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Animal ingestion of brevetoxin laden fish-avian, aquatic and terrestrial impacts

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Brevetoxin causes large scale fish mortality events with high frequency along the Gulf of Mexico coastline. Brevetoxin-laden fish are beached, and can be ingested by organisms from aquatic, coastal, or terrestrial habitats. The residence time of brevetoxin in beached fish was assessed using striped mullet and pinfish. Fish brevetoxin concentrations were measured prior to placement of fish in outdoor mesocosms above and belowground. Fish were removed from the mesocosm at times 1, 2, 3, 4, 8, 12, 15, 23, 46, and 77 days, brevetoxin concentration was measured and normalized to account for desiccation. Brevetoxin concentrations decreased by 50% in less than 4 days in aboveground samples, while belowground samples required 5-15 days. High levels of brevetoxin were detected post-bloom in shorebirds, dolphins, dogs, and coyotes that died near these red tide events. These results support a linkage of brevetoxin impacting terrestrial foodwebs.

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