RESEARCH ARTICLE

The study of biological, density and sex ratio of snails Neritina violacea, (Gmelin, 1791) in Shatt Al-Aarb, Basrah, Iraq

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Between October 2021 to September 2022, snail samples, specifically Neritina violacea, were collect seasonally from two selected sites in the Shatt al-Arab. At the first station, Garmat Ali and the second station, Salhiya, environmental factors such as temperature, salinity, pH and dissolved oxygen levels in the water The measurements were taken. This study analyzes the population structure of Neritina violacea snails in the intertidal zone of the Shatt al-Arab River, focusing on density, sex ratio, length and body weight. The snail density was 67.7 and 71.6 individuals per square meter, with a sex ratio ranging from 0.47:1 to 0.616:1 (female: male) and an average length of 20.91 mm. Canonical correlation analysis indicated a positive correlation between snail density and dissolved oxygen, while an inverse correlation was found with salinity, temperature and pH values at both study sites.

Keywords: Density, Neritina violacea, Sex ratio, Shatt Al-Arab, Iraq.

Introduction

Freshwater snails are among the most common invertebrates and play a significant role in ecosystems by feeding on algae and dead organic matter, while also serving as a food source for various organisms (Kwong KL, et al., 2010 and Karim RM. (2022).

The Neritidae family is found globally, primarily in tropical and subtropical regions, although some notable species also inhabit temperate oceans. In addition to marine and estuarine environments, they can be found in freshwater habitats in tropical areas.

They are among the most prevalent intertidal mollusks along tropical and subtropical coastlines (Jabbar AMA, et al., 2021).

Most species of Nerita inhabit rocky shores and coral reefs, where they often endure the sun's heat or seek shelter in crevices, under rocks, or among seaweed. These snails are typically active when wet or during the rising and falling tides. Their diet primarily consists of algae that grow on rock surfaces (Frey MA, 2010). In estuarine environments, species of Nerita and Neritina can be found on rocks, wood and mangrove roots, where they may be either herbivorous or carnivorous, feeding on organisms such as fly larvae (Liline S, et al., 2020).

Species inhabiting exposed rocky shores have thick shells that help them resist desiccation and defend against predators. There is a diversity in shell shape among certain populations and tropical species may display a wide range of colors (Echem RT, 2017).

In this family, there is a clear separation between the sexes and fertilization occurs internally. The male has a penis located on the right side of his head, which is use to transfer sperm to the female (Frey MA, 2008).