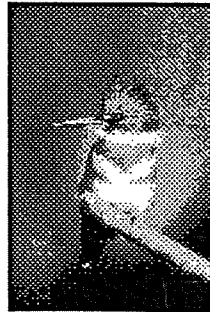
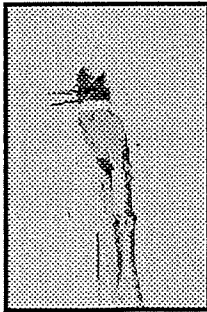


AN AMAZING RIVER ATHLETE THE BELTED KINGFISHER

There are many impressive athletes throughout the animal world and some particularly outstanding ones living along or in rivers. The otter, for instance, is fun to watch in a pond. It delights us with its power and agility underwater. However, even an otter may not be able to match the athletic power of its fellow river basin inhabitant, the belted kingfisher.

Food

Similar to otters, kingfishers eat mostly fish. Unlike otters, a kingfisher's size limits it to small to medium-size fish. Also, whereas an otter's body is safely supported by water during all of its underwater diving, twisting, and rolling, the kingfisher is exposed to danger in a great many of its dives through the air into the water.



Description

The belted kingfisher is a medium-large (ten to thirteen inches long) grayish-blue and white diving bird with a large head and a long, sharp, dark, thick bill.

On the top of the kingfisher's head, the gray-blue feathers form a ragged double crest, often with one "spike" of feathers toward the front and the other "spike" sticking out from the back of the head.

The kingfisher's back, wings, and tail feathers are also grayish-blue. It has a band of white feathers around the neck with a breastband of the blue feathers just below the neck band. The belly feathers are white.

The female has an additional band of rusty-red feathers across the belly; rust feathers also extend down the sides of her mid-section. (It is one of the few bird species in which the female is more colorful than the male.) The blue of its feathers is not as bright as a blue jay's, but the arrangement of the kingfisher's feathers gives it a more commanding presence.

Territorialism

In order to fish at all, a kingfisher must establish a territory around a lake, or pond, or along a river.

Along a river, a kingfisher's territory (usually a half-mile long) includes the river and the banks and vegetation (plants and trees) along both sides.

Kingfishers defend their territory from all other diving fishing birds, such as osprey, that might dive for the same kind and size of fish that the kingfisher eats. The kingfisher's fierce territorialism

protects its stretch of the river: if the kingfisher did not drive away all other competing birds, the river would soon be in short supply of small to medium-size fish. Thus, a section of river or other body of water claimed by a kingfisher is more likely to have a balance of all sizes of fish. The kingfisher's territorialism ensures that there will be small fish to grow into bigger fish to feed the larger animals.

Kingfisher versus Osprey

In the River-Lab Area of the Mill River in Fairfield, Connecticut, a kingfisher was observed attacking an osprey that had perched over a riffles section of the stream. Ospreys grow up to 24 inches long—almost twice the size of a kingfisher! The kingfisher kept up its attack of rapid dives at the osprey, chasing the intruder about a quarter of a mile up the river. The kingfisher's fearlessness in driving away fishing birds much larger than itself is one example of its athletic ability in the air. They even dive at fishermen!

Fishing Feats

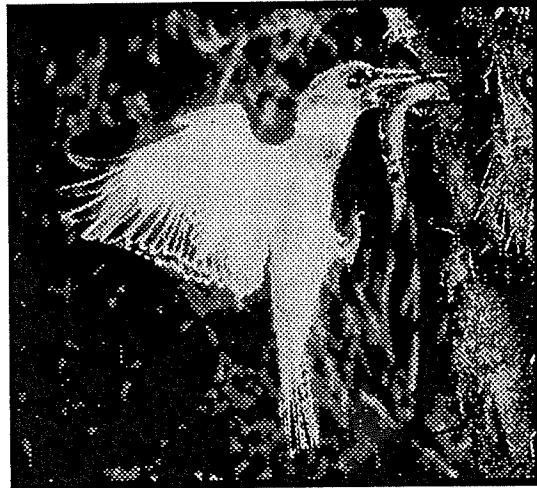
An even more startling indication of a kingfisher's exceptional coordination and athletic strength is its ability to dive headfirst straight down into a shallow brook from a tree branch or hovering position. Such an amazing dive requires the kingfisher to keep focused on the fish and judge how

far it will move and in what direction. The bird does not even go completely under water before it begins to pull its body out of the water with the fish in its beak. Such a coordination of focus, timing, and muscular strength requires highly developed skill and conditioning.

