

APPLICATION OF PREY-DROPPING BEHAVIOUR TO A SPINY DOGFISH *SQUALUS ACANTHIAS*  
BY A HERRING GULL *LARUS ARGENTATUS*

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Many gulls *Larus* spp. gain access to the soft tissues of hard-shelled invertebrates (e.g. molluscs and arthropods) by dropping them from the air. This 'prey-dropping behaviour' has been well documented for Herring Gulls *L. argentatus* (e.g. Ingolfsson & Estrella 1978). Typically, items to be opened are carried to a height of 5-8 m (Cramp & Simmons 1983) and dropped to the ground. Herring Gulls prefer hard surfaces upon which to drop shells, and may fly some distance to reach one (Ingolfsson & Estrella 1978). The efficiency of this behaviour increases with age (Ingolfsson & Estrella 1978).

Prey-dropping behaviour may also be applied to soft-bodied animals. Oldham (1930) noted that the dropping of "bones, crabs, molluscs, reptiles and other animals by birds of widely different classes" had been observed often. The application of prey-dropping behaviour to soft-bodied animals, however, has rarely been reported for Herring Gulls. In a review of the foods of Herring Gulls, Cramp & Simmons (1983) identified only two reports of soft-bodied vertebrates being dropped. The first involved the repeated dropping of Common Frogs *Rana temporaria* from heights of 10-15 m before being swallowed by Herring Gulls (Helle 1975). The second described the dropping of a rat *Rattus* spp. by a Greater Blackbacked Gull *L. marinus* (Harber & Johns 1947) and was incorrectly included in Cramp & Simmons (1983). Additionally, Ingolfsson & Estrella (1978) reported that Herring Gulls occasionally dropped starfish

(Asteroidea), an arguably soft-bodied animal.

Here I report on the application of prey dropping behavior to a Spiny Dogfish *Squalus acanthias*. Although dogfish are known prey of both Herring and Greater Blackbacked Gulls, previous observations suggest such fish were obtained by scavenging (F. G. Buckley *in litt.*).

On 16 July 1989, I observed an adult Herring Gull kill and consume a Spiny Dogfish at Harding Beach (41°40'N, 70°00'W), Chatham, Massachusetts, USA. I first observed the gull in flight carrying the fish. The gull approached from Nantucket Sound, 20 m distant. Comparing the size of the fish to that of the gull, I estimated the fish to be approximately 0.25 m long. The gull dropped the dogfish onto a parking lot from an estimated height of 6 m. The fish struck the pavement ventral side down and the gull landed within 1 m of it. The gull then walked to the fish and began tearing pieces from its gills. The dogfish, which was still alive, flailed its tail in response and the gull backed away from the fish. When the fish stopped moving, the gull again approached and tore more pieces from the gills. The fish again moved, and again the gull retreated. This cycle of tearing flesh from the fish, then backing off, continued for approximately 10 minutes. When the dogfish no longer responded to the pecking, the gull moved to the fish's head, and swallowed the fish whole. Eleven minutes after the fish was dropped, the gull flew away.

The drop may have served to stun the dogfish

(Oldham 1930), allowing the gull easier access to vital areas. Although primarily used to open hard-shelled invertebrates, prey dropping behaviour provides a means for Herring Gulls to incapacitate soft-bodied vertebrates.

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