

# **Trophic ecology of Atlantic seabob shrimp *Xiphopenaeus kroyeri*: intertidal benthic microalgae support the subtidal food web off Suriname**

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A combination of stomach content analyses and dual stable isotope analyses was used to reveal the trophic ecology of Atlantic seabob shrimp *Xiphopenaeus kroyeri* off the coast of Suriname. This coastal penaeid shrimp species has a rather omnivorous diet, feeding opportunistically on both animal prey and primary food sources. The species is a predator of hyperbenthic crustaceans, including copepods, amphipods and the luciferid shrimp *Lucifer faxoni*, which are mainly preyed upon during daytime, when these prey typically reside near the seabed. Benthic microalgae (BM) from intertidal mudflats and offshore sedimentary organic matter (SOM) were important primary food sources. Due to their depleted <sup>13</sup>C values, coastal sedimentary and suspended organic matter, and carbon from riverine and mangrove-derived detritus were not incorporated by *X. kroyeri*. Intertidal BM were an important food source for all life stages of *X. kroyeri*, contributing up to 64 % to the overall diet based on a Bayesian mixing model. Because *X. kroyeri* is the main epibenthic organism found at high densities in nearshore waters up to 30 m depth, the species plays a crucial role in transferring energy from low trophic level prey and primary food sources up to higher levels in the food chain. Our results indicated that primary production on intertidal mudflats, through BM, forms an important energy source for the subtidal turbid-water food web in muddy tropical coasts. Conservation of intertidal areas and their associated mangrove systems will therefore likely benefit coastal shrimp production and fisheries in tropical ecosystems.