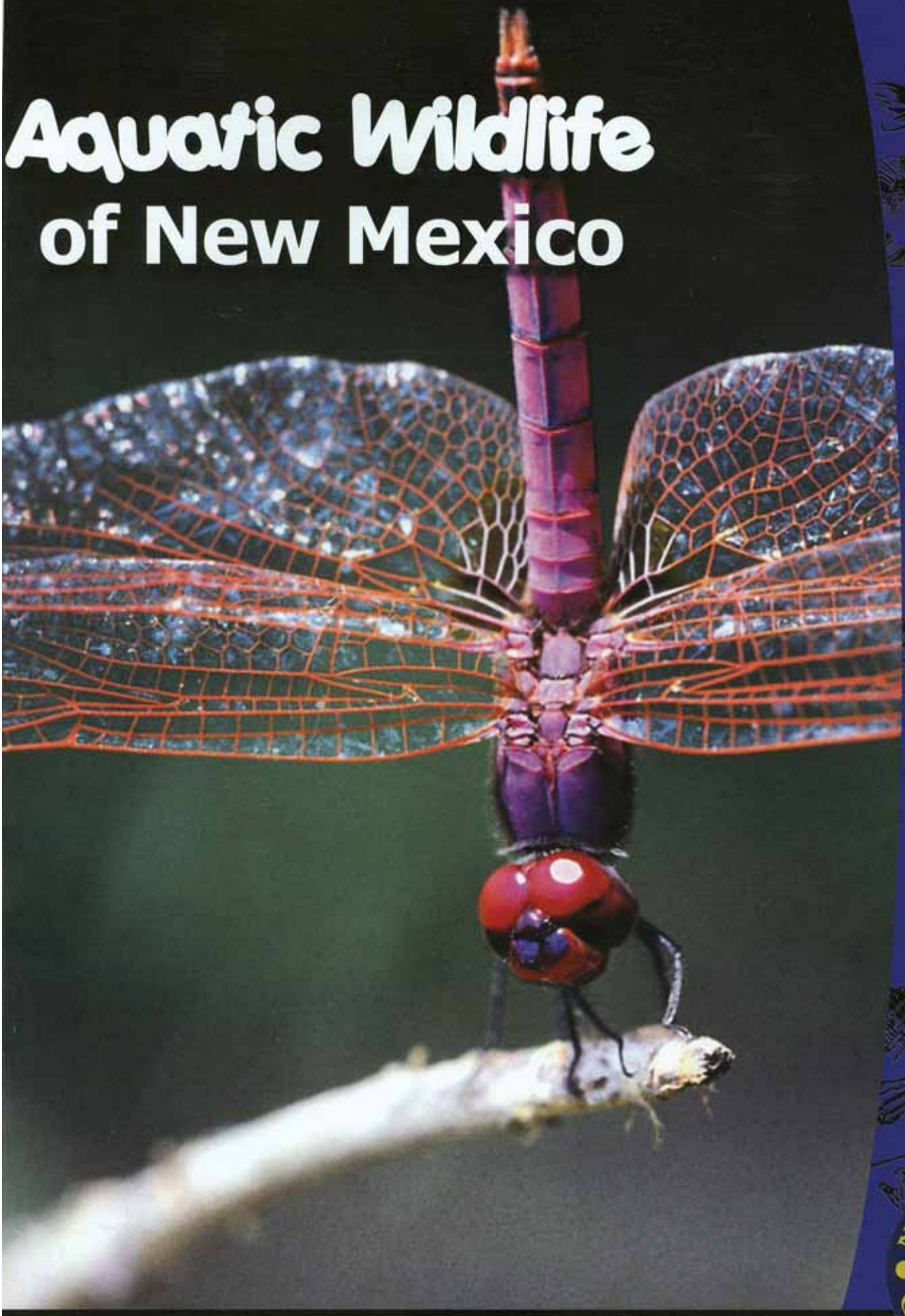
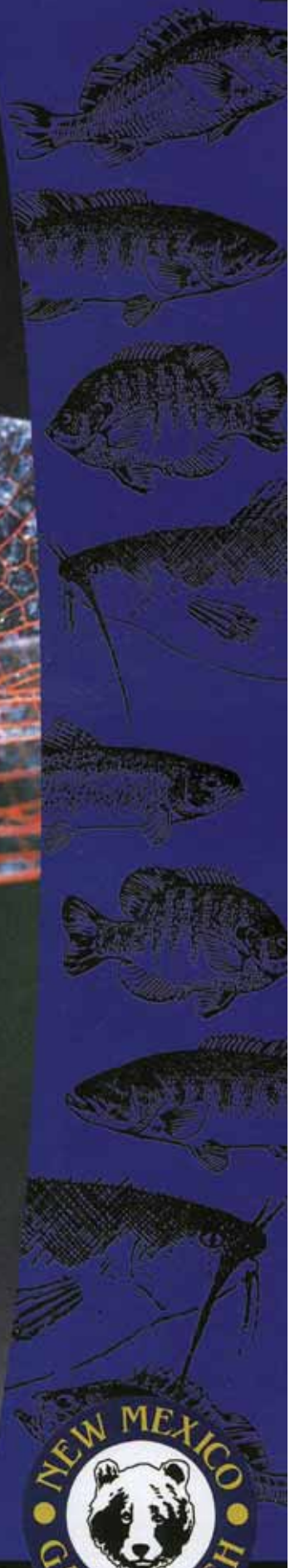
CONSERVATION EDUCATION

Aquatic Wildlife of New Mexico





NEW MEXICO GAME & FISH

www.wildlife.state.nm.us

TEACHER'S GUIDE

New Mexico's natural heritage includes a rich variety of wildlife, their habitats, and their larger ecosystems. This includes the living and non-living parts, such as clean air and water. Our aquatic habitats are a magnet for people and wildlife. As the population of New Mexico continues to grow, the human use and management of these aquatic areas and water resources is increasingly a focus of discussion and debate.

