

Observation techniques and experimental design FREE

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Issue Section: [Session discussion summary](#)

Discussion summary: session 1

This session was the first of the Symposium, for an obvious reason: the study of behavioural patterns in open aquatic ecosystems depends strongly on the availability of sophisticated technology allowing observation and recording in an opaque and even hostile medium. Dr Penny Allen's opening lecture on "Bringing Oceans into Focus: The Challenges of Filming Fish Behaviour for Wildlife Documentaries" was followed by 10 oral communications and 17 posters which dealt with technical improvement (9 presentations), examples of application (11 presentations), and experimental design in the open field (7 presentations). A wide range of temporal and spatial scales was considered. The spatial range of observations varied from the position of individual small fish in a 3-D space, to groups of fish inside a net or a school, and to behavioural patterns of pelagic fish (tunas) in the whole ocean; the temporal scales ranged from seconds to annual rhythms. One new and capital result was that, in most of the research, technology now allows detailed recordings of dynamic 3-D behavioural patterns in tanks, in the open field, and in fishing gears. Some indirect indexes of behavioural patterns were also presented, such as the use of otoliths to record behavioural activities.

The first conclusion drawn in the discussion was that observational and recording techniques have improved dramatically in recent years, with the range of observation going from individual behaviour to the behaviour of the whole population, and from short to long time periods, with capacities to record and analyse huge amounts of data. The papers, posters, and the discussion highlighted the existence of a broad range of technologies/methods for behaviour observations. The most important and widely used tools belong to four types: (i) hydroacoustics in two and three dimensions for static and dynamic

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