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FISHING BEHAVIOR OF COYOTES ON THE
COLUMBIA RIVER, SOUTH-CENTRAL WASHINGTON

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FISHING BEHAVIOR OF COYOTES ON THE COLUMBIA RIVER,
SOUTH-CENTRAL WASHINGTON

The fishing behavior of a wolf has been described by Bromley (1973), and Grimm (1940) described an instance of a coyote having caught a fish, though he did not actually witness the capture. There is no description in the literature of how coyotes catch fish.

While conducting a radio-tracking study of coyotes on the Department of Energy's Hanford Reservation in south-central Washington (Springer, 1979), I frequently attempted to visually locate the radio-equipped coyotes after obtaining a triangulated location. I made every effort to avoid being noticed by the coyotes so that movements by them would not be induced by my presence. Therefore, actual visual contact was not achieved as often as it was attempted.

On 17 August 1975, at 1430 h, I located Coyote #11 by triangulation and noted that he seemed to be located on Island 10 in the Columbia River. (A map showing islands in the Columbia River on the Hanford Reservation is in Hanson and Eberhardt, 1971; p. 7.) I drove to a point opposite the island on the west bank of the river and walked quietly toward the shore. I carried my 10 x 35 binoculars along to aid in seeing the coyote.

Coyote #11 was a male estimated to be about 7 or 8 years old when fitted with a radio collar two months earlier. He had been captured along the river, and had been located both 8.0 km upstream and 11.0 km downstream from his current location, never more than 0.6 km away from the river.

I sat down among some 10 m high trees, the remains of an abandoned homestead, and looked toward the island. By now it was 1500 h, and I saw that the river level was very low. There are two low water level periods each day, due to the ^{regulated} flow patterns at Priest Rapids Dam upstream and McNary Dam downstream. On this day, the water level was lower than usual, and there was nearly ^a continuous ^{unvegetated} cobble gravel ^{zone} between the shore and Island 10, 400 m east of my location. About 250 m east of me there was a pool with a coyote standing in it (Coyote A), and another coyote (Coyote B) standing on the southeastern edge of the pool. Neither was Coyote #11. The pool was elliptical, measuring about 3 m and 10 m along its two axes. It seemed to be about 0.2 m deep, fairly uniformly, judging from the water level on Coyote A's legs. As I sat down, Coyote B looked directly toward me, then walked to the west side of Island 10 and laid down. Coyote A did not seem to notice me but remained standing and slowly walked in the pool.

Coyote A stood and walked with its tail above the horizontal, and slowly wagging. His ears were erect, and his head occasionally cocked slightly to the left. Keeping all four feet firmly planted, the coyote would lunge and snap at the water. At 1514 h, Coyote A snapped at the water and came up with a large fish: a carp (Cyprinus carpio) about 0.5 m long. He immediately left the pool on the north end and began to bite into the fish. As Coyote A began feeding, I observed Coyote #11 approaching him from the east at a slow trot. Coyote #11 must have been on the east side of Island 10, out of my sight and out of sight of Coyotes A and B when I arrived. When Coyote #11 was about 200 m southeast of Coyote A, Coyote #11 quickened his pace, arched his back, and laid his ears back a little, the "loping threat approach" illustrated by Danner (1976; p. 40).

Coyote A saw Coyote #11 when they were still 10 m apart, and Coyote A walked away from the fish to the northwest. Coyote #11 continued 5 m beyond the fish, and Coyote A gave up more room.

Coyote #11 returned to the fish, his back toward Coyote A, and began feeding on the fish. He bit it into two pieces, and while eating one piece, Coyote A dashed in, snatched the second piece, and ran about 20 m to the northwest. There was no agonistic interaction between the two coyotes this time. When Coyote A had finished eating his piece of fish, he walked 20 m northeast and rubbed his left shoulder on the cobble gravel, then continued 5 m farther northeast, laid down and went to sleep. It was 1525 h.

Meanwhile, Coyote #11 had walked into the pool and begun to hunt for another fish. He snapped at the water infrequently compared to Coyote A earlier, and when he did snap, there was usually a noticeable swirl from a fish escaping. Coyote #11 held his tail below the horizontal and did not wag it as he paced around the pool. At 1540 h, Coyote #11 snapped at the water, keeping all four feet firmly down as Coyote A had, and was successful. This fish was also a carp, about the same size as the other. The coyote carried the fish to the north side of the pool, which happened to be the closest, laid the fish down, and chewed at its belly. After only one minute, he walked away from the fish, circled slowly in a 5 m radius, came back and sniffed the fish, then left again.

