BP OIL SPILL THREATENS BLUEFIN TUNA SPAWNING GROUND IN GULF OF MEXICO

Are bluefin threatened by the BP spill? If so, how?

Oil and the dispersants used to break it up are known to be hazardous to fish and their eggs and larvae[1]. Although there is no conclusive scientific evidence available that proves western Atlantic bluefin tuna will be harmed by the spill or the dispersants, there are several reasons for concern. The Gulf of Mexico is the only known spawning ground for western Atlantic bluefin[2]. Unfortunately, the spill occurred at the peak of the bluefin's spawning season[3] in an area where mature bluefin are known to congregate during reproduction[4]. Spawning behaviors take place in depths less than 200 meters, with bluefin making frequent trips to the surface[5].Bluefin eggs are primarily found in the top 15 meters[6]. This exposes spawning bluefin and their eggs to oil, dispersants and dispersed oil, and adults and juveniles to contaminated prey species.

Dispersants are a particular problem for eggs[7], which are largely comprised of oils[8]. These oils provide developing eggs the buoyancy necessary to stay in warm surface waters during development[9]. Exposure to dispersants could break down these important oils, further reducing the survival rate of bluefin eggs that naturally have a very low survival rate[10].

Adults have to feed regularly on prey species[11] that could be laden with dangerous oil and dispersants from the spill. While there is no direct evidence available, it is possible that these toxins can build up in living tissues[12], with the potential to reach hazardous concentrations over time. Additionally oil laden water might harm the bluefin's gills, as this fish must constantly swim with its mouth open to breathe[13].

What are dispersants and how could they affect bluefin tuna?

Dispersants are chemical agents that are employed as one option when conditions prevent the physical removal of oil from the affected environment[14]. Two varieties of COREXIT ® dispersants are being applied directly to the BP oil slick in an effort to break up the oil up into smaller droplets. When dispersants are applied at the surface of a slick the oil mixes into the upper 30 feet of the water column[15], where bluefin, its larvae and its prey species are also found. This chemical could have the ability to bioaccumulate or build up to dangerously high levels in the tissues of upper level predators, like adult bluefin. According to scientists, COREXIT is more harmful to fish larvae than it is to mature adults[16]. These dispersants are also being experimentally applied to the source of the oil leak, where their effects on bluefin and other Gulf species are unknown.

In addition to the BP oil spill, what other major factors threaten Atlantic bluefin?

Global demand for high-end bluefin sushi and sashimi has fueled extensive overfishing of the eastern and western Atlantic bluefin tuna stocks. The western stock is currently at just 18% of its 1970 level[17]. Drastic reductions in bluefin populations make the incidental catch of western Atlantic spawners by surface longlines a substantial risk to rebuilding efforts. These fish take 8 to 10 years to reach sexual maturity[18], making the protection of bluefin spawners, such as those found in the Gulf of Mexico, critical to the bluefin's long-term survival.

What are surface longlines and how do they impact bluefin tuna in the Gulf of Mexico?

Surface longlines are a wasteful and indiscriminate type of fishing gear used to target yellowfin tuna and swordfish in the Gulf of Mexico. Lines can be up to 40 miles long and carry hundreds of baited hooks[19]. After the gear is deployed, longlines are left unattended for several hours in active bluefin spawning areas[20]. Hundreds of spawning bluefin are incidentally caught by this gear every year. Approximately 55% of these fish are discarded dead[21]. These longlines also catch and kill non-target species such as blue and white marlins, sailfish and endangered leatherback turtles.

Where are the known bluefin tuna spawning grounds?

Atlantic bluefin tuna are separated into an eastern and a western stock. The eastern stock spawns in the Mediterranean Sea[22]. The western stock spawns in the Gulf of Mexico.

How and when do bluefin spawn?

Western Atlantic bluefin tuna spawning peaks during the month of May in the Northern Gulf of Mexico[23]. Bluefin are capable of spawning three consecutive years in a row[24], but they may not always spawn every year[25]. On their way to the spawning ground, bluefin travel in deep, cool water to the northern continental slope in the Gulf of Mexico. Bluefin then position themselves west of the Loop Current in waters that are between 200 and 3,000 meters deep[26]. Once in this preferred spawning area, bluefin make frequent trips to the surface and shallow night dives of less than 200 meters. Each female will release more than 30 million eggs[27]. Many of these eggs do not survive due to natural predation and starvation[28].

What is the geographical range of those bluefin born in the Gulf of Mexico?

Bluefin born in the Gulf of Mexico are distributed primarily along the eastern seaboard of the United States and Canada. Bluefin feed in the highly productive waters of the Gulf of Maine, Scotian Shelf and central North Atlantic[29]. After approximately 8-10 years, they will reach sexual maturity and return to the Gulf of Mexico to reproduce.

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