

# Carmen García-Comas Rubio

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Place and date of birth: Oviedo (Spain), 30<sup>th</sup> July 1979



## SCIENTIFIC SKILLS

- Matlab programming
- Database organization and management
- Data mining
- Numerical ecology: Multidimensional statistical analysis and time series analysis
- ZooScan handling and supervised-learning automatic recognition
- Zooplankton taxonomy at genus level

## RESEARCH INTERESTS

- Zooplankton ecology and pelagic ecosystem functioning with special focus on climate-plankton coupling
- Size spectrum as synthetic index for plankton community structure and theoretical ecology
- Mediterranean pelagic ecosystems

## EXPERIENCE

**Nov./2005-Nov./2009:** Ph.D project in the framework of collaboration between LOV (CNRS,France) and SZN (Naples, Italy).  
Supervisors: Lars Stemann, Grazia Mazzocchi, Gregory Beaugrand

Climate change and copepod size distribution:  
Comparison of two coastal long-term series in the Western Mediterranean Sea

The thesis dealt with the effect of climate change on copepod Mediterranean communities. The results published in this thesis contributed to the application of community size spectrum analysis to detect ecosystem changes related to climate change. It also contributed to upgrade the ZooScan imaging device and associated softwares.

**March-September/2005:** Internship at PML (Plymouth, U.K.).  
Supervisors: Delphine Bonnet, Roger Harris

Experimental work on egg production related to female fitness of four common copepod species in the English Channel: Egg hatching rate/female condition factor.

Techniques learnt:

Carlo Erba CHN analysis, Plankton Visual Analyzer, phytoplankton culture, sampling treatment of samples from L4 station and calanoid copepod egg production experiment (Weekly handling of alive copepods and eggs).

**July-November/2004:** Professional Training at IEO (Gijón, Spain);  
Supervisor: Luis Valdés

Techniques learnt:

Microphotography and phytoplankton identification, Field plankton sampling (Radiales time series) and routine sample processing for the time series continuity.

## EDUCATION

**27<sup>th</sup> November/2009** Ph.D thesis viva to be held. Examiners: Philip Reid and Adriana Ianora

PhD courses:

- July/2006: Multidimensional exploratory ecosystem–analysis (2 weeks, Paris VI University, Villefranche sur Mer, France).
- August/2006: summer school “Climate Change Impacts on Marine Ecosystems” (2 weeks, Ankara, Turkey).
- November/2007: Scientific communication (1 week, SZN, Naples, Italy).
- January/2008: Statistics and introduction to R programming (2 weeks, SZN, Naples, Italy).
- Multidisciplinary 2 hour-lessons in a monthly basis given by renowned invited speakers to the SZN during 2007.

**2004** BSc. in Biology (Environment and Ecology), Universidad de Oviedo, Spain  
(*Final mark: 1.853*)

### Other education:

- Fluent in Italian, English and French. Spanish mother tongue
- Computing skills for a good scientific level

## FELLOWSHIPS

- 2005-2008 *Eur-Oceans PhD fellowship*; project number: WP4-SYSMS-1070
- 2005 *Leonardo da Vinci traineeship* at PML, U.K. (programme promoting working mobility in Europe)
- 2001-2002 *Socrates-Erasmus Scholarship*, “Università degli studi di Napoli Federico II”, Italy

## PUBLIC OUTREACH

### Communications:

*1<sup>st</sup> author:*

Oral presentation:

