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A study of discard survival in set-net fisheries

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BACKGROUND
- The Common Fisheries Policy of the European Union has enacted a landing obligation, prohibiting the discard of quota regulated fish species.
- The regulation includes the possibility of exemption from landing obligations for "species for which scientific evidence demonstrates high survival rates".
- European plaice (Pleuronectes platessa) is a key species for the gill-netsters in the North Sea, Skagerrak, and Kattegat.
- Discard survival in plaice have been assessed in fish from beam and otter trawls but data on fish from set-nets (trammel and gillnets) is inadequate.

OBJECTIVES
- Determine post-capture survival rate in place from commercial gill-nets fishing with trammel nets.
- Identify catch-related physical, physiological, and environmental factors associated with reduced survival.

METHODS
- Fish were collected over 7 days between November 2017 and February 2018.
- Fish were transported to shore in 300L tanks with oxygenated seawater within 2-3 hours of capture.
- Fish were transferred to livewells and monitored for post-capture survival for 4-10 days.
- Catch-related injuries and reflex impairments were assessed immediately after capture and at the end of the observation periods.

RESULTS
- Post-capture survival rate was 100% (i.e., all fish were alive at the end of the observation periods).
- Less than 10% of fish exhibited reflex impairments after capture and at the end of the observation periods.
- Approximately 10% of fish showed recovery of minor capture-related injuries at the end of the observation periods.

CONCLUSION
- The 100% post-capture survival rate may be of relevance to policymakers regarding future claims made under the "high survival rates" exemptions rule in the Common Fisheries Policy of the European Union.
- The 100% survival rate is likely driven by one or more of the following experimental factors:
  1. Short duration of air exposure.
  2. Minor physical injuries.
  3. Low temperatures.
- Future studies during summer can provide information about the degree to which the high survival observed here is driven primarily by technical factors (air exposure and injuries), or environmental factors (temperature).

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