

THE BELTED KINGFISHER OF THE COWPASTURE RIVER

by Keith Carson, President, Bath-Highland Bird Club

Editor's note: The following essay is the 12th in a five-year series on water resources stewardship in the Cowpasture River Watershed, sponsored by the Cowpasture River Preservation Association and published by The Recorder. The goal of the series is to create awareness among students, citizens and officials of the critical need to protect our surface and ground water resources, and to stimulate interest in progressive stewardship.

BLUE GRASS -- Along virtually any stream and near many ponds throughout the Allegheny Highlands, you are likely to come across a large, stocky blue/gray bird with a white belly perched on a tree branch or utility line overlooking the water. With its large black bill and formidable, rakishly crested head, the Belted Kingfisher (*Megaceryle alcyon*) will make you stop and do a double-take when you catch a glimpse of one near a stream. They are 11-14 inches long from bill tip to tail tip, which is just larger than the Blue Jay, and a bit smaller than the American Crow. They have a wing span of up to 23 inches. The female is slightly larger than the male, and in contrast to most bird species, is more colorful than the male, with a chestnut band across the chest just below its blue/gray breast band or "belt." The legs of the Kingfisher are short and the feet are small and relatively weak. The two inner toes are fused into a single flattened toe used for digging the nest tunnel.



Belted Kingfisher Depicted in Northwest Coast Native Art

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Folklore -- Northwest Coast Indians have long recognized the Kingfisher for its speed, agility and keen hunting skills. The Indians believed that the Kingfisher carried the promise of wealth, prosperity and

love for the one that sees a Kingfisher in the wild. Kingfishers are also popular in Northwest Coast Indian art. As with many of the scientific names of animal species, there are often very interesting stories behind the choices of names for plants and animals, and the Belted Kingfisher is no exception. “Mega-” means “large” or “great.” “Ceryle” is derived from the Latin “caeruleus” meaning “deep blue.” “Alcyon” is from ancient Greek and means “kingfisher” or “sea-blue one.” According to the Greek myth, Halcyon (from which “alcyon” is derived), daughter of the wind god Aeolus, threw herself into the sea to join her shipwrecked and drowned husband Ceyx. Both were then transformed into kingfishers by the gods. When Alcyone made her nest on the beach, wind-driven waves threatened to destroy it. Aeolus restrained his winds and kept the waves calm during seven days each year, so she could lay her eggs. These became known as the “halcyon days,” when storms do not occur. It is interesting that Kingfisher behavior is also consistent with this legend, since the bird, in a manner reminiscent of Halcyon, somewhat recklessly throws itself head first into the water to catch fish.

Family -- The Kingfishers are members of the Family Coraciiformes (“raven form” birds) which also includes the Bee-Eaters, Rollers, Motmots, and Todies. Most of these are Old World species found in Europe, Asia, Africa, Indonesia, Australia and some Pacific islands. Belted Kingfishers are one of the



Female Belted Kingfisher in Flight

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most widely ranging birds in North America and are found in every state except Hawaii. They range across Canada from British Columbia to Newfoundland and north into southern Alaska, as well as throughout Mexico and as far south as northern South America. It is common to hear Kingfishers before actually seeing them. Belted Kingfishers exhibit at least six different calls which they combine in different ways to express different messages. The call most commonly heard by the casual observer is a call used for territory defense, which is a long, high-pitched chatter or rattle. You can visit the Cornell Laboratory for Ornithology website to listen to Kingfisher vocalizations.

Hunting -- Kingfishers are most active in early morning and late afternoon and are described as “sit and wait predators” that perch near streams and ponds waiting to catch sight of a small fish or other prey. They will often hover over the water for a few seconds before abruptly dropping head first into the water. Kingfishers often spread their wings to cushion the impact. They can submerge completely underwater and use their wings to swim to the surface, taking flight from the water with their prey clasped firmly in their bill. Kingfishers may plunge to a depth of two feet in pursuit of fish. The successful hunter will then head for a perch such as a tree limb or fence post and will whack the prey against the hard surface a few times before turning the dead or stunned prey to swallow it head first. Although Kingfishers primarily eat fish they are also known to feed on crustaceans (like crayfish), molluscs (freshwater mussels or clams), insects, amphibians, reptiles, young birds, small mammals and even berries. In a manner similar to owls, indigestible material such as bones and scales are discarded orally in the form of a pellet. When water is highly turbid, fish are too energetically expensive to pursue, and crayfish become the primary prey item. Belted kingfishers also hunt crayfish in circumstances when they are out-competed for fish by mergansers (a type of duck). In colder water, the diet of Belted Kingfishers includes sculpins and trout. In warmer water, they prey on slower-moving fish including suckers, stickle