- Copepod size spectra analysis of two multi-decadal time series in the Mediterranean Western Basin. ASLO Aquatic Science Meeting 2009 (25 to 30 January 2009, Nice, France)
- Climate changes and copepod size spectra: Analysis of Point B 30-year time series. LOV Annual Seminar (15 January 2009, Nice, France)
- ZooScan applications: Data validation, time series analyses, usefulness for multi-net sampling. ZooScan Training Course (12 December 2008, Nice, France)
- Effect of three different nets on the estimates of size spectra, abundance and biovolume of mesozooplankton communities. Joint WGZE/CIESM Workshop to compare Zooplankton Ecology and Methodologies between the Mediterranean and the North Atlantic (WKZEM) (27 to 30 October 2008, Heraklion, Greece)
- Climate change and copepod size spectra: Comparison of two coastal long-term series in the western Mediterranean Sea. Eur-oceans Final Meeting (25 to 27 November 2008, Rome, Italy)
- Long-term copepod variability in the coastal Ligurian and Tyrrhenian seas (Mediterranean). 4<sup>th</sup> International Zooplankton Production Symposium (28 April to 01 May 2007, Hiroshima, Japan)

#### Poster:

- Impact of climate and anthropogenic forcing on diversity, size spectrum and abundance of functional groups of Mediterranean zooplankton. Eur-oceans kicking-off meeting (15 to 16/03/2006, Barcelona, Spain)

#### Co-author:

- 1 oral and 2 poster presentations; ASLO Aquatic Science Meeting 2009 (25 to 30 January 2009, Nice, France)
- 1 oral and 2 poster presentations; International Symposium on the “Effects of Climate Change on the World’s Oceans” (19 to 23 May 2008, Gijon, Spain)
- 1 oral presentation (international collaboration); Joint WGZE/CIESM Workshop to compare Zooplankton Ecology and Methodologies between the Mediterranean and the North Atlantic (WKZEM) (27 to 30/10/2008, Heraklion, Greece)
- 1 poster; The 38<sup>th</sup> CIESM Congress (03 to 07 April 2007, Istanbul, Turkey)

#### Short communication:

- Impact of climate and anthropogenic forcing on diversity, size spectrum and abundance of functional groups of Mediterranean zooplankton. Eur-oceans Newsletter 5, November 2006

#### Publications:

- **García-Comas, C.**, L. Stemann, F. Ibanez, M.G. Mazzocchi, M. Picheral, F. Prejger, G. Gorsky. Climate and Zooplankton coupling in the Northwest Mediterranean Sea: Re-analysis of a 30-year zooplankton time-series (ready to be submitted to Journal of Marine Systems).
- **García-Comas, C.**, L. Stemann, Ibanez F., M.G. Mazzocchi, M. Picheral, G. Gorsky. Regime shift of copepod size-spectra in the Northwestern Mediterranean Sea: A 30-year time series analysis with the ZooScan (in prep.).
- Berline L., I. Siokou-Frangou, I. Marasović, O. Vidjak, M.L. Fernández de Puellas, M.G. Mazzocchi, G. Assimakopoulou, S. Zervoudaki, S. Fonda Umani, A. Conversi, **C. García-Comas**, F. Ibanez, S. Gasparini, L. Stemann, G. Gorsky. Intercomparison of six Mediterranean time series. Progress in Oceanography (in revision).
- Mazzocchi, M., L. Dubroca, M. Ribera d’Alcalà, **C. García-Comas**, I. Di Capua. Stability and resilience in coastal copepod assemblages: the case of the Mediterranean LTER-MC. Progress in Oceanography (in revision).
- Gorsky, G., M.D. Ohman, M. Picheral, S. Gasparini, L. Stemann, J.-B. Romagnan, A. Cawood, S. Pesant, **C. García-Comas** and F. Prejger. Digital zooplankton image analysis using the ZooScan integrated system. Journal of Plankton Research (in revision).
- Vandromme P., L. Stemann, **C. García-Comas**, M. Picheral, S. Colbert, L. Berline, J.-M. Guarini and G. Gorsky. Assessing the properties of net collected and automatically classified zooplankton size spectra before their use in models or ecological. Journal of Plankton Research (in revision).

#### SUPERVISION EXPERIENCE

- Training on ZooScan and related techniques to several students and international researchers
- Co-supervision of two undergraduate projects:  
‘Effect des changements hydroclimatiques sur le zooplankton en Méditerranée nord occidentale’ by O. Dahan and ‘Intercalibration of two zooplankton nets with the ZooScan’ by Marine Gouezo.