

Influence of Hydrocarbons Exposure on Survival, Growth and Condition of Juvenile Flatfish: A Mesocosm Experiment

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KEYWORDS PAHs. Solea solea. Nursery. Recruitment. Mortality. Fitness

ABSTRACT Juveniles of numerous commercial marine flatfish species use coastal and estuarine habitats as nurseries. Hence, they are likely to be exposed to a number of anthropogenic stressors such as accidental and chronic exposure to chemical contaminants. Little is known about their response to such pollutants at the individual level and about the consequences on their population dynamics. Mesocosm experiments were conducted to determine whether short (24 h) but high exposure to petroleum hydrocarbons (1/1000 v: v water: fuel), similar to what happened after an oil spill on coastal areas, affects survival and biological (growth, body condition and lipid reserve) performances of juvenile common sole, which live on near shore and estuarine nursery grounds. Results demonstrated that this type of exposure significantly reduce survival, growth (size, recent otolith increment and body condition), and especially energy storage (triacylglycerol to free sterol ratio) of the juvenile fish on the medium-term (three months after the exposure). These medium-term consequences affect future recruitment of this long-lived species.