

CRAYFISH-PROCESSING BEHAVIOR IN THE KING RAIL
(*Rallus elegans*)

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Decapod crustaceans are important components in the diets of the King Rail (*Rallus elegans*) and closely related Clapper Rail (*R. longirostris*) (Meanley, 1956, 1963, 1992; Heard, 1982; Zembal and Murray, 1988). Small crayfish and crabs are ingested whole. Larger individuals are dismembered, shaken apart, or hacked to pieces, but details of the techniques used to penetrate the tough exoskeletons of decapods are unreported. Here I describe the crayfish-processing behavior of King Rails in Huntley Meadows Park, Fairfax County, Virginia.

Several breeding pairs of rails in the late 1990s were habituated to human foot traffic on the elevated boardwalk that winds through emergent stands of rushes, cattails, and lizard's tail (*Saururus cernuus*) in the central wetlands of the park. I observed foraging rails on three occasions at close range (5–6 m) with 10 × 40 Zeiss binoculars during May and June 1998. I estimated crayfish size (*Cambarus diogenes*) by comparing cephalothorax length with bill length of the rails (57–62 mm).

In the first instance, an adult King Rail grasped the pereopods of a large crayfish (cephalothorax, ~60–65 mm) submerged in a shallow muddy pool and carried it to the nearby bank. The rail quickly severed the crayfish's chelipeds with vigorous bill jabs. It then flipped the cephalothorax and aimed more jabs at the ventral midline between the fourth and fifth pairs of pereopods, cutting the ventral nerve cord. Additional pecks and jabs detached and fragmented the pereopods of the incapacitated crayfish. The rail then extracted and consumed bits of the yellow hepatopancreas, gills, muscle, and other organs, leaving the cephalothorax hollowed, stripped of most soft tissue. Finally, the rail detached the fully armored abdomen from the cephalothorax and swallowed it and some fragments of pereopods before walking away. The entire sequence lasted less than four minutes.

A week later I observed an adult King Rail, possibly the same individual, pulling soft tissue from the cephalothorax of a large crayfish (cephalothorax, ~60–65 mm) on a mound of matted vegetation. Detached chelipeds, pereopods, and abdomen were lying nearby. After picking the thoracic cavity clean, the rail swallowed the abdomen and then resumed foraging.

In the third case, two juvenile rails (about two-thirds of adult size) cooperatively hammered at a large crayfish (cephalothorax recovered, 55 mm), detaching its chelipeds and several pereopods. The rails then turned the incapacitated crayfish over and took turns extracting bits of soft tissue from the thoracic cavity. Finally,

one rail detached and swallowed the abdomen while the other consumed fragments of pereopods.

These observations add to the sparse body of data on the foraging behavior of this species published by Brooke Meanley (1956, 1969, 1992). Of more general significance, they suggest that both juvenile and adult King Rails use a stereotyped sequence of foraging maneuvers to incapacitate, dismember, and consume large crayfish. Ontogeny of crayfish-processing behaviors, whether instinctive or learned, may best be determined by captive rearing of young rails (Kaufmann, 1977; Andreas, 1996).

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