Water is life. In a dry state like New Mexico, water is especially critical for both people and wildlife. Both are attracted to and dependent on the state's limited water resources. Clean, fresh water is scarce. Over 99 percent of the world's water is either salt water or frozen in ice as part of the polar caps. Only 0.009 percent of the world's water is found in lakes, ponds and rivers.

In a land of little water, life concentrates where there is moisture. Water and its surrounding plants create a special type of habitat known as the riparian habitat or zone. A habitat is where an animal lives and is made up of the basic components of food, water, shelter and space. A riparian habitat is a very distinctive plant community adjacent to water, such as streams, springs, rivers, ponds or lakes. These areas are identified by the presence of vegetation that requires large amounts of free or unbound water. Riparian plants are uniquely adapted to live in or slightly upland to these wet areas. Communities of aquatic plants include those emerging from the water, floating-leaf and submerged plants. Examples of riparian habitat include the Rio Grande bosque, high mountain streams, playas, marshes and lakes surrounded by willows or cottonwood trees.

Riparian areas provide many wildlife species with their habitat needs. Riparian areas often have a higher diversity of plants and animals than surrounding areas as they offer more food, water and shelter. Even though riparian areas make up only 2 percent of the land mass of New Mexico, over 80 percent of the state's 687 vertebrate species depend on riparian areas for at least part of their lives. Over 70 percent of New Mexico's threatened or endangered species use riparian areas. Riparian areas are very fragile and are easily affected by natural or human-caused destruction. When people or livestock (or even wildlife) misuse a riparian area it can result in destruction of vegetation, erosion of streambanks, muddy water, increased water temperatures and loss of the use of that area by wildlife.

Global climate change is also increasingly being recognized as a potentially serious threat to many species of wildlife. A major concern in New Mexico is that global climate change will increase the severity and length of drought conditions. It also has the potential to increase the frequency and intensity of severe weather events such as damaging thunderstorms. Anything that affects the quality and quantity of water provided to wildlife and human communities is of concern to us all.

Riparian areas provide us many benefits besides offering habitat for wildlife. A healthy riparian system offers lots of free services including: slowing down the movement of water through an area, reducing flood damage and filtering sediment from the water, protecting fish habitat and water quality. They also do a fantastic job of storing water in the plants and soil and releasing it more slowly throughout the summer.

Riparian areas also have aesthetic, ecological, economic and recreational value. Many of us are drawn to our New Mexico oases of lakes, rivers, streams and wetlands to relax and enjoy the outdoors. Riparian areas are also critical for sustaining sport fish populations. They provide shelter and food for many species of fish at critical stages of their lives. Economically, anglers contribute over $175 million each year to New Mexico's economy.

Range maps indicate where animals can be found in New Mexico within the appropriate habitat.

This coloring book is part of many activities and programs offered through the Conservation Education Section- Project WILD. Project WILD is an award-winning environmental and conservation education program of instructional workshops and supplementary curriculum materials for teachers of K-12. Project WILD helps prepare teachers and students to make responsible, informed decisions for wildlife.

For more information on Project WILD and free workshops and materials on wildlife contact: Project WILD Coordinator, POB 25112, Santa Fe, NM 87504. (505) 476-8000. Or visit our website www.wildlife.state.nm.us

AQUATIC WILDLIFE OF NEW MEXICO

A Coloring Book
by
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Special thanks to New Mexico Department of Game and Fish staff, **Charles Painter** and **Jim Stuart**, **Lance Tyson** and **Hira Walker** for their assistance with maps and technical review.

As the state wildlife agency, the Department of Game and Fish provides wildlife education materials and workshops to the public.

Sport Fish Restoration Act

A 10 percent federal excise tax on your purchase of fishing equipment and motor boat fuel helps states sustain sports fisheries. This includes acquiring easements or leases for public fishing, funding hatchery and stocking programs, improving boating facilities for anglers and supporting aquatic education programs and materials like this coloring book.

