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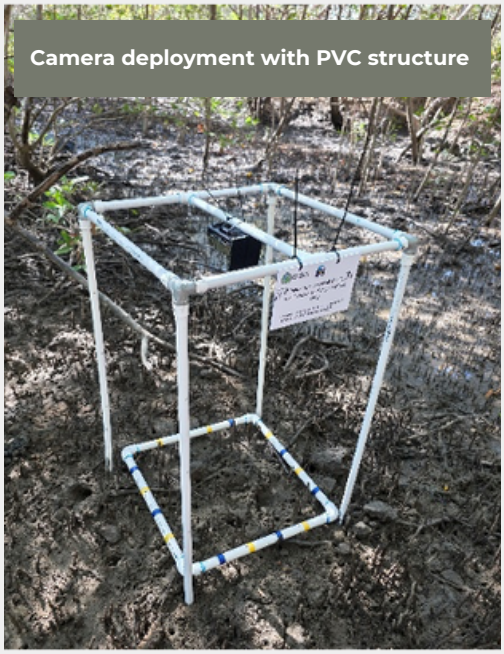
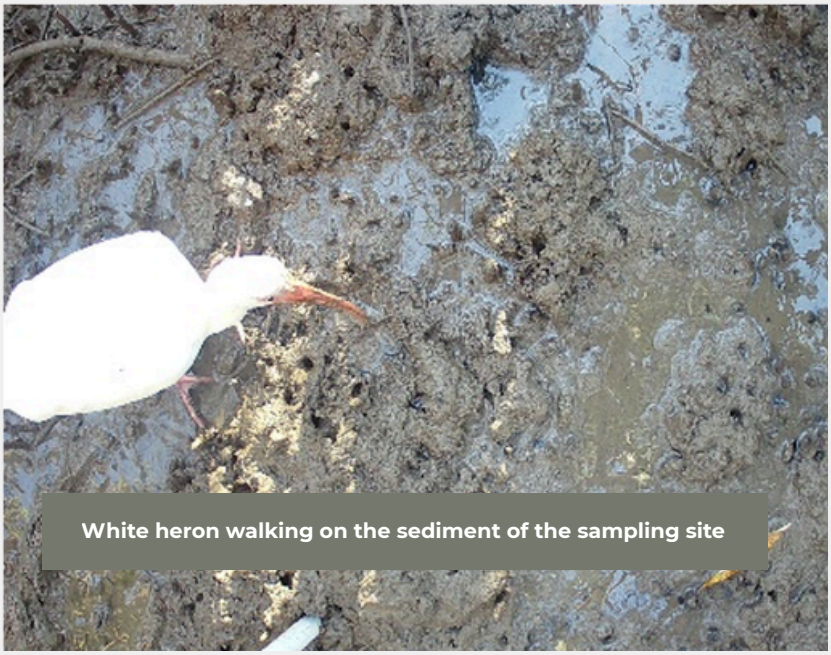
COSTA RICA

Costa Rica is a hub partner in the GLOW project, contributing to the monitoring of fauna associated with mangrove ecosystems. In March 2026, the Costa Rica team deployed nine Ceyomur CY95 camera traps in the Punta Flor mangrove on Chira Island. The survey design included three different mangrove conditions: a reference forest, a restoration project area, and a degraded area. Three cameras were placed in each environment and programmed to take one photograph every 30 seconds over a 48-hour sampling period.



Camera deployment with PVC structure



White heron walking on the sediment of the sampling site

The resulting images are now being filtered and analysed to support the quantification and identification of crabs as bioindicators of mangrove ecosystem condition. To date, individuals from the families Ocypodidae and Grapsidae have been identified. These early observations contribute to GLOW's broader aim of using standardised monitoring methods to compare biodiversity and ecosystem function across different mangrove contexts. The Costa Rica site is especially valuable because it allows the team to examine how crab communities may differ across reference, restored, and degraded habitats.

