



News from above and below the waves

CIIMAR's monthly NEWS LETTER



Editors
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All Aboard

Strategic thinking in an Associate Laboratory

Dear Friends,

On the past 15 of September, in a letter addressed to the Director of CIIMAR, Prof. João Coimbra, the President of Instituto da Conservação da Natureza e da Biodiversidade (ICNB) acknowledged and highlighted the contribution that CIIMAR has made to the national report with respect to the Plan of Action annex to the Communication "Parar a Perda da Biodiversidade até 2010- e para além". The report is now available for public consultation at:

http://cdr.eionet.europa.eu/pt/eu/bap/envtcd9ca/CPPT_Final.pdf.

This no doubt represents a very clear example of the contribution that CIIMAR provides in support of Public Policies, an essential feature of its mission.

The Editors

Project of the Month

CIIMAR research lines in action

Physiological stress of intertidal fucoids related to their biogeography: implications under new climate scenarios

PI: Francisco Arenas, Biodiversity of Aquatic Ecosystems

Identifying the physiological responses of macroalgae to the physical environment is crucial to understand their biogeography and future distributional shifts under the new climate change scenarios. Recent evidence supports that seaweed distributions are starting to be altered by global warming. In particular, the southern limits of many cold temperate Atlantic seaweeds are moving northwards.



Organism in Focus

Blackspot seabream: what makes a fish species less

attractive for the aquaculture industry

The blackspot seabream (*Pagellus bogaraveo*) is a deep-sea piscivorous fish species found mainly over sandy substrates along the European continental shelf, in the Atlantic and throughout the Mediterranean. Juveniles occur in coastal waters until they reach about 100 grams in weight, and thereafter migrate to deeper habitats, 500-900m. The high economic value, market



preferences and flesh quality has led to its overexploitation and depletion of its natural population. In Spanish and Portuguese marine areas, catches have declined from 1000 to 500 tons/year

over the past decade. There has therefore been increasing concern about the sustainability of the *P. bogaraveo* fisheries. In these countries, apart from government interested in protecting this species, there are important initiatives in the private sector regarding repopulation dynamics of *P. bogaraveo* and their aquaculture production. *P. bogaraveo* has been recently taken from the "promising list" of fish species for intensive aquaculture, for a simple reason! It is much less efficient in converting nutrients and, therefore, grow slower than closely related species, such as gilthead seabream, a successful case in the aquaculture sector. It seems that *P. bogaraveo* has a higher demand for dietary protein in favour of lipid deposition. The energy cost for protein gain in *P. bogaraveo* was estimated to be 3.8 kJ per kJ protein deposited, which was about twice as high as that found for gilthead seabream (1.7 to 1.9 kJ/kJ protein deposited). This means that less dietary protein is channeled to muscle deposition, i.e. to growth.

Rodrigo Ozório, Auxiliary Researcher, Fish Nutritional Dynamics

Open Calls Funding Opportunities

1. Seventh Framework Programme (FP7), European Commission

The European Commission's Directorate-General for Research has published a series of calls for proposals under the 'Cooperation', 'Capacities', 'People' and 'Ideas' Programmes of the FP7. For more information, please consult the European Commission site (http://cordis.europa.eu/fp7/home_en.html) and Gabinete de Promoção do 7º Programa Quadro de I&DT (www.gppq.mctes.pt).

Concerning the **Cooperation Programme**, special attention should be given to the following calls:

The Ocean of Tomorrow 2011

Call identifier: FP7-OCEAN-2011

Deadline: 18 January 2011

Information at:

http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.Cooperation_DetailsCallPage&call_id=343

Food, Agriculture and Fisheries, and Biotechnology

Call identifier: FP7-KBBE-2011-5-CP-CSA

Deadline: 25 January 2011

Information at:

http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.FP7Details_CallPage&call_id=333&act_code=KBBE&ID_ACTIVITY=2

Environment (including climate change)

Call identifier: FP7-ENV-2011

Deadline: 16 November 2010

Information at:

http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.FP7Details_CallPage&call_id=366&act_code=ENV&ID_ACTIVITY=6

2. FP7 Integrating Activities - Access to Taxonomic Facilities

SYNTHESIS funding is available to provide scientists based in European Member, Associate and Candidate States to undertake short visits to utilize the infrastructure (comprising the collections, staff expertise and analytical facilities) at one of the 16 partner institutions. It funds short-term visits (15 days average), including research costs, international travel and accommodation and a per diem contribution towards living costs.

Information at: www.synthesys.info.

Deadline: 15 October 2010

3. FP6, ERA-NET Scheme, European Commission

NET-BIOME 2010 Research Joint Call

NET-BIOME published a pre-announcement of a call on research projects in biodiversity management in support of sustainable development in the Tropical and Subtropical Outermost Regions (ORs) and Overseas Countries and Territories (OCTs) of Europe.