Graphic design by **Lance Cherry** and **Leslie Coleman**
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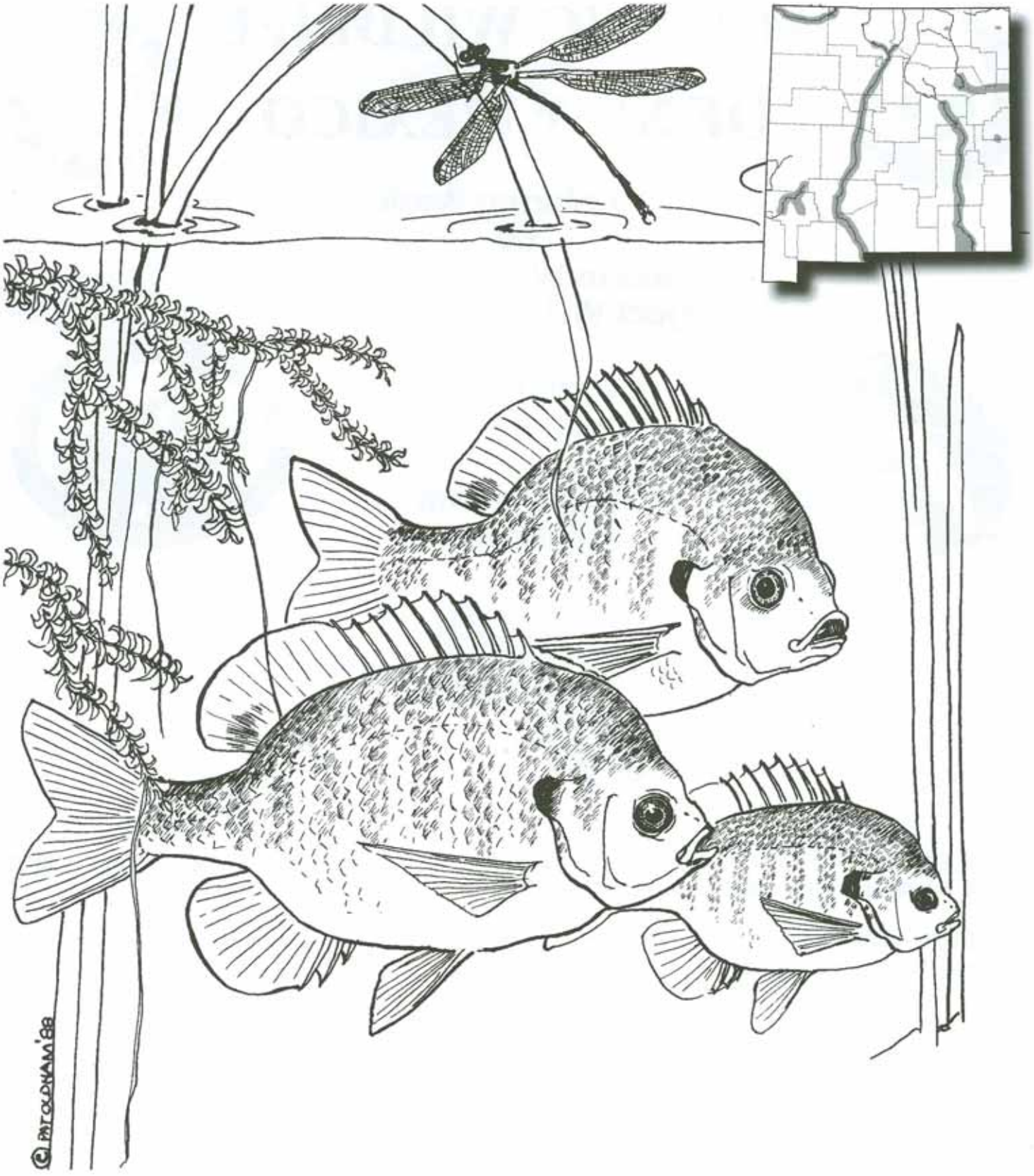
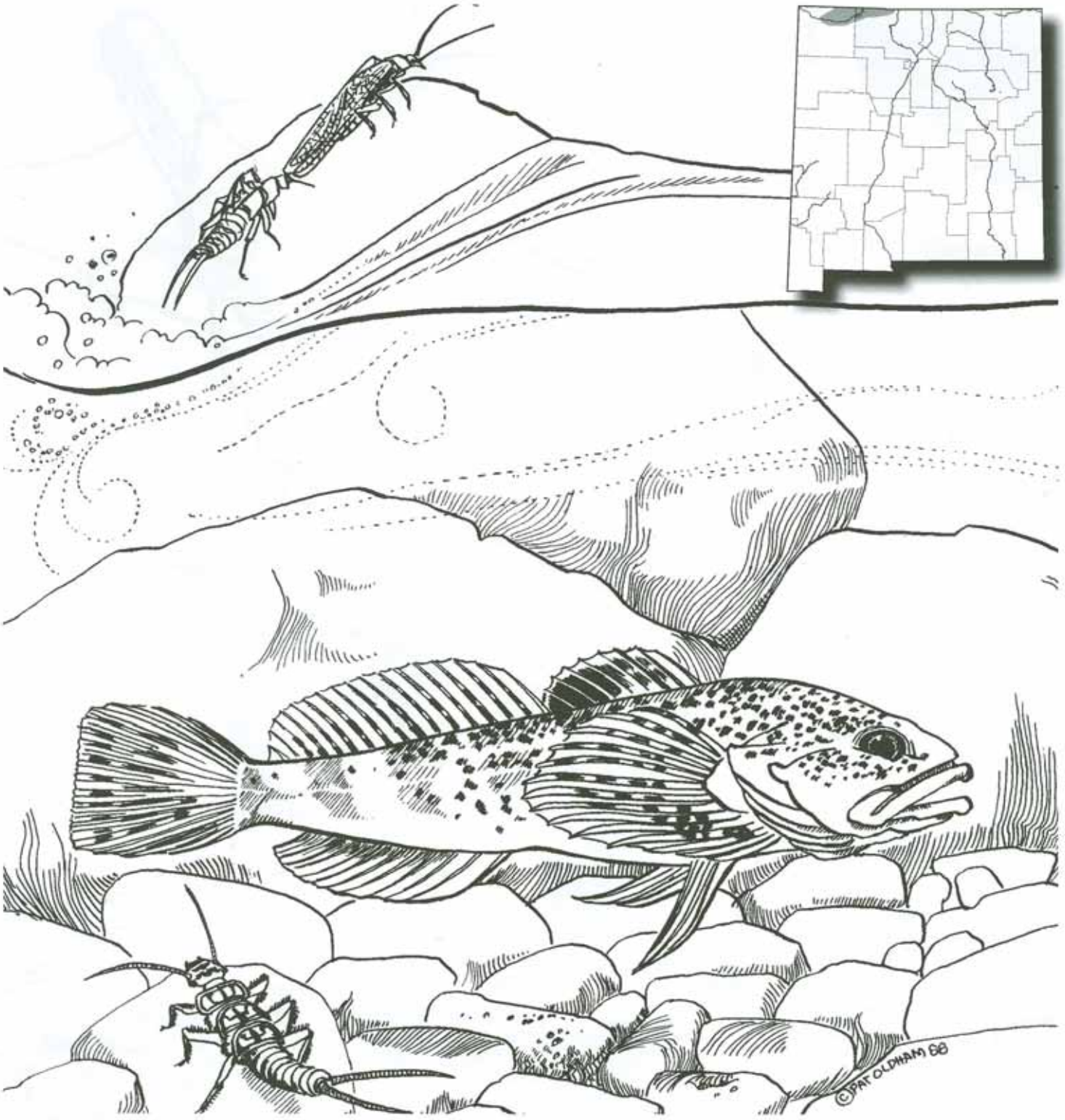


