

Time schedule

The time schedule gives an overview of the talk sequence. In general, talks should be around 25min and are followed by a discussion of 15min. Language is ENGLISH with exemption of presenting student, but at least in the discussion part will be in ENGLISH

9:00 Welcome and Introduction (Sven **Thatje**, Olaf Heilmayer, Marcelo Oliva)

Workpackage 1 –chaired by M. Oliva

9:15 Short introduction in WP 1

9:20 **Riascos JM** - Studies on the biology and ecology of *Concholepas concholepas* and *Mesodesma donacium* related to ENSO events in Northern Chile: Results 2005-2006

10:00 **Villegas MJ**, J Laudien, W Sielfeld & W Arntz - Species composition, abundance and spatial distribution of rock fishes in relation to the habitat structure of north Chilean kelp beds

10:40 – 11:00 *Coffee Break*

11:00 Godoy J. & **MJ Villegas** - Fauna associated in *Macrocystis integrifolia* Bory 1826 and *Lessonia trabeculata* Villouta & Santelices 1986 in relation to the macroalgal morphology.

11:20 **Pacheco A**, J Laudien, O Heilmayer & M Oliva - Colonization and settlement success in rocky and soft bottom subtidal habitats of northern Chile

12:00 – 13:15 *Lunch break*

Workpackage 3 – chaired by S. Thatje

13:15 Short introduction in WP 3

13:20 **Fischer S** - Reproductive biology of brachyuran crabs along a temperature gradient, with focus on maternal investment in biochemical composition of embryos

14:00 **Rojo M** - Physiological response of *Argopecten purpuratus* and *Concholepas concholepas*.

14:40 – 15:00 *Coffee Break*

15:00 **Ashton T** – Presentation of new laboratory facilities and the new El Niño lab at UA

15:40 Summary and final discussion

16:40 End of Seminar

16:40 – 20:00 Individual tours on the campus, visits to the new El Niño lab, ...

20:00 Asado on the “Bellvue terraces” (Meat, sausages and beer are provided, please bring beverages and music or vegetarian food if you don't eat meat)

Abstracts

Reproductive biology of brachyuran crabs along a temperature gradient, with focus on maternal investment in biochemical composition of embryos

Sönke **Fischer**, Alfred Wegener Institute for Polar and Marine Research Bremerhaven, Germany

Preliminary results on the reproductive cycle (e.g. duration of embryo development, interval between successive egg-batches) of the brachyuran crab *Cancer setosus*, which were held in through-flow aquaria at ambient temperature in Antofagasta will be discussed. Embryos of this crab were sampled in 4 successive developmental stages from blastula until hatching of zoea-larvae to observe changes in size and biochemical composition (CHN, lipids, proteins, fatty acids) throughout development. Future experiments and sampling on *Cancer setosus*, *Homalaspis plana* and *Taliepus marginatus* will primarily focus on the changes of the female crabs investment in offspring along a temperature gradient by sampling in different locations throughout the species distributional range and conducting experiments in temperature controlled aquaria-systems.

Fauna associated in *Macrocystis integrifolia* Bory 1826 and *Lessonia trabeculata* Villouta & Santelices 1986 in relation to macroalgal morphology.

Jadhiel **Godoy** and Mario J. **Villegas**, Departamento de Ciencias del Mar, Universidad Arturo Prat, Chile

Macrocystis integrifolia and *Lessonia trabeculata* are ecological and economical important resources in Chile. These species form vast kelp beds that provide habitat, shelter and food to many marine species. Various studies in north-central Chile have documented that the fauna associated to the holdfast showed a high biodiversity. Due to the morphological differences in the holdfast of *M. integrifolia* and *L. trabeculata*, we expected differences in the fauna associated between these two species. In "I Region" of Chile we will be examining this hypothesis to understand the association between the macroinvertebrate fauna and the morphology of the macroalgal species. This presentation includes an advance of the composition of fauna associated.

