

Smart Control of Invasive Blue Crab

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The Atlantic blue crab *Callinectes sapidus* is invasive in southern European waters.



The blue Atlantic crab, *Callinectes sapidus*, is a decapod crustacean of the *Portunidae* family, native to the western coast of the Atlantic Ocean, from Maine to the Río de la Plata.

The presence of this species in the Mediterranean has gradually increased since its accidental introduction around 1900, representing a possible threat to its biological diversity.

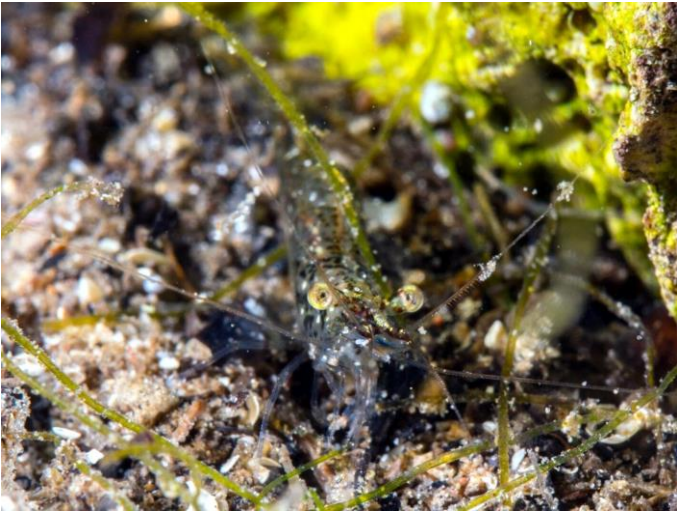
Its detection in the Spanish coasts has occurred much later than the first records in Greece and Italy, with a first record in the Delta del Ebro in 2012.

Its occurrence, abundance, and ecological impact in the region are currently being determined.

The Albufera of Valencia is a freshwater coastal lagoon in the eastern coast of Spain, which is connected to the sea by three narrow channels. The Albufera of Valencia is a protected area under Spanish regulations, having the status of Natural Park.



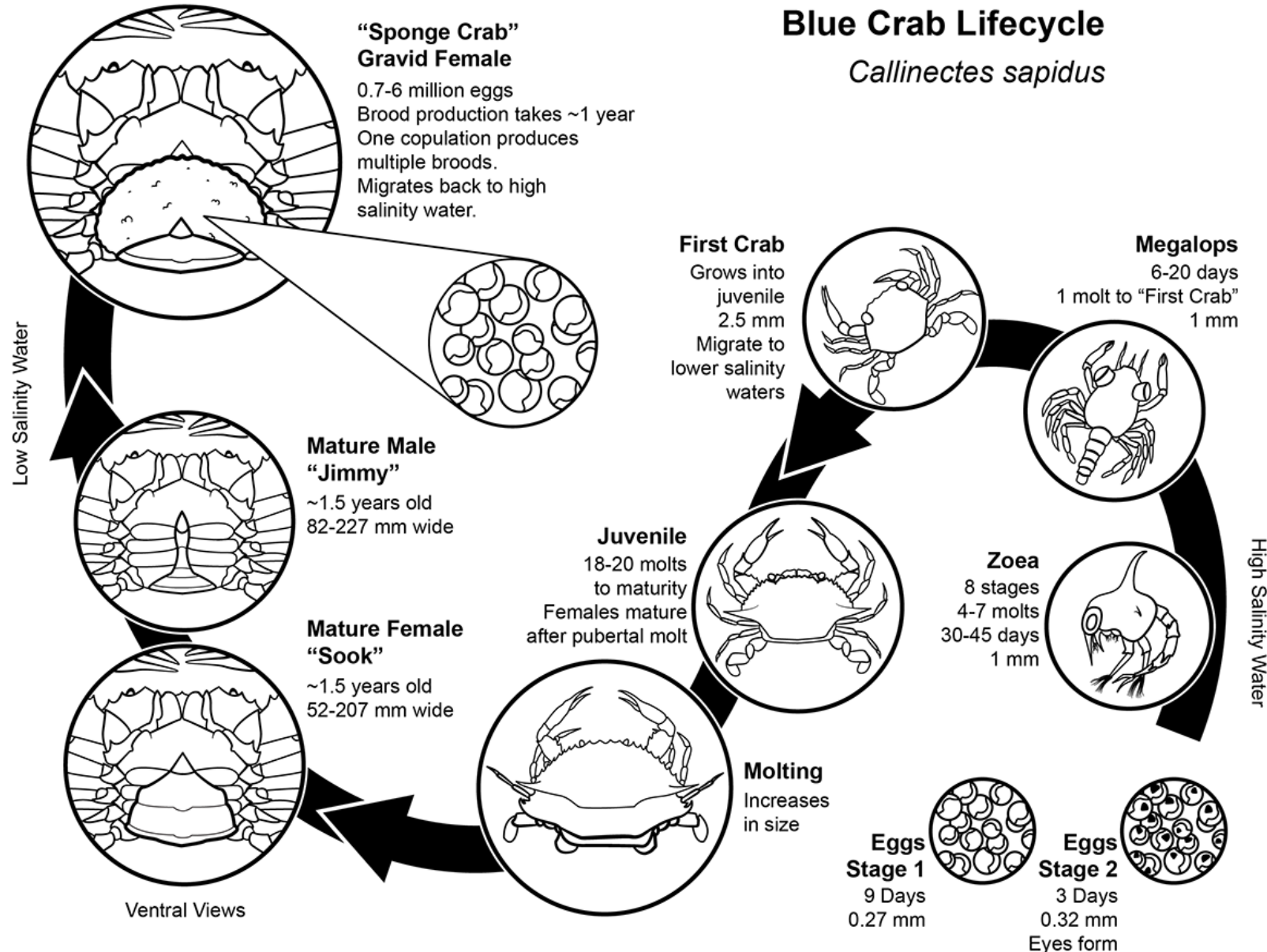
The blue crab causes ecological and economic damage in the invaded areas