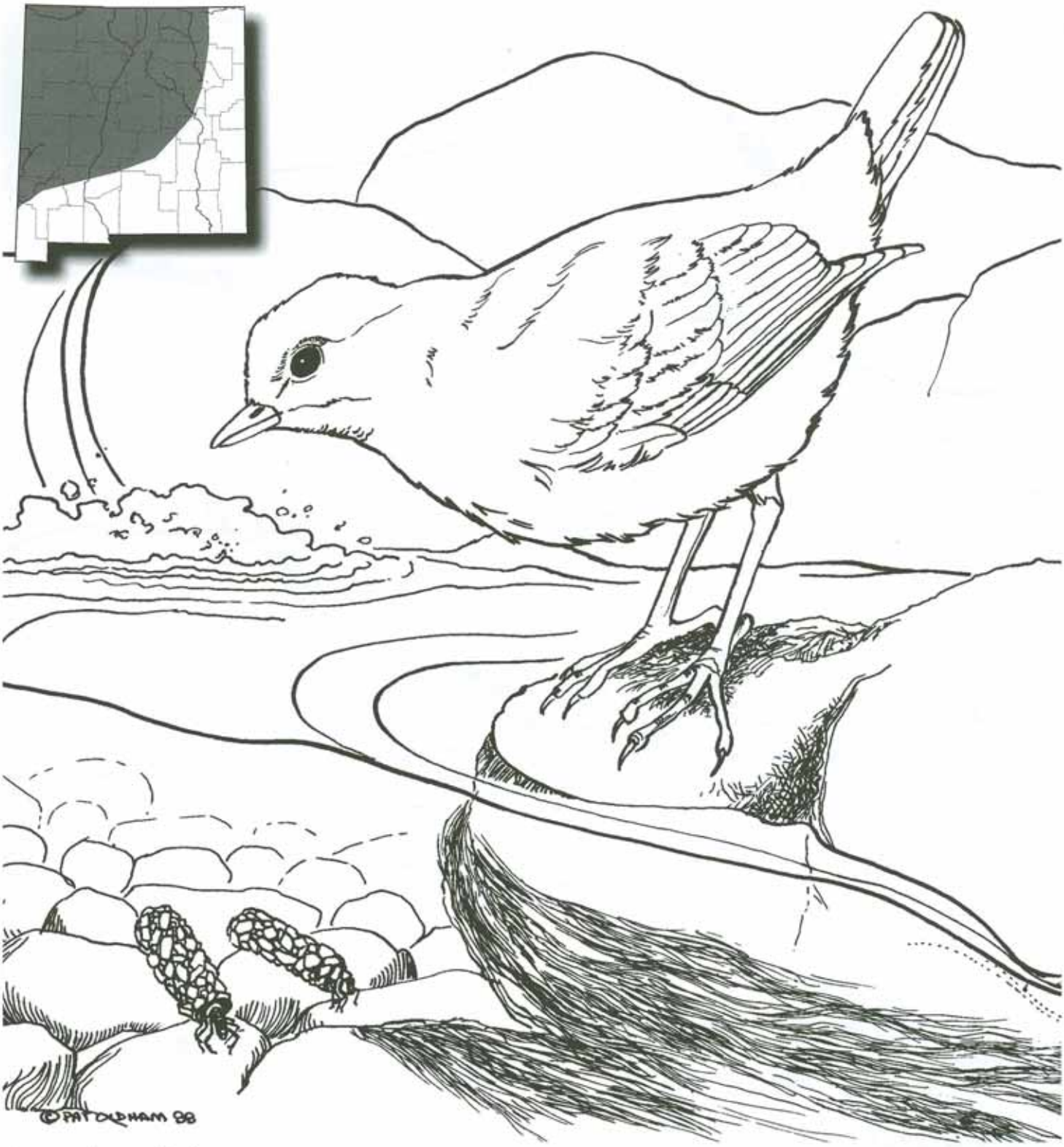
Bluegill

Colorful bluegills are 5-7 inches in length and live together in 'schools' in almost any of New Mexico's warm waters. During the summer, bluegills lay their eggs in shallow underwater holes. The holes are scooped out and then guarded by the males. Male bluegills make grunt like sounds to attract females to these nests, which are usually found in groups. This *native species* was transplanted throughout New Mexico in the 1930's.