Colonization and settlement success in rocky and soft bottom subtidal habitats of northern Chile

Aldo Pacheco¹, Jürgen **Laudien**², Olaf **Heilmayer**² and Marcelo **Oliva**¹, ¹Instituto de Investigaciones Oceanológicas, Universidad de Antofagasta; ²Alfred Wegener Institute for Polar and Marine Research, Germany

How the benthic communities develop throughout the time? To answer this question has important relevance in the Humboldt current ecosystem, due that El Niño event modifies the community's structure thus important commercial species availability. In this presentation I show the design of two colonization experiments each one for hard and soft bottom habitats, and the sampling method is also presented. With the succession concept as a frame, data of maturity soft bottom community of periodical monitoring in Punta Chacaya is also partially showed. To evaluate the hard bottom maturity community a sampling program is planned and also showed. A colonization experiment with *Anthotoe chilensis*, which is dominant specie at the hard bottom subtidal is presented.

Studies on the biology and ecology of *Concholepas concholepas* and *Mesodesma donacium* related to ENSO events in Northern Chile: Results 2005-2006

José M. Riascos V., Instituto de Investigaciones Oceanológicas, Universidad de Antofagasta

El Niño (EN) significantly influences marine resources and their exploitation in the Humboldt Current ecosystem. *Concholepas concholepas* and *Mesodesma donacium* stands between the most important mollusks species for shellfisheries in Chile and Peru and they are negatively affected by EN. From an analysis of historical data, relevant aspects of the life history of these species were chosen to study the mechanisms underlying those effects. The potential of staining chemicals as shell growth markers for *C. concholepas* and *M. donacium* was investigated. These results were submitted to an international scientific meeting and the first paper is being written. The short term shell growth of *C. concholepas* and *M. donacium* is being studied by tagging-recapture experiments, using calcein as tagging procedure, in Hornitos, Chacaya and San Jorge bay, Chile. Monthly samples of *C. concholepas* and *M. donacium* are being taken from May 2005 to study the reproductive cycle and the seasonal variability in biochemical composition. The results on growth, reproduction and biochemical composition will be linked with environmental parameters to assess

the response of these factors through natural climate variability. Besides, as a high level of infestation of the symbiotic polychaete *Polydora biocipitalis* on *M. donacium* has been detected, the temporal pattern of the infestation and the effects on growth and body condition is being studied from May 2005. Preliminary results were submitted to two scientific meetings and a second paper is being prepared. Finally, the effect of different levels of temperature and salinity on growth and body condition will be tested through a Central Composite Design experiment in order to investigate the mechanisms underlying the observed downfalls of *M. donacium* populations during EN events.

Physiological response of *Argopecten purpuratus* and *Concholepas concholepas*.

Manolo **Rojo**, Institute Universidad de Antofagasta Instituto de Investigaciones Oceanológicas

I try evaluated the physiological responses of *Argopecten purpuratus* and *Concholepas concholepas* in different live stage, to understand the response level of this species to changes in temperature during ENSO condition.

This work include studies about thermal tolerance in different live stage in base to respiratory rate and change in CHN and enzymatic activities to evaluated a metabolic adjust of this species to live in a dynamic environmental.

In the last months I development initial activities to evaluate number of larves for *Argopecten purpuratus* necessary lo look a oxygen consumptions. During the next day start with acclimation process to 3 different size classes of *Argopecten purpuratus* and development measured in intermittent system.

Species composition, abundance and spatial distribution of rock fishes in relation to the habitat structure of north Chilean kelp beds

Mario J. **Villegas**¹, Jürgen **Laudien**², Walter **Sielfeld**¹, Wolf **Arntz**²; ¹Departamento de Ciencias del Mar, Universidad Arturo Prat, Chile. ²Alfred Wegener Institute for Polar and Marine Reseach, Germany

The structure of rock subtidal communities of northern Chile is controlled by local upwelling processes variable during ENSO. Alternative habitats are kelp beds of *Lessonia trabeculata*, *Macrocystis integrifolia* and barren ground. They offer different microhabitat structures, which may be reflected in unequally composed fish assemblages. Thus, this study aims to (i) describe whether the species composition, abundance, and spatial distribution of rock fishes are related to habitat structure

variations, and (ii) examines trophic relations of rock fishes from *M. integrifolia* beds in comparison to *L. trabeculata* habitats. This presentation includes preliminary results discussed integrative in the frame of CENSOR objectives.