

## Cover sheet

Full name of state or organization:

Spain

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Information for appropriate contact person

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Is your state or organization still interested in continuing as an Observer of the Arctic Council?

X Yes  No

## SPAIN REPORT

Spain has been an **Arctic Council (AC) observer country** since 2006 and a member of the **International Arctic Science Committee (IASC)** since 2009. Spain is also a member of the **OSPAR Convention** and of the **European Polar Board (EPB)**

Spain is aware that decisions taken by the **Arctic Council**, though regional, have an increasingly global impact. Bearing it in mind, Spain participates regularly in the meetings of the **Senior Arctic Officials (SAO)** since 2005 taking into consideration the important role of observer states in Arctic research and the implementation of AC objectives. The fundamental pillar of Spain contribution in supporting AC objectives, is its Arctic research potential.

Spain's strategy for polar research in the Arctic is based in collaboration with other countries that may host our researchers in their stations and on our Research Vessels, **the R/V Hespérides and the R/V Sarmiento de Gamboa**

Regarding organizations in the Arctic, the **Secretary of State for Research, Innovation and Development** is in charge of managing scientific activities from Spain, and planning investments. The **Spanish Polar Committee** is in charge of coordinating activities in the Polar Regions.

Polar research is a strategic priority for the Spanish scientific policy, due to its scientific importance and, also, to its strategically and socio-economically high impact in areas of interest to Spain.

Concerning Arctic Ocean resources protection, the **Spanish Oceanographic Institute (IEO)** monitors all fisheries, using a system that includes a network of data collectors in landing ports and a team of scientific observers aboard fishing boats, to ensure the sustainability of the resources exploitation. The data collected covers not only fishing statistics but, also, scientific information relevant to studies on biodiversity and biomass evolution. The IEO participates yearly, on the **"Regional Coordination Meeting of North Sea and Eastern Arctic; RCM NS & EA"**, reporting and developing national actions related to the extractive sector (**PNDB**) in the North Sea and East Arctic.

These activities are enabling Spain to develop an internationally renowned polar scientific program, with a widened Arctic view.

## SPANISH CONTRIBUTION TO ARCTIC COUNCIL WORKING AND EXPERT GROUPS FIELDS OF INTEREST

### AMAP

- **The Spanish National Polar Data Centre (NPDC/IGME)**, is in charge of the polar data archive, management and coordination, according to our national and international data policy. NPDC provides a metadata web based system and is an active member of AMAP/SAON Board, SAON/IASC Arctic Data Committee (ADC), and AMAP/SAON Committee on Observations and Networks (AMAP/SAON. CON).

- **IAOS, EU Horizon 2020 "Integrated Arctic observation system"** Project. Dr. F. Navarro (Universidad Politécnica de Madrid, UPM), participates, combining a large set of data from various sources, into modelling experiments.

- **SVALGLAC Research Project “Sensitivity of Svalbard glaciers to climate change”**, ERA-NET within the **PolarCLIMATE** programme. The role of the Spanish team was to develop models of glacier flow dynamics and calving fluxes, using a ground-penetrating radar. The IP of the Spanish team, Dr. F. Navarro (UPM), was the co-coordinator of the project.
- **SATICE** (Dr. P. Elosegui coordinator and PI). **SATICE** is the first high-rate, high precision, continuous GPS positioning experiment on sea ice in the Arctic Ocean. Spain/CSIC is responsible for the development and deployment of the high-precision GPS component. Nine SATICE GPS buoys are being deployed across the Arctic for dynamic ocean topography and Arctic freshwater storage determination.
- **University of Valladolid**. From 2002 the group is performing Arctic campaigns in cooperation with ALOMAR (Arctic Lidar Observatory for Middle Atmosphere Research); for the scientific use of CIMEL photometer permanently operative in RIMA net.

#### **CAFF**

- **The National Museum of Nature Sciences** (Dr. A. Barbosa) works in the study of the geographic variation of infections, parasites, immune system functioning and pollution levels in birds.
- **Collaboration between UAM (Madrid Autonomous University), Canadian University of Laval and CEN**. This long term cooperation is aimed to increase knowledge on how global change affects polar freshwater ecosystems in lakes. (Dr. A. Quesada (UAM) is the leader of this long-term collaboration. **CLIMARCTIC**, in the European Union H2020, the ERA-NET program **BIODIVERSA** funds the project. Dr. A. Quesada is a member of the steering committee that investigate the biodiversity in High Arctic at watershed level, covering lakes, soils and vegetation, related with climate change.