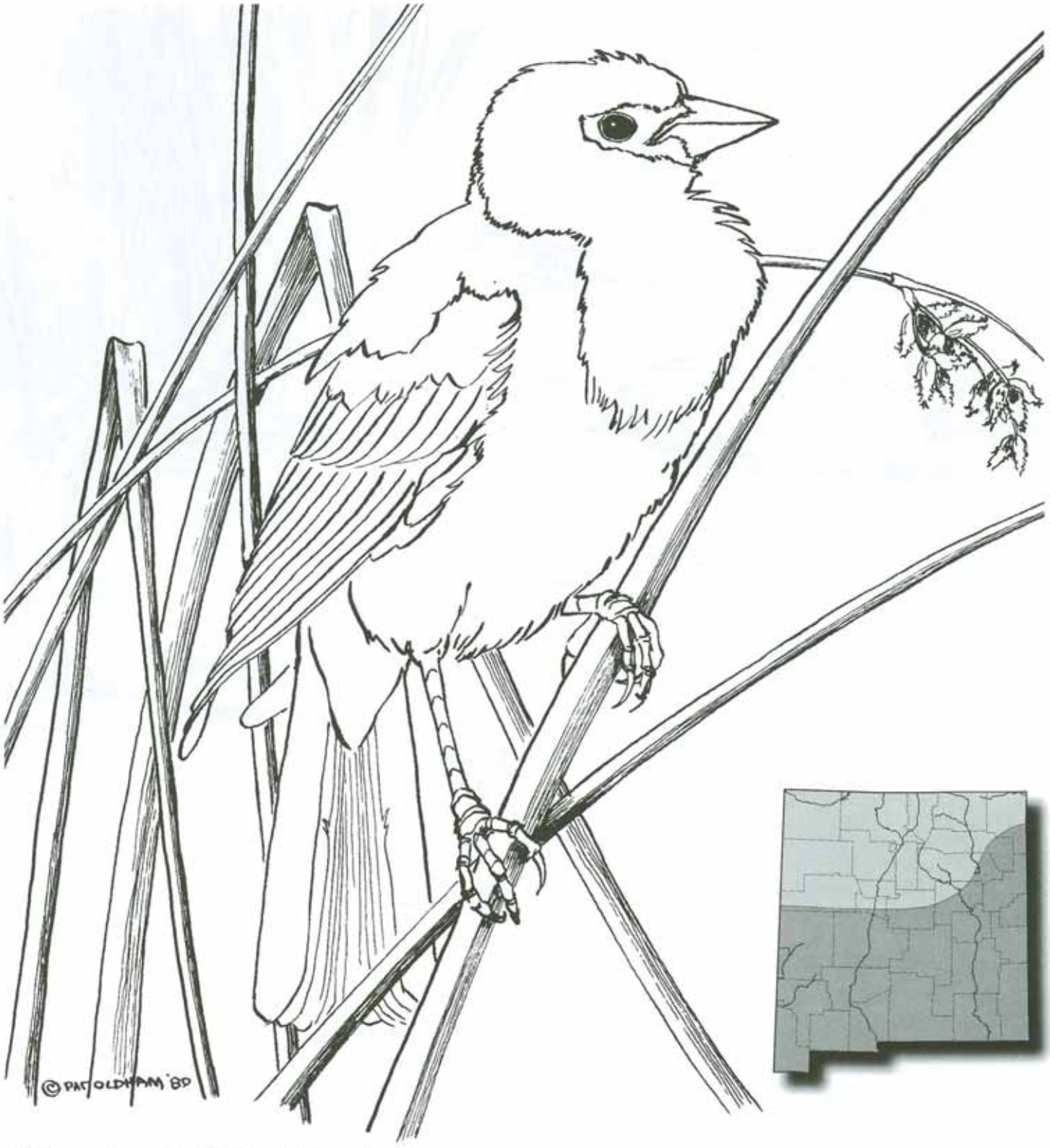
Mottled Sculpin

The mottled sculpin can be separated from all other fish species in the state by its nearly scaleless body and broad, flat head with small eyes. This unusual looking fish spends much of its time on the bottom of cool streams and lakes. The sculpin feeds at night among the rocks at the bottom, searching for insects, invertebrates and plant material. During *spawning*, females lay their eggs in nests made among the gravel bottom. Males are known to be cannibalistic, sometimes eating smaller females. Beneath the sculpin shown above is a stonefly. These aquatic insects are an important food source for fish and an important indicator of cold, clean, high quality water. This fish is native to the San Juan River basin, including Pine, Navajo, Animas and San Juan rivers upstream from Shiprock.



American Dipper

This songbird is commonly seen along rushing mountain streams searching for aquatic insects, such as this caddisfly larvae. Dippers get most of their *prey* from the water. They stride along the bottom completely submerged and 'fly' underwater using powerful beats of their wings as they search for food. They can do this even in streams where the current is too fast or deep for people to stand. Their feathers are very soft and dense and they have much larger oil glands than other songbirds to help keep them dry. Dippers like to build their nest behind waterfalls or on rocks in midstream. Their name comes from their almost constant 'bobbing' movement.

