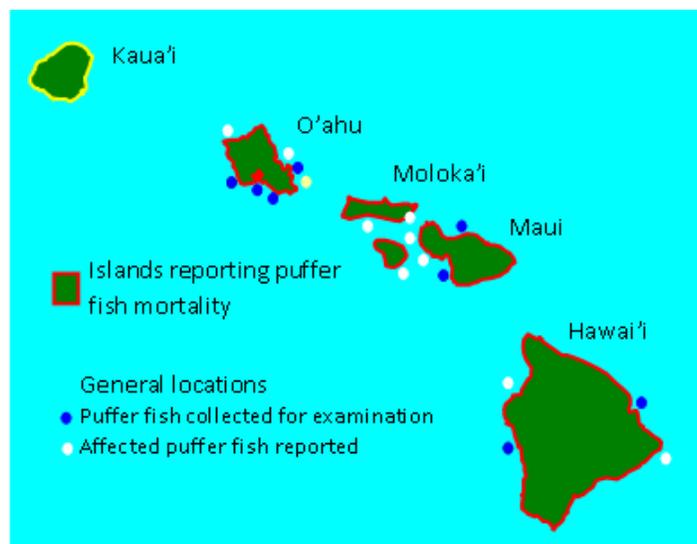


To: Natural Resource/Conservation Managers
From: Jonathan Sleeman, Director, USGS National Wildlife Health Center
Title: Puffer Fish Die-off in Hawaii
Date: August 27, 2010

The USGS National Wildlife Health Center (NWHC) Honolulu Field Station (HFS) is investigating a die-off of striped puffer fish (*Arothron hispidus*) occurring on the islands of Hawaii, Maui, Molokai, Lanai, and Oahu. Mortality has been ongoing since February on the island of Hawaii; March on the island of Maui; and April on the island of Oahu. Affected puffer fish are appearing on the water surface and on shorelines. Fish on the water surface are puffed up, are unable to right themselves, and soon die. Longtime residents report that this is unusual. The HFS became involved in mid-June after being contacted by the Hawaii Institute of Marine Biology. Striped puffer fish are the main species affected (>90%), although rare instances of affected spotted puffer fish (*A. meleagris*) and porcupine puffer fish (*Diodon hystrix*) have been reported.

The HFS is working closely with the Hawaii Institute of Marine Biology, Hawaii Division of Aquatic Resources, and members of the public through a community reef watch organization, Eyes of the Reef (EOR). HFS is compiling reports of locations and numbers of puffer fish dying in the Hawaiian archipelago. EOR volunteers on Hawaii and Maui are retrieving and shipping fish from those islands to the HFS on Oahu for necropsy and laboratory tests. To date, the HFS has necropsied more than 70 fish and is working with Washington University and the USGS Western Fisheries Research Center (WFRC) in Seattle to determine the cause of illness and death. Causes ruled out include fishery bycatch and certain infectious agents like bacteria, fungi, or parasites. Currently, scientists are pursuing the possibility that a virus or toxin may be involved. HFS is compiling reports of mortalities from the public, continuing outreach to field personnel requesting that they report dead or dying fish, coordinating shipment and receipt of fish from neighboring islands to Oahu, continuing necropsies and diagnostic evaluations, working with the WFRC to do electron microscopy and virus isolation attempts, working with Washington University to screen for viruses, and consulting with other fish pathologists to get more ideas of what may be occurring.



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If dead or dying puffer fish in the Hawaiian Chain are found, please contact Dr. Thierry Work, 808-792-9520, thierry_work@usgs.gov

Links to media stories about this die-off:

[The fish are dying in large numbers, and scientists are struggling for answers](#)
[Mysterious illness killing pufferfish](#) (includes video)

To report or request assistance for wildlife mortality events or health issues, visit
http://www.nwhc.usgs.gov/mortality_events/reporting.jsp or contact Dr. Thierry Work, 808-792-9520,

thierry_work@usgs.gov (Hawaii and Pacific Islands); Dr. Anne Ballmann, 608-270-2445, aballmann@usgs.gov (Eastern Region); Dr. LeAnn White, 608-270-2491, clwhite@usgs.gov (Central Region); Dr. Krysten Schuler, 608-270-2447, kschuler@usgs.gov (Western Region); or Jennifer Bradsby, 608-270-2443, jbradsby@usgs.gov.

WILDLIFE HEALTH BULLETINS are distributed to natural resource/conservation agencies to provide and promote information exchange about significant wildlife health threats in their geographic region. If you would like to be added to or removed from the mailing list for these bulletins, please contact Gail Moede Rogall at 608-270-2438 or e-mail: nwhc-outreach@usgs.gov.



Abnormal puffer fish from Shark's Cove, Oahu, with cloudy eye and sediment on the back
(T.M. Work, USGS)



Dead inflated puffer fish before necropsy
(T.M. Work, USGS)