The recent population expansion of boarfish, Capros aper (Linnaeus, 1758): Interactions of climate, growth and recruitment

The objectives of this study were to evaluate whether temperature changes in the Northeast Atlantic influence the growth and recruitment dynamics of boarfish, Capros aper. Two geographically separate areas were examined, 'north' at the northern distribution range west of Ireland and 'south' on the main fishing grounds south of Ireland. No significant differences in length-at-age were observed between the two areas. Interannual otolith growth patterns were similar between the two areas with distinct years of faster and slower growth. In the 'north', no significant relationship between adult growth and temperature was observed, while growth in the 'south' was positively related to temperature up to approximately 16°C; growth rates were suppressed in the years with temperatures above that. Recruitment showed a positive correlation with adult growth the previous year for the Spanish recruitment index only, suggesting spatial connectivity between the Celtic Sea and the Bay of Biscay. The age distributions were similar in both areas and despite the boarfish's longevity of >30 years, are dominated by the age classes corresponding to the years with high recruitment, suggesting that increased recruitment is responsible for the observed stock expansion.