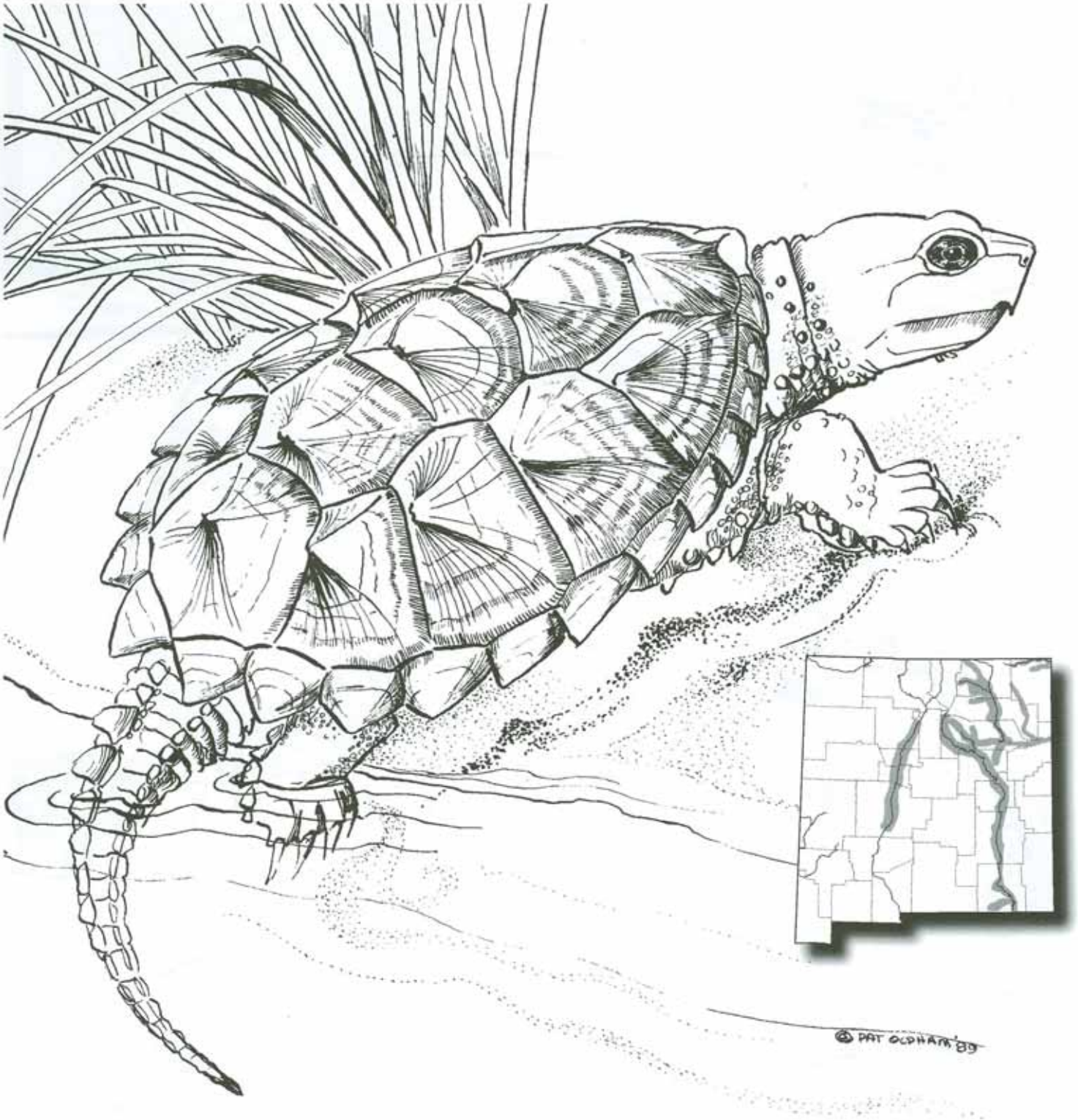


Yellow-headed Blackbird

A bright yellow head makes the male of this species easy to identify. The yellow-headed blackbird prefers to live in freshwater marshes or reedy lakes. During the breeding season, the male will 'display' by spreading his tail, half-opening his wings, leaning forward and singing. His hope is to attract females while driving other males away. The female constructs a nest in the marsh over open water. The nest is unusual in that it's made out of wet vegetation so that it shrinks as it dries drawing the nest supports together. During the winter, yellow-headed blackbirds join in enormous mixed flocks of grackles, red-winged blackbirds and cowbirds.