Prospective applicants should fill a "Manifestation of Interest" until 15th of November and send it to the Portuguese Contact Point (Cláudia Delgado, claudiadelgado.netbiome@gmail.com) for eventual clustering purposes. Information at: www.netbiome.org.

Susana Moreira

This month at... Events in the calendar

- ▶ **1 to 30** Exhibition "Litoral de Vila do Conde" - 9-19 h. CIIMAR Hall
- ▶ **1 to 30** Exhibition "Por mares já muito navegados", 10-18 h CMIA of Matosinhos
- ▶ **1 to 30** Exhibition "Vila do Conde NATURALmente", 10-18 h, CMIA of Vila do Conde
- ▶ **1** Seminar "A importância da genética na conservação da biodiversidade" Dr. Agostinho Antunes, 21 h, CMIA of Vila do Conde
- ▶ **1** Water National Day
- ▶ **11** Oceanus Seminar. Jonathan Wilson, "Stomach loss in fishes. Insights from the gastric proton pump genes", 14:30, CIIMAR Auditorium
- ▶ **5 to 8** Aquaculture Europe 2010, Centro de Congressos da Alfândega, Porto
- ▶ **18** Dia Mundial da Monitorização da Água
- ▶ **18** Neptune Seminar. Filipa Gonçalves, "Effects of ammonia on bacterial LPS induction of the acute phase response in *Danio rerio*", 11:30, CIIMAR Auditorium
- ▶ **18 to 20** 12º Encontro Nacional de Ecologia, Auditório da Biblioteca Municipal Almeida Garret, Porto
- ▶ **25** Oceanus Seminar. Filipe Castro: "My name is Bo(u)nd: double bound", 1430, CIIMAR Auditorium

Paper of the month CIIMAR publishes

Modeling mussel growth in ecosystems with low suspended matter loads- Duarte et al., 2010, J. Sea Research

Over the last decades a large number of bivalve growth models were described in the literature with most emphasis on cultivated species with important economic value. These models describe the rates of energy absorption and utilization as a function of environmental conditions. Some of the most important issues in bivalve modeling are water pumping, filtration, pre-ingestive rejection/pseudofaeces production and ingestion of living and non-living organic and inorganic matter. According to some authors, bivalve suspension-feeders may selectively ingest and/or digest different food items whilst making adjustments to maximize the utilization of chlorophyll rich particles. In clear water ecosystems such as the Galician Rias (total particulate matter (TPM) < 3 mg l⁻¹), where most of the available seston is phytoplankton, selective processes may be less important than in turbid waters with high TPM loads. The main objectives of this work were to develop, implement and calibrate an Individual Based Model of mussel growth, configured and parameterized for the environmental conditions of ecosystems with low suspended matter loads such as the Galician Rias. Model runs were made for a large number of individual mussels, each with a random parameter set, selected among possible parameter ranges reported in the literature, allowing a quick model calibration and an evaluation of those parameters explaining most of the variance in predicted mussel growth. Obtained results provide a useful feedback for upcoming experimental work where efforts should be concentrated on accurate estimates of these more influential parameters to improve model results

(IN) FORMATION BOGA

BOGA will start, in this edition, a sequence of "Species (IN) FORMATION" where we will talk about the main aquatic species used in our facilities.

ZEBRAFISH (*Danio rerio*)

The Zebrafish is one of the most used fish species in research, which has been increasing in use considerably in the past decade (2000 - 742 papers; 2009 - 3178 papers) (search "zebrafish" in Science Direct). You can find work with this species in many different and diverse scientific fields: developmental biology, oncology, regenerative medicine, age research, genetics, reproductive studies, toxicology, neurobiology, environmental sciences, embryology, immunology, physiology, amongst others. Zebrafish are a tropical, freshwater vertebrate that has several characteristics for being such a good research model:

- ▶ Fully-sequenced genetic code
- ▶ Easy to maintain and reproduce (lay eggs readily and in large amounts)
- ▶ Eggs are externally fertilised (easy to collect)
- ▶ Eggs are completely transparent (allow to study embryo development)
- ▶ Embryos can be genetically manipulated
- ▶ Fast embryo development (4-5 days to become swimming larvae) and to mature (3 mo to sexual maturity).

This species is already used by several laboratories in CIIMAR in different research areas. Considering this, BOGA is studying the feasibility of a Zebrafish Nursery.

(For more information on this topic visit <http://zfin.org/> and <http://www.fishforscience.com/>)

Together we will have more and better research in BOGA-CIIMAR!

Hugo Santos