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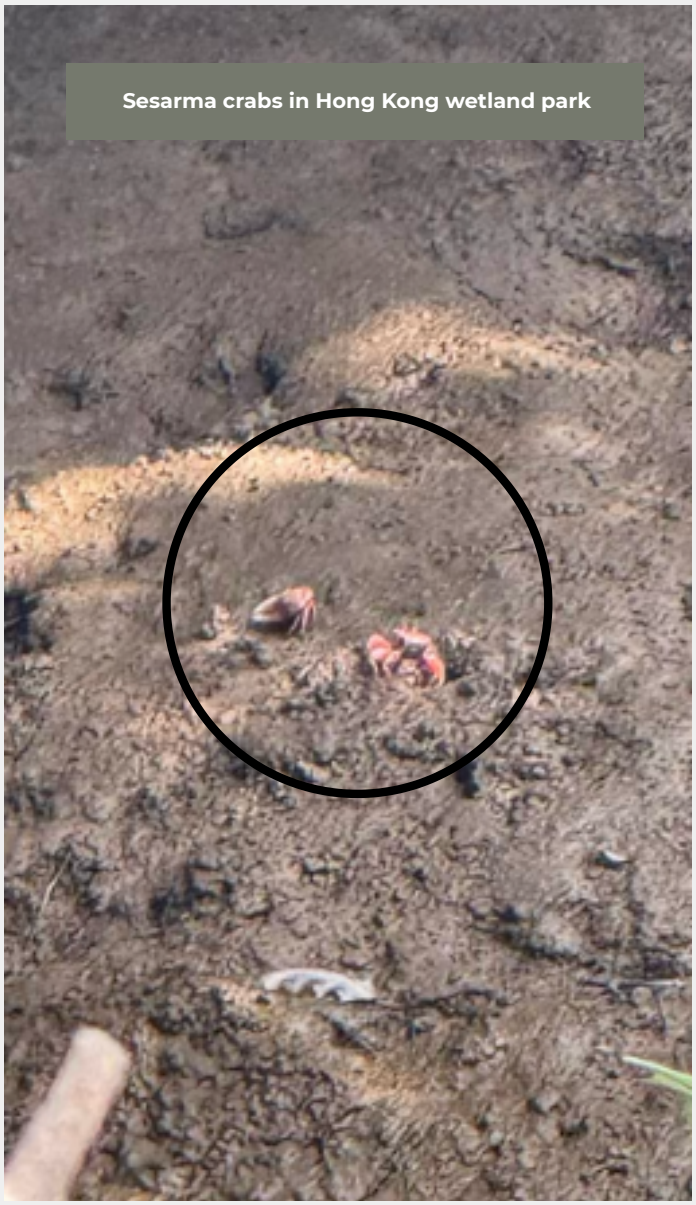
HONG KONG

The GLOW team in Hong Kong, led by Jinfeng Zhou, Yi Bao, and Yile Dai from the World Academy of Sustainable Development Limited, has been conducting pilot camera-trap monitoring at Hong Kong Wetland Park and surrounding mangrove sites. Their early observations have revealed several interesting crab behaviours, highlighting the value of continuous camera-based monitoring for understanding activity patterns that are difficult to observe through short field visits alone.

During the pilot study, some crabs were recorded digging new burrows at night, while others frequently entered neighbouring burrows rather than returning to their own. These observations may point to more complex social and spatial dynamics within mangrove crab communities. Larger crabs were mostly active at night, while overall crab activity increased around high tide, with many individuals visible on the mudflat surface before and after tidal peaks.

The team also observed a high density of juvenile crabs, although their small size makes them difficult to capture clearly in photographs. In addition to crabs, mudskippers, particularly Boleophthalmus pectinirostris, were identified as a promising second indicator species because they are easy to detect, active around tidal shifts, and useful as indicators of intertidal habitat health.



Sesarma crabs in Hong Kong wetland park

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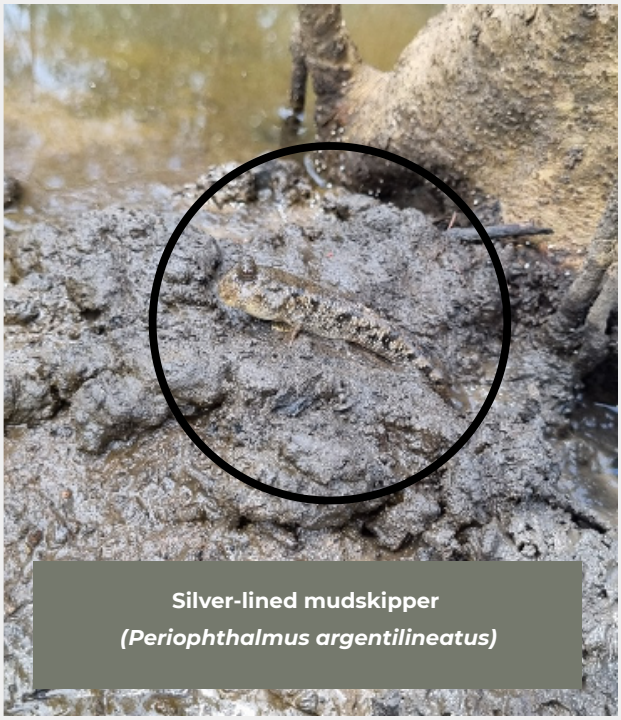
SOUTH AFRICA

In South Africa, GLOW surveys were conducted across seven estuaries along the KwaZulu-Natal and Eastern Cape coastline. These surveys produced several exciting biodiversity observations and demonstrated the value of non-invasive monitoring methods for documenting mangrove-associated fauna across different estuarine systems.

