GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: ***Ilyanassa obsoleta***

Ilyanassa obsoleta 正體中文

System: Marine

Kingdom	Phylum	Class	Order	Family
Animalia	Mollusca	Gastropoda	Neogastropoda	Nassariidae

Common name

Synonym *Nassarius obsoletus* , (Say, 1822)
Nassa obsoleta , (Say,1822)

Similar species

Summary The eastern mudsnail, Ilyanassa obsoleta (= Nassarius obsoletus), was originally only present on the Atlantic Coast of North America. It is now extremely abundant in North American Pacific Coast locations. In the San Francisco Bay it is reported to have overtaken the native California horn snail (Cerithidea californica), and reduced its population by means of competition and larval predation, leaving only small populations in secluded marsh pans, which are too salty for it to establish.

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Species Description
The eastern mudsnail (*Ilyanassa obsoleta*) is a benthic prosobranch gastropod with a black or dark brown conical shell about 1.5-3cm in length containing 5-6 whorls (Cohen, 2005).

Lifecycle Stages
Eastern mudsnail (*Ilyanassa obsoleta*) egg capsules hatch into larvae after about ten days. The larvae are free swimming but rely primarily on currents for transport. Larvae feed on phytoplankton 20-30 days before settling and metamorphosing (Cohen, 2005), although this may be delayed until they find desirable substata (Scheltema, 1961). They remain dormant during the winter and almost all of their growth takes place during the summer months. *N. obsoletus* has a life span of approximately 5 years (Scheltema, 1964).

Uses
The eastern mudsnail (*Ilyanassa obsoleta*) is popularly kept to clean aquariums.

Habitat Description
Eastern mudsnails (*Ilyanassa obsoleta*) may be found in the benthic zone of intertidal flats and estuaries. They prefer brackish waters and cling to nutritious substrata (Cohen, 2005). *N. obsoletus* are temperature sensitive and have been known to develop thinner than normal shells and are known to breed up to three months early if water temperatures are disturbed (Barnett, 1972)

Reproduction
The eastern mudsnail (*Ilyanassa obsoleta*) reproduces sexually and breeds on incoming tides during the fall and spring seasons. Mudsnails use chemo-reception to aggregate and copulate around oysters and sometimes mussels, on which they deposit capsules containing several eggs. Their deposition on living substrates is believed to decrease the likelihood of the embryo being smothered by sediment, however, they also deposit capsules among eelgrass (Rittschoff, 2002).

Nutrition
The eastern mudsnail (*Ilyanassa obsoleta*) is a facultative scavenger and deposit feeder which consumes diatoms, minute worms, algae, fish and crustacean remains, and other organic matter, including faeces (Frankenberg 1967) found on underwater surfaces. The mudsnail ingests sediment wholly and its digestive tract breaks down organic matter leaving almost completely inorganic waste (Scheltema 1964).

General Impacts
The eastern mudsnails (*Ilyanassa obsoleta*) introduction to the Pacific Coast of North America has caused a change in the native fauna. In the San Francisco Bay the once dominant California horn snail (*Cerithidea californica*) has been reduced to small populations where habitats overlap. Where the salinity is higher the populations of the California horn snail is able to survive (Race, 1982).
The invasive *N. obsoletus* preys on the eggs and larvae of the endemic *C. californica* and as a result, *C. californica* is restricted to small habitats unsuitable to *N. obsoletus*. Seasonal migration of these two species has demonstrated that their competition is a recurring problem and not an isolated incident. The invading eastern mudsnail has been found in other Pacific locations but its ecological effects have yet to be evaluated. It is believed to be transported along with Atlantic oysters, the eastern mudsnail poses a threat to new habitats and should be monitored (Race, 1982).
I. obsoleta is also host to several trematode species including one that causes swimmers itch.

Pathway
Eastern mudsnails are believed to be transported to the Pacific along with Atlantic oysters on which it lays its eggs (Cohen, 2005).

Principal source: Carlton, J.T.1992. Introduced Marine and Estuarine Mollusks of North America: An end-of-the-20th Century Perspective. Journal of Shellfish Research, Vol. 11 No.2, 489-505.
\r\nCohen, A. N. 2005 Guide to the Exotic Species of San Francisco Bay. San Francisco Estuary Institute, Oakland, CA. www.exoticsguide.org.
\r\nScheltema, R.S. 1964. Feeding habits and growth in the mud-snail *Nassarius obsoletus*. Chesapeake Science. Vol.5, No. 4, 161-166.

Compiler: National Biological Information Infrastructure (NBII) & IUCN/SSC Invasive Species Specialist Group (ISSG)

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ALIEN RANGE

[1] CANADA

[3] UNITED STATES

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Managment information

Centre for Environment, Fisheries & Aquaculture Science (CEFAS)., 2008. Decision support tools-Identifying potentially invasive non-native marine and freshwater species: fish, invertebrates, amphibians.
Summary: The electronic tool kits made available on the Cefas page for free download are Crown Copyright (2007-2008). As such, these are freeware and may be freely distributed provided this notice is retained. No warranty, expressed or implied, is made and users should satisfy themselves as to the applicability of the results in any given circumstance. Toolkits available include 1) FISK- Freshwater Fish Invasiveness Scoring Kit (English and Spanish language version); 2) MFISK- Marine Fish Invasiveness Scoring Kit; 3) MI-ISK- Marine invertebrate Invasiveness Scoring Kit; 4) FI-ISK- Freshwater Invertebrate Invasiveness Scoring Kit and AmphISK- Amphibian Invasiveness Scoring Kit. These tool kits were developed by Cefas, with new VisualBasic and computational programming by Lorenzo Vilizzi, David Cooper, Andy South and Gordon H. Copp, based on VisualBasic code in the original Weed Risk Assessment (WRA) tool kit of P.C. Pheloung, P.A. Williams & S.R. Halloy (1999).
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