

## **Pufferfish Poisoning is dangerous for both humans and animals.**

Do not eat its meat, do not touch it and don't let pets eat it.



Picture 1: One of the dead pufferfish that washed up in Mogadishu



Picture 2: A marine student collecting the details of the dead fish.

### **Message:**

The City University of Mogadishu Marine & Fisheries Institute has been looking into a school of dead pufferfish (local name: Qurumbow) recently found in beaches around Mogadishu. There are a number of possibilities for the mass mortality of these fish including some natural phenomenon, poisonous algae and bacterial infections. What is certain and we wish to communicate to the public is that eating pufferfish meat or consuming turtle meat that eats pufferfish can be deadly to both humans and animals. Hence the importance of awareness of the public on the dangers of pufferfish meat.

What is particularly interesting about the pufferfish is that it naturally contains a potent neurotoxin known as *tetrodotoxin (TTX)* that is over a thousand times more deadly than cyanide and can paralyze or kill humans within hours by blocking the transmission of signals from nerves to muscles thus causing paralysis, difficulty breathing and death. Medical professionals should look out for the different neuromuscular symptoms of pufferfish poisoning including:

Headaches, loss of balance, slurred speech, burning sensation and tingling of the lips and tongue, abdominal pain, nausea, diarrhea, vomiting, irregular heartbeat, convulsions and respiratory failure.

The Mogadishu municipality and volunteers have done well in collecting the dead fish from some areas which should protect beachgoers, birds and other animals from getting sick or dying of its deadly poison.

### **Background & Cause of Death:**

Tetraodontidae is a diverse family of fish with species such as Pufferfish, Balloon fish, Blowfish, Bubble fish, Globefish, Swellfish, Toadfish, Toadies, Honey Toads and Sea Squab. Puffer fish are commonly distributed in tropical waters but are also found in both the sea and brackish waters. There have been many reports over the years of similar incidents in which dead pufferfish washed up on coastal communities around the world. From New Zealand to Japan, South Africa to Kenya, and Somalia to Yemen; mass fatalities of pufferfish have been documented. Now the question is what is killing the pufferfish in such numbers?



The marine science staff and students led by Professor Sivakumar Arunachalam, Ph.D. collected some samples and are investigating what may have caused such mass deaths of this particular fish. Although the investigation continues, below are some of the early findings from our research:

Pufferfish usually lives close to land in shallower warm waters and is not well suited for the open ocean. Strong waves, currents and storms could be responsible for driving schools of puffer fish to the coast. When pufferfish is washed to the coast, it cannot survive more than 3-4 minutes outside the water. The literature review also indicates that natural marine phenomena can result in such events from time to time. A Harmful Algae Bloom (*a high concentration of off-season bloom of naturally occurring toxic algae*) sometimes causes mass strandings and could be the reason behind this event. Bacterial infections, a poisonous fungus consumed by some of the fish is another suspect. *This preliminary report is intended to get the word out on the poisonous nature of this fish. A complete report will be released once the investigation is completed and all test results are analyzed.*



Picture 3: Marine staff and students investigating the cause and consequences of the dead fish.



Picture 4: The Marine & Fisheries Campus on Lido Beach

**The City University of Mogadishu Marine & Fisheries Institute** is the premier Marine Science Center in Somalia. Its world-class staff (both on the ground and online), labs, equipment, boats, relevant research and alumni studying or with graduate degrees from countries including Japan, Italy, Turkey and Kenya. The Institute is a leader in the rebuilding of the national capacity in our virgin blue economy and has strategic partnerships with Hasene International of Germany, Federal Government and Federal Member State Ministries, universities, regional bodies and local and international NGOs in the US, Norway, Germany, Kenya, Tanzania and Turkey. It also provides services to all regions of the country in training, consultations and the restoration of mangrove forests.