RADIALES time series: 25 years monitoring the NW Iberian shelf

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Oceanographic time series in northern Spain (RADIALES) 1990 - 2014

http://www.seriestemporales-ieo.com/
• Objective
• History
• Methods
• Funding
• The series
• Applications
• Spin-offs and alliances
• Products
Objective

“understanding and modelling the response of the marine ecosystem to the sources of temporal variability in oceanographic and planktonic components, particularly focusing in those factors and processes affecting biological production and potentially altering the ecosystem services”.

(as formulated in 1990)
History

the oldest multidisciplinary ocean observation initiative still active in Spain

- 1990. Plankton observations included
- 2007. Joint program for NW Spanish series (RADIALES)
- 2012. First multidecadal synthesis
Methods
Coastal upwelling gradient
Multi-station observatory
Multidisciplinary observations:

<table>
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<tr>
<th>Physical variables</th>
<th>Biogeochemical variables</th>
<th>Biological variables</th>
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<tr>
<td>Irradiance</td>
<td>Oxygen</td>
<td>Bacterioplankton</td>
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<tr>
<td>Temperature</td>
<td>Primary production</td>
<td>Phytoplankton</td>
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<td>Salinity</td>
<td>POM DOM</td>
<td>Zooplankton</td>
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<td>Chlorophyll-a</td>
<td>Sedimentation</td>
<td>Ichthyoplankton</td>
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Funding:
The series
Hydrography:

- **Temperature**
- **Salinity**

Nutrients:

### Temperature

- **Vigo**
- **A Coruña**
- **Cudillero**
- **Gijón**
- **Santander**

### Nitrate

- **Vigo**
- **A Coruña**
- **Cudillero**
- **Gijón**
- **Santander**
Primary production and biomass

comparative analysis of trends and cycles in chlorophyll and primary production

Zooplankton biomass

Valdés et al. (2007) Prog Oceanogr 74:98-114
Products: scientific publications

Updated: December 2013
Applications:

- Enhanced bacterioplankton activity after the ‘Prestige’ oil spill off Galicia, NW Spain
- The effect of the ‘Prestige’ oil spill on the plankton of the N–NW Spanish coast
- Personal dynamics of picoplankton in shelf waters of the southern Bay of Biscay
Spin-offs and alliances:
International Group for Marine Ecological Time Series

Analysis and synthesis of global marine ecological changes as seen through biogeochemical and plankton time series.
Ocean Observation and Global Change

Mission:

to deepen the knowledge related to the relationship between the ocean and the climate, to the ocean’s role within the Earth system as well as to the ocean’s influence on human populations.
Ocean Observation and Global Change

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<th>Research Fields</th>
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<th>Global Change: Observational, experimental and modeling approach</th>
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<td>Research Lines</td>
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<td>Pre-instrumental records: the ocean before the Anthropocene</td>
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<td>Operational oceanography</td>
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<td>Identification of Social and economic risks of global change</td>
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RADIALES: the numbers

3 oceanographic ships
5 oceanographic sections
23 sampling stations
24 scientists
25 ship crew
28 technicians & students
423 keuro/year (>60% external funds)
398 scientific publications

7 News
24 Thesis
34 Books and chapters
51 Reports
66 Posters
97 Communications
119 Articles peer review
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