There are several endemism, some of them under heavy protection status, that might be affected by the presence of *Callinectes sapidus* in the *Albufera of Valencia*. This includes natantia decapods, unionidae clams and small fishes. It also causes severe damage to fishing gear set to capture common eel (*Anguilla anguilla*).



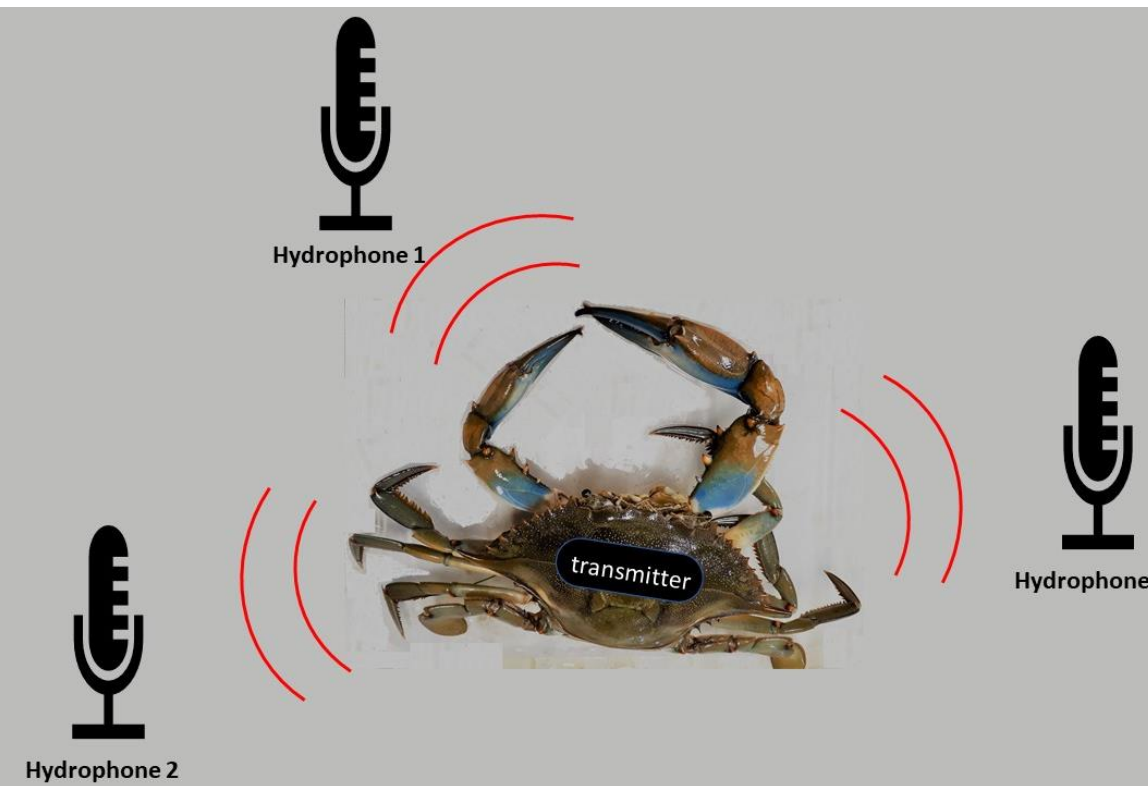
The life cycle in its native distribution area is well known but, how is it changed in the Mediterranean?