Breeding – Although solitary for most of the year, starting around early April, the male Belted Kingfisher selects a nest site which various females then visit. The nest site is typically a vertical stream bank. After noisy courtship displays in which the male chases the female while calling loudly, breeding partners pair up. To cement the bond between the pair, the male perches beside the female, with both birds performing unusual semi-circle movements along the length of a perch (break dancing!), before the female is fed a gift fish by the male. Both birds construct the tunnel nest in the wall of a stream bank, with the 1 to 8 foot tunnel leading to the nest inclined slightly upwards in order to trap an air pocket around the nest cavity and prevent water from flooding the nest chamber should the stream rise. A territory that can cover 1200 to 1500 yards of stream, is fiercely defended from other Kingfishers, with any intruders aggressively repelled. Between April and July the clutch of 5 to 8 eggs is laid and subsequently incubated by both the male and female for 22 to 24 days. Observations suggest that the female is responsible for most of the overnight incubating of the eggs. The chicks hatch naked and blind and are intensively cared for by both parents for several days after hatching. After some 27 to 29 days in the nest, the young birds are capable of limited flight and will join the parents in foraging around the territory, although they continue to be fed by the parents for an additional three weeks, after which they are fully independent. Kingfishers are also known to occasionally use tree holes for nesting. They are unable to excavate a tree hole themselves, but may take over an abandoned woodpecker tree hole of the appropriate size, especially when vertical stream banks are in short supply.

Predators -- Although the Belted Kingfisher is currently relatively common in North America, it has been subjected to persecution in the past before protective regulations for birds were instituted. It was shot and trapped in the vicinity of fish hatcheries and commercial trout streams. At Lake Michigan alone more than 400 Belted Kingfishers were killed in a single season

because some believed them to be a threat to commercial and game fish. Studies of Belted Kingfisher prey fish have shown that these birds



Male Belted Kingfisher with a Fish

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typically eat non-game and non-commercial fish species like minnows and sticklebacks. Belted Kingfishers have only a few natural predators, including Cooper's hawks, sharp-shinned hawks, and peregrine falcons. When pursued by these birds, Belted Kingfishers dive under the water repeatedly until the predator ceases pursuit.

Conservation -- Belted Kingfishers cannot hunt in streams where water is polluted with sediment because they cannot see their prey fish in the turbid water. Streams with high levels of phosphate and nitrate from fertilizers tend to have increased algae growth, which can also decrease water clarity. The clear and clean waters often found in the Highlands are ideal for Kingfisher habitat. The Belted Kingfisher is also vulnerable to disturbance of stream banks which may lead to abandonment of nests during the breeding season. Practical conservation measures for riparian landowners might very well include:

- Preserve riparian buffer areas with mature forest cover and overhead bare branches for hunting perches.
- Eliminate sources of sedimentation that create turbidity in surface waters.
- Reduce artificial sources of phosphates and nitrates which cause algae turbidity.
- Minimize habitat disturbances by human activity and particularly of nesting sites.

So get out on your local streams and rivers with your binoculars in the spring and listen for male Belted Kingfishers' rattle calls as they defend their territories and court females. A day spent watching them dive into the water for fish will leave you in awe of their hunting skills. They are truly one of our natural wonders.

Additional Readings:

Kingfishers, Bee-Eaters, and Rollers by C. Hilary Fry and Kathie Fry (1992) Princeton University Press; paperback edition published 1999.

Prose, B. L., "Habitat Suitability Index Models: Belted Kingfisher" (Fort Collins, CO: U. S. Fish and Wildlife Service, Habitat Evaluation Procedures Group, Biological Report 82, 1985), 22 pages.

Roger Tory Peterson, Editor, *Peterson Field Guide to Birds of North America* (New York, NY: Houghton Mifflin Company, 2008), 544 pages.

Internet URLs:

Hamas, Michael J., *Belted Kingfisher, Megascops alcyon*, (Ithaca, NY: Cornell University, Laboratory of Ornithology, [Birds of North America Online](http://bna.birds.cornell.edu/bna), 30-day Subscription for \$5.00, 2009), <http://bna.birds.cornell.edu/bna>

Kingfisher Vocalizations, Cornell Laboratory of Ornithology, www.allaboutbirds.org.

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