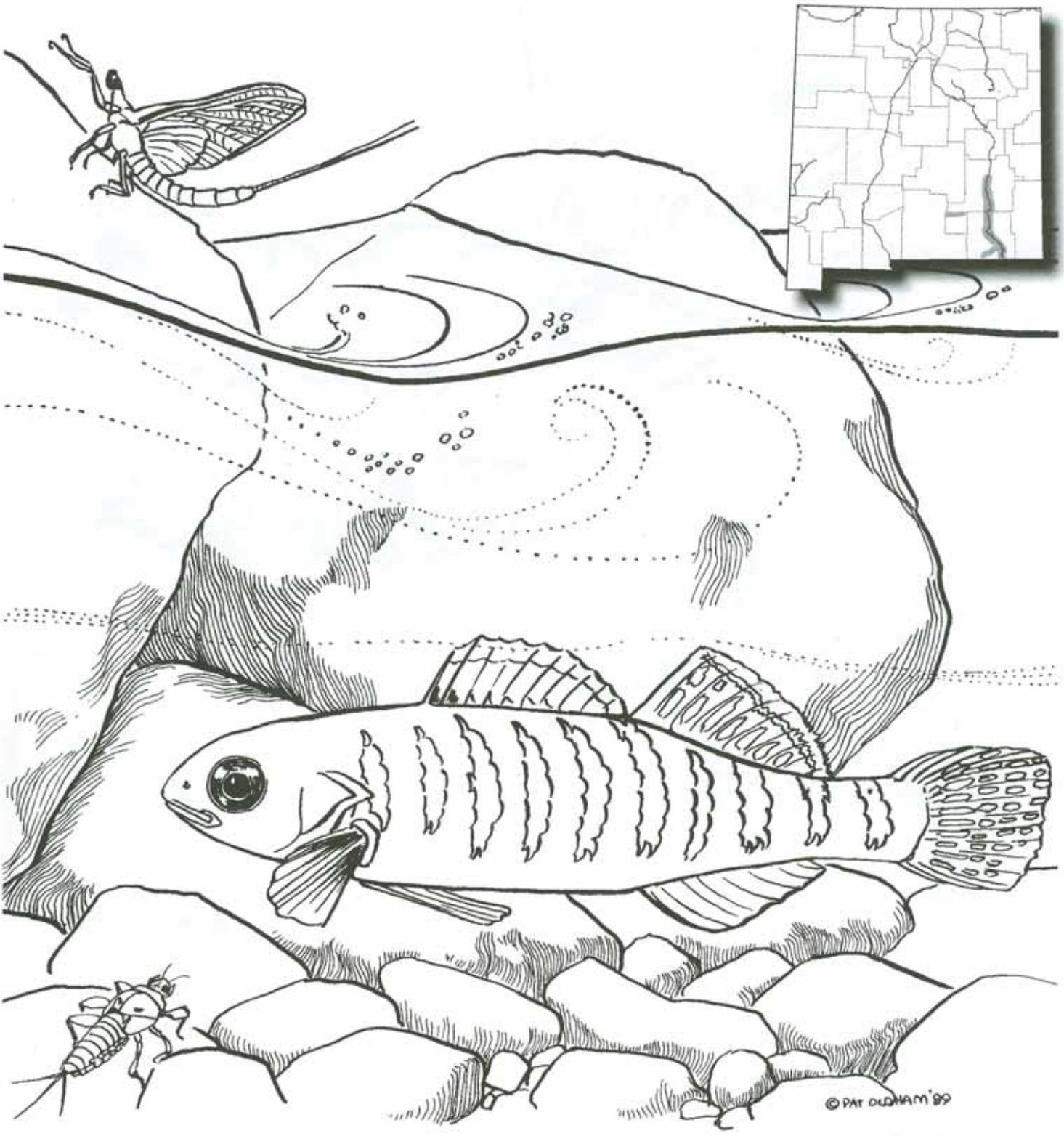
Checkered Garter Snake

Basically, a Mexican and southwestern US species the checkered garter snake does not range much further north than New Mexico. It is most often found in or near wet habitats like rivers, streams, marshes and irrigation ditches. Although generally considered harmless, it may bite and excrete a foul-smelling substance when handled. Females give birth from June to October to 5 to 25 live young. Favorite food sources include frogs (such as the leopard frog shown here), toads, fishes, salamanders, lizards, slugs and earthworms. There are seven other species of garter snakes that live in New Mexico in a variety of habitats.



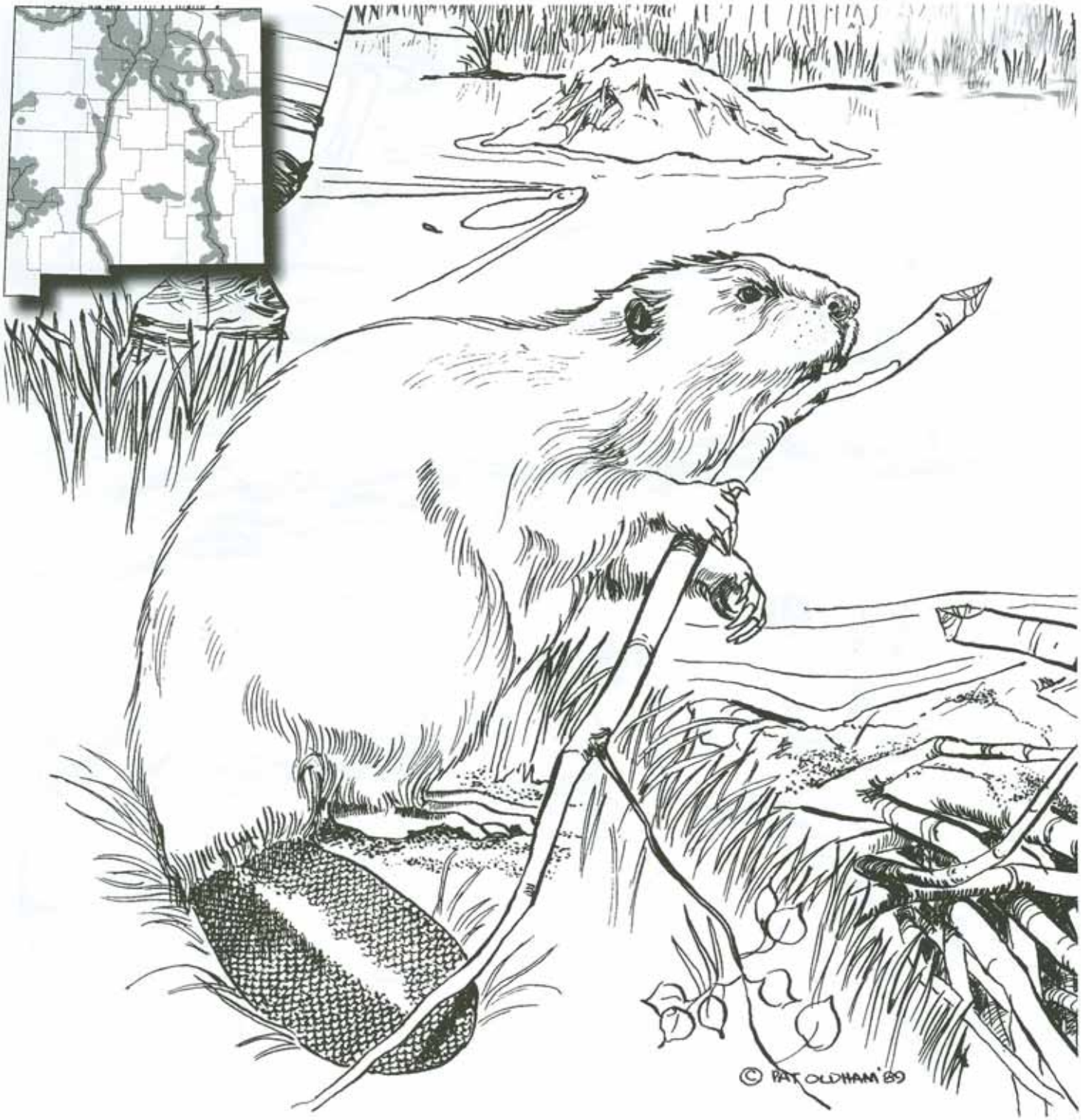
Snapping Turtle

The snapping turtle lives in slow-moving rivers, shallow ponds and muddy-bottomed lakes. One of New Mexico's most aquatic turtles, it spends considerable time lying on the bottom only rarely coming ashore to bask in the sun or lay eggs. Although it appears to move slowly, it can bite with lightning speed and its strongly hooked jaws are capable of tearing flesh. Snapping turtles' massive, well-developed limbs have long claws that can produce deep cuts. Snapping turtles are potentially dangerous and should not be handled. They eat both plants and animals including fish, frogs, mammals, insects and even ducklings! Females lay eggs around six years of age in New Mexico and they may live up to 47 years. Whether the eggs hatch out mostly as male or female depends on the temperatures surrounding their nests.