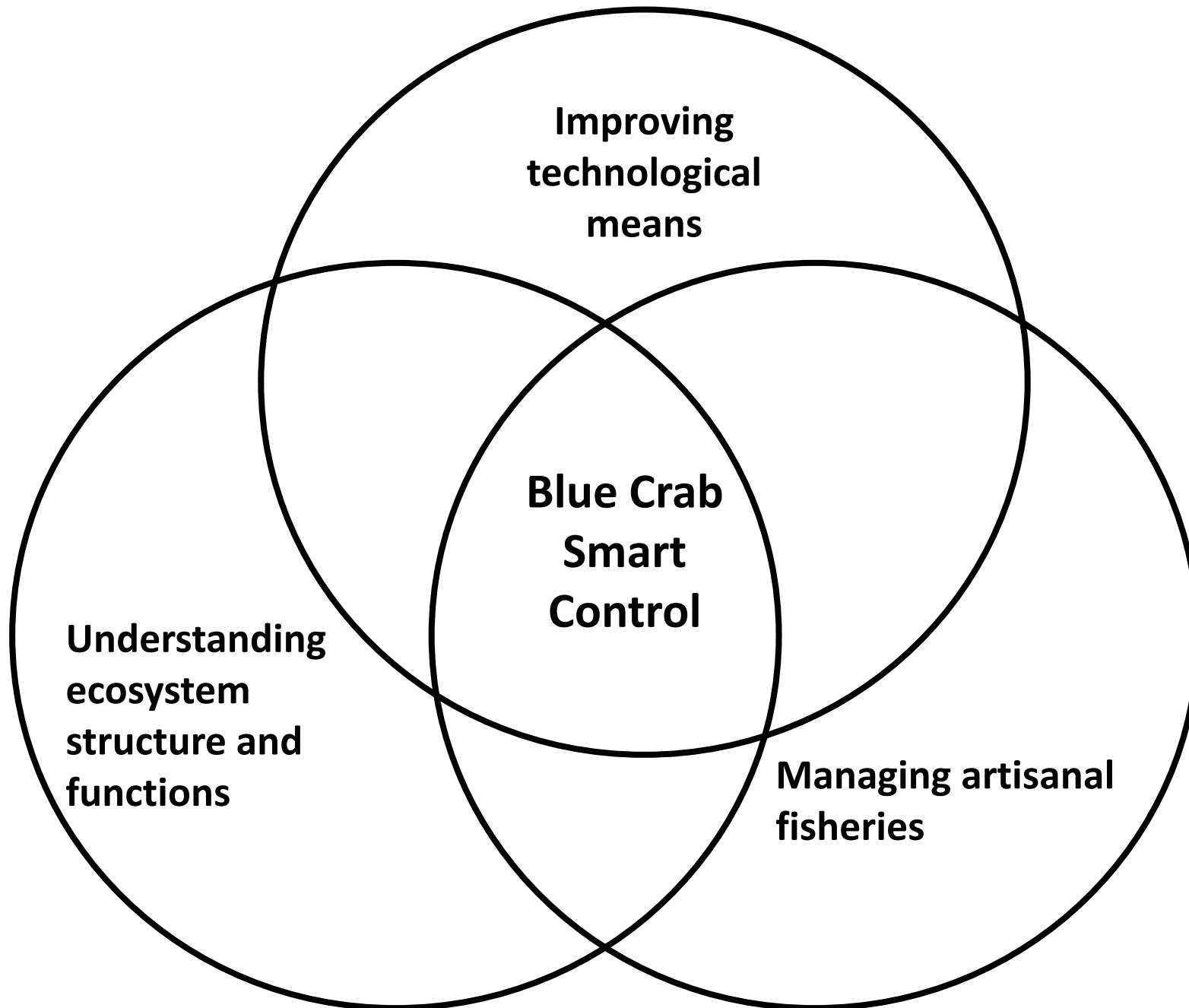
Better knowledge to improve the catches

An integrated scenario is proposed to manage it as an invasive species and a fishery resource.

Using ultrasonic telemetry we can determine the migration pattern in the Albufera of Valencia, and this provides an excellent opportunity to capture them. This species' landings are increasing year after year, which encourages us to take action immediately. This crab might be of use for alimentary purposes, but also as a valuable source of chitin.



An integrated scenario is proposed to manage it as an invasive species and a fishery resource.



The invader's impact could be reduced and converted into services of coastal systems.

Mitigation costs may ultimately be transformed into profits for local populations.

The ongoing invasion by the blue crab and other portunids provides an opportunity to combine the development of successful mitigation and control policies with the exploitation and marketing of **shellfish** products whose economic value is already acknowledged outside Europe. Thus, management and control costs in invaded habitats may ultimately yield profits for local populations, while the effects of the invader may be greatly reduced, even enhancing the goods and services provided by **coastal ecosystems**.