Tracking the downstream migration of an aquatic invader: preliminary results on the spatio-temporal movement behaviour of the Chinese mitten crab in the Scheldt Estuary, Belgium

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The Chinese mitten crab (*Eriocheir sinensis*) is an aquatic invasive species in western Europe with a catadromous life cycle. In Flanders (Belgium), management measures have been put into place to catch and remove the crabs during their migrations. However, thorough spatio-temporal knowledge on species behaviour during their migration within estuaries is still lacking, which hampers focused and effective management on a wider spatial scale.

In this study we investigated the timing and routes of the downstream migration of adult Chinese mitten crabs in the Scheldt Estuary with the use of acoustic transmitters. After perfecting the tagging technique in laboratory conditions, eight female crabs were tagged and released in October 2020 on different locations within upper tributaries of the estuary. To the best of our knowledge, this is the first time that a decapod migration was monitored over such a large distance (~115 km).

Valuable data were retrieved from seven of the eight crabs and enabled us to calculate parameters such as migration speed, time spent in certain areas and the exact route. Additionally, using this technique for the first time in this context, paves the way for more elaborate studies using acoustic telemetry to gain insight in the spatio-temporal movement behaviour of aquatic invasive species.

Keywords: Crustacea; Decapod; Invasive species; Acoustic telemetry; Migration; Estuary