#### **SDWG**

- **“Arctic: opportunities and challenges deriving from climate change”**. Dr. Elena Conde (Universidad Complutense de Madrid, UCM) group analyze climate change dynamics regional consequences in the Arctic exploring the international legal and political framework available in addressing the challenges taking place at present in the Arctic.
- Project **INUIT WINDSLED. (Ramon Larramendi)** has created a wind moved vehicle that can be used for science. The vehicle has been working on Greenland research projects.
- **European Union Project EU- Polar Net (Polar Regions Connecting Science with Society)**. The Spanish role includes the scientific responsibility in the WP2 in which Spain is deputy leader and task leader

#### **ACAP**

- **Absorbing aerosol monitoring over remote regions**. Dr. L. Alados (University of Granada UGR) is working in global atmosphere particles contamination including plane measurements over the Arctic. In 2016 the project overflew the Arctic, with a specially instrumented plane, measuring atmospheric black carbon and particulate contamination.
- **University of Barcelona, and University of Sevilla** collaborate to study the transport, dispersion and accumulation of particulate matter in the Arctic Ocean using isotopes (TEIs) in studies of dispersion of contaminants.
- **REMARCA**. Dr. J. Dachs (IDAEA-CSIC) explores in the Arctic and the Antarctic the fate and remobilization of POPs and the polar amplification process.

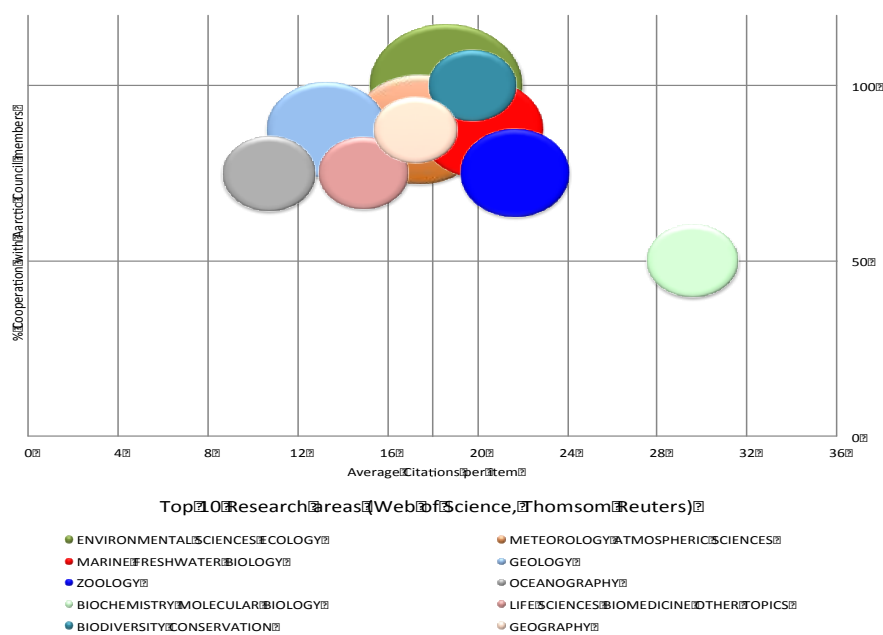
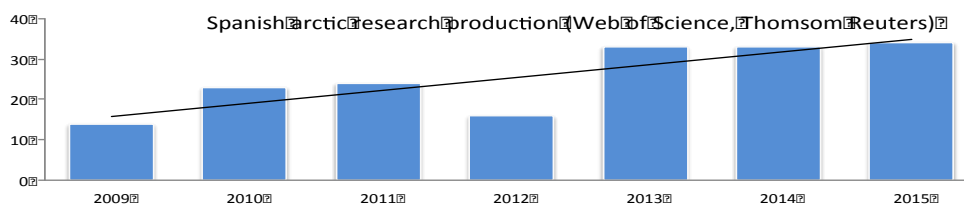
#### **PAME**

- **ECOPESLE-2. IEO (Spanish Inst. Of Oceanography)**, Starting in 2016, is a 5 years programme onboard Spanish commercial ships to monitor fishing resources in Svalbard (ICES-IIb-2) protected area.

