Jellys

SYSTEMS AND TOOLS FOR LOCATING BLOOM OF JELLYFISH AND PREDICTING THEIR DISPLACEMENT TOWARDS THE COAST

In the last decade the presence of jellyfish in the Mediterranean Sea is rising causing impacts on the marine environment and on human activities The main consequences are related with human health (each summer about 150.000 person need medical assistance for jellyfish stings in the Mediterranean area), fishing and aquaculture (jellyfish block fishing nets impairing their functioning, and eat fish eggs and larvae, and their food), industry (blocking cooling inlets of industrial complexes and power plants). In order to mitigate this phenomenon a key strategy comprises the setting up of early warning and forecasting systems based on large scale observations and numerical model fields such as those available from the *Copernicus* products (*EO* and other data from the *Marine Environment Monitoring Service*). Copernicus satellite data products, in particular Sentinel-1 and Sentinel-3, can assist jellyfish presence prediction by providing information on a range of physical and biological ocean parameters that concur to jellyfish blooms, especially in terms of aggregation due to oceanographic conditions. Ocean temperature, salinity, water currents, sea-surface height, upwelling-events and primary production that strongly affect jellyfish biomass. Several CITIZENS-SCIENCE based projects have been proposed in the Mediterranean Sea to collect data on jellyfish (Italian project "Occhio alla Medusa", Maltese project "Spot the Jellyfish"). This workshop is organized to discuss the latest improvements in the detection, spreading and forecasting of jellyfish blooms, in order to compare different experiences on the use of *Copernicus* data, and to gather user requirements from the scientific community.

WORKSHOP AGENDA

9:30 - Welcome - Nico BONORA, ISPRA

Session 1: methods for jellyfish detection *(Arianna ORASI, ISPRA)*

9:35-9:50 - Arianna ORASI, ISPRA - *Identifying potentially harmful jellyfish blooms using SAR Sentinel 1 images*
9:50-10:05 - Alan DEIDUN, Università di Malta - *Jellyfish CITIZENS SCIENCE spotting efforts in Malta: the 'Spot the Jellyfish' campaign experience*
10:05-10:20 - Dori EDELIST, University of Haifa - *Hindcasting the occurrence and dispersal of Mediterranean jellyfish blooms via citizen science*
10:20-10:35 - Valentina TIRELLI, OGS - *avvistAPP : how to get jellyfish sightings by a click!*
10:35-10:50 - Serena ZAMPARDI, Stazione Zoologica Anton Dohrn - *Monitoring jellyfish blooms along the Italian coasts: a "CITIZENS SCIENCE" based approach*
10:50-11:05 - Laura GIUSTI, Mediterranea ONG - *Mediterranea project: a direct experience of advanced CITIZEN SCIENCE and its scientific impact in the Mediterranean*
11:05-11:20 - Coffee Break

Session 2: Methods for dispersion and forecasting of jellyfish blooms *(Antonello BRUSCHI, ISPRA)*

11:20-11:35 - Svitlana LIUBARTSEVA e Giovanni COPPINI, CMCC - *Lagrangian modeling the jellyfish drift: capabilities and limitations*
11:35-11:50 - Thomas MORANDUZZO, Colombo Sky - *JellyX: An ocean monitoring tool to predict jellyfish swarms. Thomas Moranduzzo*
11:50-12:50 - Discussion
12:50-13:00 - Wrap up and conclusions

15th JUNE 2022
WORKSHOP ONLINE

Channel YouTube ISPRAVIDEO Streaming: https://www.youtube.com/c/ISPRAVideoStreaming

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