



Alabama Marine Resources Division
Department of Conservation and Natural Resources

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GULF & SOUTH ATLANTIC REGIONAL PANEL ON AQUATIC INVASIVE SPECIES

Alabama Marine Invasive Report

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Over the past 10-15 years, several invasive species have been found in Alabama waters. A single occurrence of the Bocourt swimming crab (*Callinectes bocourti*) was documented in 2000 near Point Clear, Alabama and a total of three tessellated blennies (*Hypsoblennius invemar*) were documented in 1998 and 2002 during a scientific study of blenny habitat association with oil/gas platforms in the north central Gulf of Mexico. The Australian spotted jellyfish (*Phyllorhiza punctata*) continues to occur in the near shore waters of Alabama's coast during early to mid-summer, but swarms are less frequent and overall abundance has decreased since their peak in 2000. Also an Asian green mussel, *Perna viridis*, was found on a dock in Perdido Bay during August 2011 by a group of Eastern oyster researchers. The specimen was later verified by a malacologist with Auburn University's Fisheries/Aquaculture Department. Upon the verification, the investigators allocated approximately 22 effort hours of graduate students, technicians, and staff to find more of these invasive mussels. Given the decline of the Australian spotted jellyfish, the low frequency of documented reports of the Bocourt swimming crab, the single documentation of the tessellated blenny, and the occurrence of the lone Asian green mussel despite the significant effort to locate additional individuals, the invasives previously mentioned do not appear to pose an imminent threat to resources or ecology. However, the giant tiger prawn and lionfish currently are invasives of heightened concern.

The giant tiger prawn (*Penaeus monodon*) has been a species of concern since 2006 when it was first observed in Alabama's inshore waters (Mississippi Sound). After the first individual was documented, captures of *P. monodon* have incrementally increased (Figure 1). A confirmed report of a single specimen caught near Middle Bay Light occurred in 2008, followed by five confirmed reports in 2009. From 2006 to 2009, the distribution of *P. monodon* was primarily restricted to Alabama's southern inshore waters. However, its distribution has shifted towards the northern portion of Mobile Bay and into Perdido and Wolf Bays. The twelve confirmed reports during 2011 indicate the giant tiger prawn occurs within all of Alabama's primary estuary basins. The increase in confirmed reports is coupled with several secondary reports of commercial shrimp

trawlers catching numerous individuals in August and September during a single night of shrimping around the Theodore Industrial Canal and north of Middle Bay Light in the Mobile Ship Channel.

The number of recent captures and reported sightings suggests *P. monodon* has become established in Alabama's waters, which has shifted the focus of the Marine Resources Division management agency from documenting the occurrence to characterizing the population structure. Of the confirmed reports where specimens were recovered by Department of Conservation and Natural Resources/Marine Resources Division (DCNR/MRD) personnel, sex was determined in eight of eighteen specimens, 3 individuals were females and 5 were males. Length of the male specimens ranged from 141mm to 221mm, while length of the females ranged from 172mm to 215mm. The smallest specimen (sex undetermined) was 135mm and the largest was the 221mm male. Despite the lack of confirmation of early life stages of *P. monodon* in Alabama waters, it is likely that larval transport to Alabama waters is occurring and/or the adults previously documented in the area are reproducing. Regardless, a validated mechanism resulting in the capture of only adult age classes is unknown.

Fewer confirmed reports of lionfish (*Pterois volitans* and *P. miles*) exist compared to reports of the giant tiger prawn, although the presence of lionfish is just as disturbing (Figure 2). The first report, albeit non-validated, was from a 2009 observation made by a recreational SCUBA diver at an area of natural hard-bottom about 16 miles south-southeast of Orange Beach referred to as the Trysler Grounds. The first confirmed report was documented in June 2011 by a spear fisherman who collected an individual from an oil/gas platform approximately 43 miles south of Dauphin Island. Numerous unconfirmed reports of lionfish have been made to various government agencies that indicate lionfish are rather abundant on the Trysler Grounds. SCUBA divers have reported observing up to 30 individuals during a single dive in this area. Similarly, reports are being made by SCUBA divers that lionfish are inhabiting oil/gas platforms at low densities.