By 1550 h, Coyote #11 was back in the pool hunting for another fish, though he had eaten very little of the one he had just caught. He stayed in the pool until 1640 h, and though there was at least one more fish there, he did not catch it. As Coyote #11 hunted, a gull (Larus sp.)

picked at the fish he had abandoned. The gull left, and a Black-billed Magpie (Pica pica) picked at the fish for a few minutes. Finally, a Great Blue Heron (Ardea herodias) came and swallowed all that was left. Throughout the afternoon there were several gulls, herons, magpies, and crows near the pool and Island 10. When Coyote #11 left the pool, he walked northward to the same spot Coyote A had gone, and he too rolled and rubbed on the stones. He then walked 35 m northward, laid down and went to sleep.

Now Coyote B, who apparently had forgotten I was there, walked slowly to the pool from the shore of Island 10, and he began to hunt for fish. Coyote B kept his tail above the horizontal but did not wag it as he paced around the pool. He had only snapped at the water three times in 5 minutes when he looked toward me, left the pool, and walked back to Island 10. He laid down. Not wanting to cause them to move because of my activities, I left the scene at 1700 h, all three coyotes sleeping.

Generally speaking, it seems clear that coyotes do not often eat fish. Major food habits studies have repeatedly borne this out. Sperry (1941) examined 8339 coyote stomachs, and found fish in only 11 of them: 1 salmon from Oregon, 1 carp from California, 1 catfish from Montana, 1 bullhead from South Dakota, and 4 unidentified fish from Arizona, Oregon, Washington, and Wyoming. Ferrel et al. (1953) found fish in only 2% of the 297 coyote stomachs from southern California, and none in the 1925 stomachs from the rest of California. Korschgen (1957) found no fish in the 770 stomachs and only 1 occurrence in 326 scats collected from Missouri. Murie (1935) found that fish occurred 17 times in 64 stomachs and 714 scats from Wyoming, all trout (Salmo sp.) and presumed to be carrion. Fichter et al. (1955) found no fish in 747 stomachs,

and only 0.1% fish remains in 2500 scats from Nebraska. Ozoga and Harger (1966) followed 322 miles of coyote trails on Beaver Island, Michigan, and found remains of one fish that had been eaten on: a sturgeon (Acipenser fulvescens). Along 505 miles of coyote trails in Upper Michigan they found no fish. There was a 4.2% frequency of fish in 48 scats from Beaver Island and none in 44 scats from Upper Michigan.

Sperry (1941; p. 57) wrote, "One would hardly expect the coyote to be a successful fisherman, so possibly the fishes that appeared in a few stomachs were largely carrion." This supposition may be correct. The belief that coyotes eat fish primarily or only as carrion was also mentioned by Murie (1935) and Ozoga and Harger (1966).

Many studies have found no evidence of fish at all (Bond, 1939; Gier, 1969; Gipson, 1974; Meinzer et al., 1975; Gipson and Sealander, 1976). A study of coyote food habits on the Hanford Reservation (Stoel, 1977) turned up no evidence of fish consumption. The transects from which Stoel collected scats were well away from the Columbia River, never closer than 12 km, and this may be the clue to the dearth of fish in food habit studies. It could well be a localized feeding pattern along lakes, ponds, rivers, and streams. If the coyotes that eat fish stay near the bodies of water, then scats collected over all types of habitats and stomachs from coyotes taken in all types of habitats probably would have few occurrences of fish.

I casually examined more than 50 scats collected on the shores of the Columbia River or from islands in the river, and many of them contained obvious fish scales or bones. (Unfortunately, a thorough examination was not made; the scats were given to another researcher and were subsequently lost.)

The fact that three different coyotes were observed stalking fish in essentially the same fashion added to the fact that two were successful, would indicate that catching live fish is an established behavior on this stretch of the Columbia River. Grimm (1940) described how a coyote caught crayfish by walking along a shallow stream, stopping suddenly and submerging its muzzle into the water. His observation was along the flowing Gardiner River in Yellowstone National Park, Wyoming. Moore (1929) described the behavior of a coyote attempting to catch tadpoles and frogs in California as plunging snaps. Both these descriptions fit the behavior of the three coyotes I observed. It could be a widespread behavioral pattern. The characteristic leap, coming down with both paws together used to catch mice (Van Wormer, 1964), would be ineffective in capturing aquatic animals.

Fichter et al. (1955; p. 34-35) stated that "coyote feeding patterns vary from locality to locality, from season to season, from year to year; lumping data can obscure possibly important local patterns and generalizations can be misleading." Evidently, catching and eating fish is a local phenomenon along the Columbia River on the Hanford Reservation, where pool formation occurs with sufficient frequency to establish a behavioral tradition. Similar behavior could also occur along other drainages where water levels fluctuate with some regularity.

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