- **EVAPESLE-3.** IEO cooperates with ICES/AFWG on Arctic fisheries, getting data and reporting on Spain's extractions.
- **DEGLABAR.** Dr. JL Casamor, conducts research on the characteristics of the last glaciation in Barents Sea, and analyses the impact of glacial melting in the instability of the continental margins.
- **The Autonomous University of Barcelona** is working in a long term study of the natural variability, at submillennial frequencies, of the interactions between climatic variability, sea-ice, export productivity, and pelagic-benthic coupling during the Holocene. Study areas are the Barents Sea and the Svalbard NO/ Fram Strait zones.

### AC EXPERT GROUPS

- **BCMEG:** Dr. M Catalan (CPE) is cooperating with the study groups through its comments to the different reports and facilitating access to the Greenhouse and particle atmospheric contamination data, as published by the Spain Inventories.
- **CAFF/AMBI** Dr. A Barbosa (MNCN-CSIC) cooperates with the group in relevant aspects related to migration of birds between the Arctic and Africa (back and forward) when crossing Spain. The group objectives are closely related to the **Agreement on the Conservation of African-Eurasian Migratory Birds** signed by Spain on 1999. The Spanish contribution to the agreement could easily be translated to fit the working and expert group aims.



**Upper Figure** presents the growth of number of publications on the Arctic issued by Spanish groups in the last 7 years. Only peer-reviewed papers published in international journals have been considered in this graph. **Lower Figure** shows that most papers have been published in collaboration with Arctic countries researchers and programs

if applicable, please describe in no more than 1 page your state or organization's future plans for contributing to the work of the Arctic Council's Working Groups, Task Forces and/or Expert Groups. Please highlight intentions to contribute to specific projects and to collaborate with Permanent Participants.

Considering the present and future situation as an Observer Country of the ACL, Spain has recently published "***Guidelines for a Spanish Polar Strategy***" and its commitment to:

- Foster peacekeeping, environmental protection and security in the polar regions, as well as the development of scientific and technical polar research in the framework of international cooperation;
- Consider the impact of climate change on the polar regions and vice versa, protecting the polar environment on the basis of the precautionary principle, making use of the best available scientific knowledge at any given moment, including the adoption of the necessary measures to reduce emissions;
- Support Spain's involvement in all the major polar organizations to ensure its participation in such fields of special interest as scientific research, environmental protection, natural reserves, energy, industry, resources, polar technologies, bioprospecting, tourism, transport, fisheries and support for the lifestyles and cultures of the indigenous Arctic populations;
- Consider the importance of action in the social and human spheres in the Arctic, pursuant to the resolutions adopted by Arctic coastal States. The indigenous communities must be taken into account and are entitled to benefit from the activities carried out in their habitat, including respect for their environments and their lifestyles;
- Promote the necessary measures for free, safe and environmentally-friendly trans-Arctic maritime transit, in strict compliance with the 1982 UNCLOS and the IMO's International Code for Ships Operating in Polar Waters (Polar Code), the natural multilateral framework for managing navigation issues, including polar navigation;
- Consider Spain's geopolitical interest in having an Arctic presence and in maintaining its status as observer country in the Arctic Council. To maintain this status, the necessary measures must be taken to facilitate and promote the involvement of Spanish researchers in the Council's different working groups;
- Support, in the scope of the OSPAR Convention, the expansion to the Arctic of the Convention on Biological Diversity agreements, and promote the implementation of environmental protection and sustainable exploitation policies in the Arctic on the basis of the precautionary principle, using the best scientific knowledge available;
- Support the creation of protected marine or terrestrial areas underpinned by the best scientific basis available at any given time, thus highlighting the importance of polar research as a global geostrategic instrument;
- Any strategic Spanish approach to the fishing industry must consider the fact that the management of fishery resources is an EU mandate, falling under the aegis of its Common Fisheries Policy. In this context, it must be taken into account that Spain, as an EU Member State, is now a member of the NEAFC, whose remit includes Arctic waters;
- The general principle guiding Spain's actions regarding fisheries is to ensure the sector's sustainability, which includes respecting the environment and combating illegal, unreported, and unregulated fishing.