One of the key highlights was the rediscovery of the fiddler crab Cranuca inversa in Durban Bay. This species had not been recorded in the region since Kingsley's note in 1880, making the observation a particularly significant contribution to local mangrove biodiversity knowledge. Alongside target crab species, the camera systems also captured a range of non-target organisms, including the Mangrove Whelk (Terebralia palustris) and the silver-lined mudskipper (Periophthalmus argentilineatus). These records provide a broader snapshot of the species using and moving through mangrove habitats.

***Cranuca inversa* (male)**

The South African team also deployed AudioMoth recorders to document acoustic activity within these systems. This adds another layer to the monitoring approach by allowing researchers to detect species presence and ecosystem activity through sound. Together, the camera and acoustic observations show how GLOW's methods can generate rich biodiversity insights while minimising disturbance to sensitive mangrove environments.



Silver-lined mudskipper
(Periophthalmus argentilineatus)

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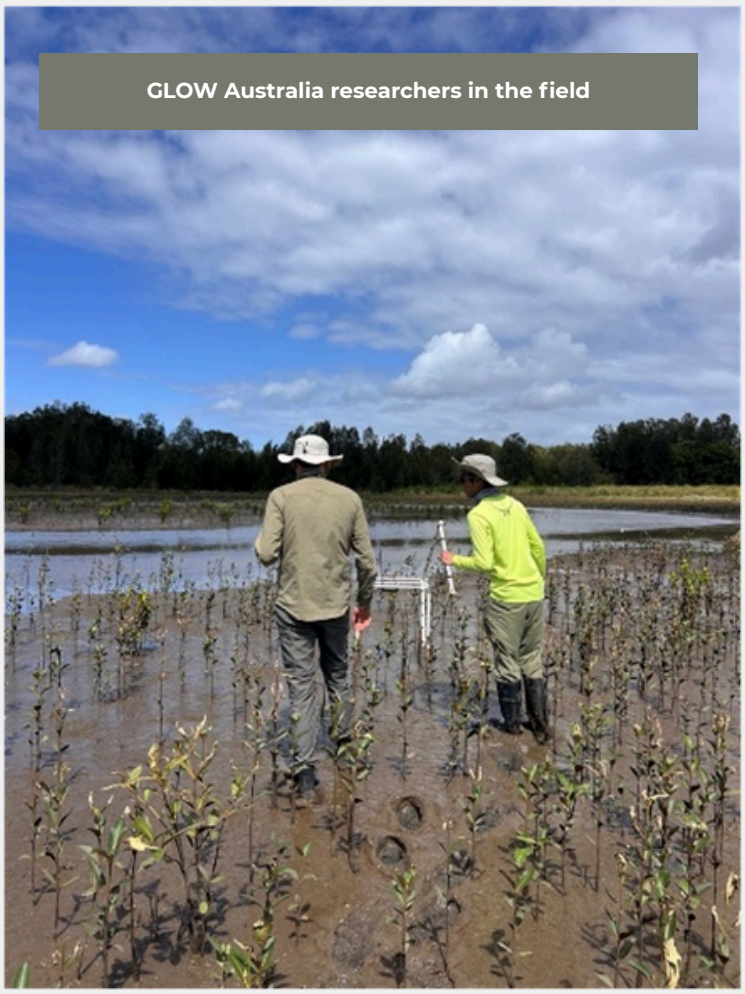
AUSTRALIA

The GLOW team in Australia has been actively monitoring crabs and fish communities in the mangroves on regular field trips, comparing restored versus healthy reference sites. These surveys are helping the team build a stronger understanding of how crab abundance, behaviour, and community patterns differ across mangrove conditions, and how restoration sites may be recovering over time.

Camera-based monitoring has captured detailed behavioural observations, including crabs carrying leaves into their burrows. These small but important behaviours can provide insights into how crabs interact with mangrove vegetation, sediment, and organic matter. The team has also observed differences in crab abundance patterns between healthy mangroves and restoration sites. Encouragingly, some restored sites appear to be tracking towards a similar crab “fingerprint” to that found in healthy mangrove systems.



GLOW Australia researchers in the field

Night-time monitoring has opened another valuable window into mangrove activity. Early observations suggest that larger crab specimens may be more active at night, revealing patterns that would otherwise be missed during daytime surveys. The camera systems have also captured other animals moving through the mangroves, including a rodent observed at night. In addition to crab monitoring, the Australian team continues to monitor sentinel fish species as indicators of mangrove ecosystem health.

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