Biomathematics seminar
30 March 2011

The ecology of exploited fish stocks: Consequences of technological innovation on stock quality and persistence

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Fishery data gathered in the last decades show that age and size at maturation significantly dropped in many exploited fish stocks. Early maturation at smaller sizes results in smaller adult sizes and a lower quality of the catches. Moreover, this trend warns for an incoming danger, as the collapse of the stock followed in some of the cases. Since age and size at maturation has been shown to be largely genetically determined, a few studies offered long-term evolutionary explanations (genetic mutations followed by natural selection), where exploitation works as a selective pressure. However, while the last decades have been a short time scale for long-term biological evolution, they have been long enough for a significant evolution of the fishing technologies. This might have reshaped the genetic composition of the exploited stocks and determined the observed trend. Here we discuss this alternative hypothesis, with the help of a genetically explicit, deterministic model for the ecology of exploited fish stocks.