

Implicit Cooperation? The Northeast Atlantic Mackerel Fishery

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This paper presents a quarterly, game-theoretic model of the Northeast Atlantic mackerel to study the fishing strategies of five players, the EU, Norway, the Faeroe Islands, Iceland, and the international fishery on the high seas. Data on the spatial distribution of fish catches 1977-2011 are used to model changes in the distribution of the mackerel stock. The Nash equilibrium solutions predict a severe decimation of the stock through overfishing, either by parties (Iceland, the Faeroe Islands) that refuse to cooperate, or by a general absence of cooperation. There is a wide discrepancy between this prediction and reality, as the stock seems only moderately overexploited or not at all, despite non-cooperation by Iceland and the Faeroe Islands. It is conjectured that these parties, and others, may have a degree of implicit cooperation that falls somewhat short of full cooperation but avoids the extreme destruction of the Nash equilibrium. This implicit cooperation can be seen as being maintained by a mutually assured destruction of the fisheries of all parties in case they go to the logical extremes of non-cooperation.



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