ecological forecasting in marine ecosystems

The forecasting of marine ecosystems under changing environmental conditions will be explored by predicting how human populations may affect ecosystem dynamics, and how these projections deal with uncertainty.