Muscle Power

The belted kingfisher's precision at catching fish is combined with enormous strength of its neck muscles (for diving through the water's surface) and wing and chest muscles (for flying). If you analyze a bird's wing, the wing feather tips are the "fingers". The rest of the wing is an adaptation of an arm from wrist to elbow to shoulder. As a kingfisher pulls out of the water from a dive, it folds its "elbows" up tightly behind its neck (Can you do that?). This gives the bird maximum muscle power to propel its body out of the water. Even its tail feather muscles give it a shove. Only extraordinary power of the wing and chest muscles

could allow a kingfisher to perform the perfect sequence of movements required in such a dangerous dive. A less well-adapted bird could end up with a broken neck instead of a meal!



Raising a Family

Kingfishers inherit instincts and physical traits that enable them to perform their fishing feats, but other demands also keep them fit. Two major demands are related to attracting a mate and raising a family.

Attracting a mate

A male belted kingfisher must demonstrate his fishing ability as well as his endurance and determination to a female kingfisher before she will accept him as a mate. He persuades her by spending as much as two days



catching fish and dropping them at her feet. The female eventually indicates acceptance of the male by picking up the fish. When this happens, the male kingfisher celebrates his success with a triumphant display of aerial acrobatics, accompanied by his

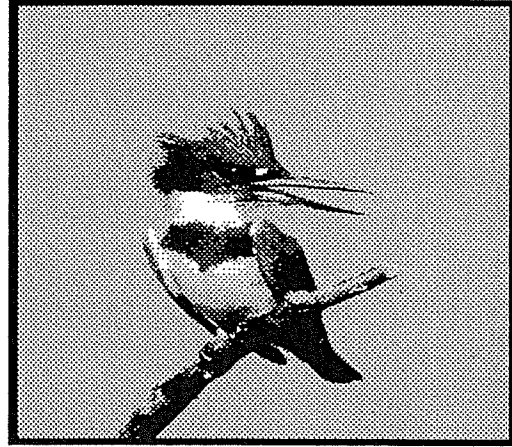
raucous, rattling cries. He has won a mate by convincing her that he is

Nest Building

Male belted kingfishers are tested by female kingfishers for good reason. A mate of this species also needs fearless persistence, strength, and agility to protect his family. Once mated, a pair of kingfishers will take turns using their large bills and small feet to dig a tunnel, from three to seven feet long, straight back into a steep river bank that is well above the water level. (A kingfisher tunnel forty feet above the water is not unusual.) The tunnel opening is usually about a foot down from the top of the bank. This seemingly safe location is still not secure from occasional visits by rats, snakes, or raccoons. In a widened nest area at the far inner end of this tunnel, the female kingfisher tends five to eight (or more) pure white eggs for about three weeks, until they hatch. If a snake, rat, or raccoon reaches the tunnel entrance, the male's only way to defend his family is by risking his life. He does so by placing himself at the tunnel opening and moving in ways to attract the predator away from the nest hole. This brave defense does not always work. Rats can also dig down from the top of the bank into the nest tunnel below. The chances

a good fisher, able to provide enough food for his family.

of an entire nest of kingfisher chicks surviving are low.



Young Kingfishers

Kingfisher chicks remain in the nest for four weeks after hatching. The parents take turns bringing fish back to the chicks and the chicks take turns coming to the tunnel opening to be fed. Young kingfishers require as many as eight to eleven minnows a day! (It is a good thing the female takes her time choosing a mate that can provide for a family.) If young kingfishers are not strong enough to fly when they leave the nest, they may drown in the water below. Those that are strong enough learn how to fish during the end of the summer, when the river is usually low. At the start of fall, the parents chase them off to find their own territories.

Amazing Athlete

The kingfisher's diving ability—its marvelous adaptation for getting its food—leads to its most important contribution to the system: controlling fishing in its territory. This control helps maintain balance in the fish population. This balance ensures that there will be enough fish for the kingfisher **and** the bigger birds and animals in that part of the basin. Other valuable contributions are enrichment by its wastes, improving prey populations, and providing food (many eggs and young that become part of the basin's food web).

Without its special athletic ability this bird would not be able to make these contributions to the basin system in which it lives.

BELTED KINGFISHER

1. Of all the unique features of a belted kingfisher presented in this article which one do you think is most extraordinary?

2. Describe what a belted kingfisher has to do to catch a fish in shallow water?

3. What could happen to the kingfisher if the kingfisher could not perform in this way?

4. Which of the kingfisher's muscles do you think are most important for its fishing dives?

5. Explain the following statement from the last section of the article, AN AMAZING RIVER ATHLETE, THE BELTED KINGFISHER: "The kingfisher's diving ability—its marvelous adaptation for getting its food—leads to its most important contribution to the system: controlling fishing in its territory." Include reference to the different kinds of contributions this kingfisher makes to its system.

6. What other characteristic(s) of this bird do you find impressive or interesting?

7. Have you ever seen a live kingfisher? Would you like to see one? Where could you possibly see a kingfisher in the town where you live?

Challenge question:

Why is the belted kingfisher called “belted”? Why is the name not a perfect choice? Explain.