The lionfish also has been reported in inshore waters and within Alabama's territorial seas. A lionfish was reportedly observed north of the Lillian Bridge in Baldwin County, Alabama on November 26, 2010 and the salinity near the observation point on November 29, 2010 was 23 ppt. Confirmation for this capture was not established as pictures of this lionfish did not accompany the report, and lionfish are not tolerant to fluctuations in salinity in their native waters. Therefore, two possible theories can be postulated from this report. One theory is that the lionfish have adapted to tolerate estuarine salinities along the North Central Gulf of Mexico. However, the adaptation to a wider salinity range likely is not the justification for the report of a lionfish in the upper reaches of the Perdido estuary. Due to the limited amount of time that lionfish have been reported along Alabama waters, lionfish likely have not been able to adapt to a wider salinity range within a single generation. The other theory is based upon misidentification. Given the two investigations that resulted in a misidentified bighead searobin and a sargassum fish for a lionfish, it is likely the observer misidentified a native finfish and reported his/her observation as a lionfish.

The validity of a portion of lionfish reports are questionable, and the ratio of giant tiger prawn that are rumored to have been caught to the amount of reports received by State agencies is relatively high. For example, native finfish with an intriguing appearance often seem to be confused with lionfish. Similarly, unsubstantiated rumors of


shrimpers routinely catching giant tiger prawn throughout Mobile and Baldwin County exist yet relatively few are reported. Therefore, educating the public is paramount to obtaining quality information. The DCNR/MRD has increased efforts to enhance public awareness of these two invasives. A notification that describes the giant tiger prawn and provides information concerning proper reporting has been distributed to the shrimping community (Figure 3). Also, a page within the 2012 Alabama Marine Information Calendar is dedicated to educating the public about the giant tiger prawn and the lionfish (Figure 4). The calendar is distributed to a variety of places where it becomes readily available to DCNR/MRD constituents.



Figure 1. Satellite imagery map of Alabama marine waters indicating the spatial and temporal distribution of *Penaeus monodon* from 2006 to present



Figure 2. Satellite imagery map of Alabama marine waters indicating the spatial and temporal distribution of *Pterois volitans/miles* from 2010 to present.




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Notice




Alabama Marine Resources confirmed numerous reports of the Asian tiger Shrimp, *Penaeus monodon*, caught by multiple commercial shrimpers within Alabama waters. Confirmed reports of this shrimp have increased since 2006 when it was first observed in State waters. This shrimp is native to the West Pacific and if they become established here they could pose a threat to our native shrimp species. This shrimp has distinct dark and white bands along its back, and can attain 12 inches in length. If you find this shrimp please record the location, save the specimen and contact Craig Newton or John Mareska at the Alabama Marine Resources Division at (251) 861-2882. Please ice the shrimp for further examination by biologists.

Please Contact Alabama Marine Resources at 251-861-2882


Figure 3. Notification distributed by Alabama Marine Resources Division to the shrimping community in order to increase awareness and promote reporting.

RED LIONFISH

Pterois volitans




Lionfish are native to the Indo-Pacific and were most likely introduced into U.S. waters during Hurricane Andrew when an aquarium containing lionfish was destroyed. With no real predators these fish are highly destructive to the native reef fish populations and have the potential to harm red snapper and grouper populations. Lionfish will rarely bite a baited hook and are normally landed through spearfishing. Extra care is needed when handling lionfish because their spines can inject venom. If you are injected with lionfish venom seek medical attention as soon as possible.




GIANT TIGER PRAWN

Penaeus monodon

The giant tiger prawn is native to the Western Pacific and are easily distinguished from native Alabama shrimp. Tiger prawns can grow to extremely large sizes, have black and white banding down the body, and were first reported in Alabama waters in 1996. The introduction of this invasive species is believed to have occurred first in the Bahamas when a hurricane damaged an aquaculture facility. Reports of tiger prawns have come in from North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, and Louisiana.



Make sure your camp fire is completely out before leaving.



Call the Alabama Marine Resources Division to report invasive species:
Dauphin Island (251) 861-2882
Gulf Shores (251) 968-7576

Figure 4. Draft excerpt from the 2012 Alabama Marine Information Calendar distributed to a wide range of user groups in order to educate, increase awareness, and promote reporting of invasive species.