Chytridiomycosis caused by Batrachochytrium dendrobatidis in Sardinia (Italy): The discovery, epidemiological study and current assessment of the role of the pathology in endemic amphibians communities decline

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In august 2005 our team detected infection with Bd in southern Sardinia on some adult specimen of sardinian newt *Euproctus platycephalus*, an endemic and threatened pecies. With Zoological Society of London partnering we started to map infection range all over Sardinia and describe how infection interacts with other native species. Bd infection can then be confirmed in two ways: first, by histology (sectioning skin and looking for the presence of chytrid zoosporangia within the skin) and second, by swabbing amphibians thought to be infected and testing for the presence of chytrid DNA using real- time PCR, that also allows an estimate of infection load. At the now we can report that Bd sensivity varies significantly across the species and the species range; Bd afflicts three endemic species Sardinian newt *Euproctus platycephalus*, Sardinian painted frog Discoglossus sardus and Sardinian tree frog Hyla sarda and that infection hot spot is located in Limbara Mountain Complex in the North of the island. Our analysis in the same area confirmed that some mass die off of Sardinian painted frog were due to chytridiomycosis. In order to better know the pathogen dynamics in Euproctus platycephalus, our flag species, we have developed the approaches to investigate age structure and the sensivity at different years. Last, we have developed the molecular tools to investigate gene flow and movement patterns and have shown that source/sink dynamics vary strongly across the species range and we are currently mapping the expansion of some alien species in northern Sardinia, such as green frogs Pelophylax sp. and red swamp crayfish Procambarus clarki that are both known as chytrid vectors and represent a serious thread for endemic amphibians communities also for direct predation and habitat resources competition.

Speaker Biography

Stefano Bovero is a independent researcher at Zirichiltaggi Sardinia Wildlife Conservation NGO and his expertise include aspects of the natural history and conservation of amphibians and freshwater fish in alpine and in mediterranean areas. Since 1994 he devotes a particular attention to the endangered Sardinian newt Euproctus platycephalus. Together with his team he analyzed the distribution and the ecology of this species with attentions for the conservations aspects and the identification of possible cause of populations decline. Starting to 2007 he also focused the attention on the serious problem of chytridiomycosis afflicting endemic amphibians species in Sardinia and his group is currently involved in a long research program in collaboration with the Zoological Society of London.

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