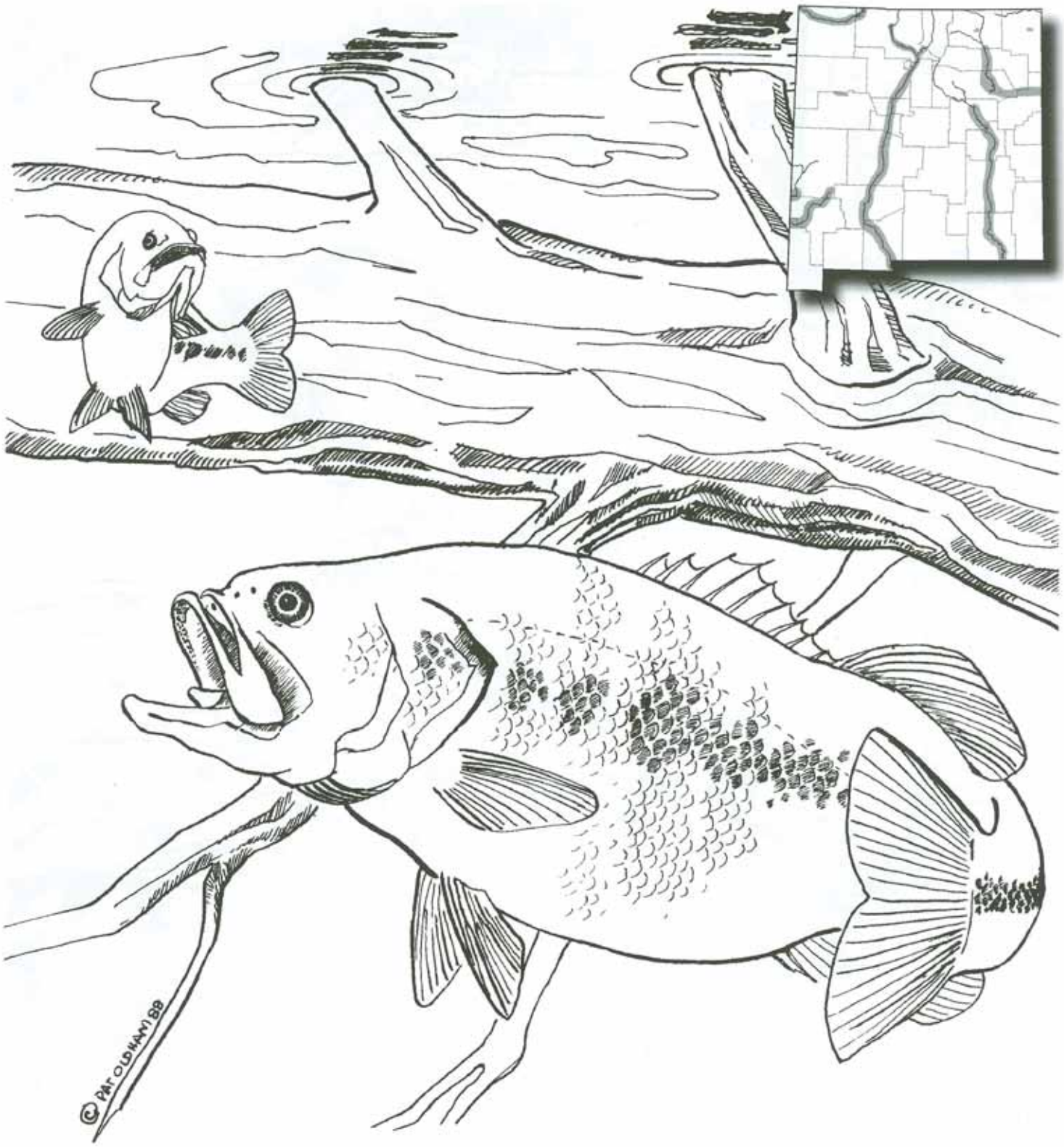
Greenthroat Darter

The greenthroat darter is a very colorful fish. Reaching only about two inches, it lives in swiftly flowing streams or springs that have gravel bottoms. Native to the Pecos River drainage of Chaves and Eddy counties, it feeds on small crustaceans, insects and algae. The greenthroat darter is currently classified in New Mexico as *threatened*. The main threats to its *population* is *sedimentation* of streams, lowering of the water table, irrigation practices and *exotic* predators. Aquatic species such as this mayfly nymph (bottom of stream) and the mayfly adult (above water level) are food sources within the aquatic food web and are indicators of clear, cool water.



American Beaver

Once almost extinct in North America, the American beaver has made a dramatic comeback and now is found frequently throughout forested streams, rivers and *wetlands* of New Mexico. The largest rodent in North America, it is well known for its dams which can be over 6 feet high and hundreds of feet long. Dams provide protection and access to their food supply of leaves, twigs, buds, sedges and bark. Dams also assure that any winter ice will not reach all the way to the bottom. Since beaver do not hibernate, they have to collect enough food to eat during the winter. They may build a lodge but can also dig a den into the side of the riverbank. Beaver have a thick waterproof coat and oversized lungs allowing them to remain underwater for up to 15 minutes. Beavers mate for life, which can be as long as 20 years.

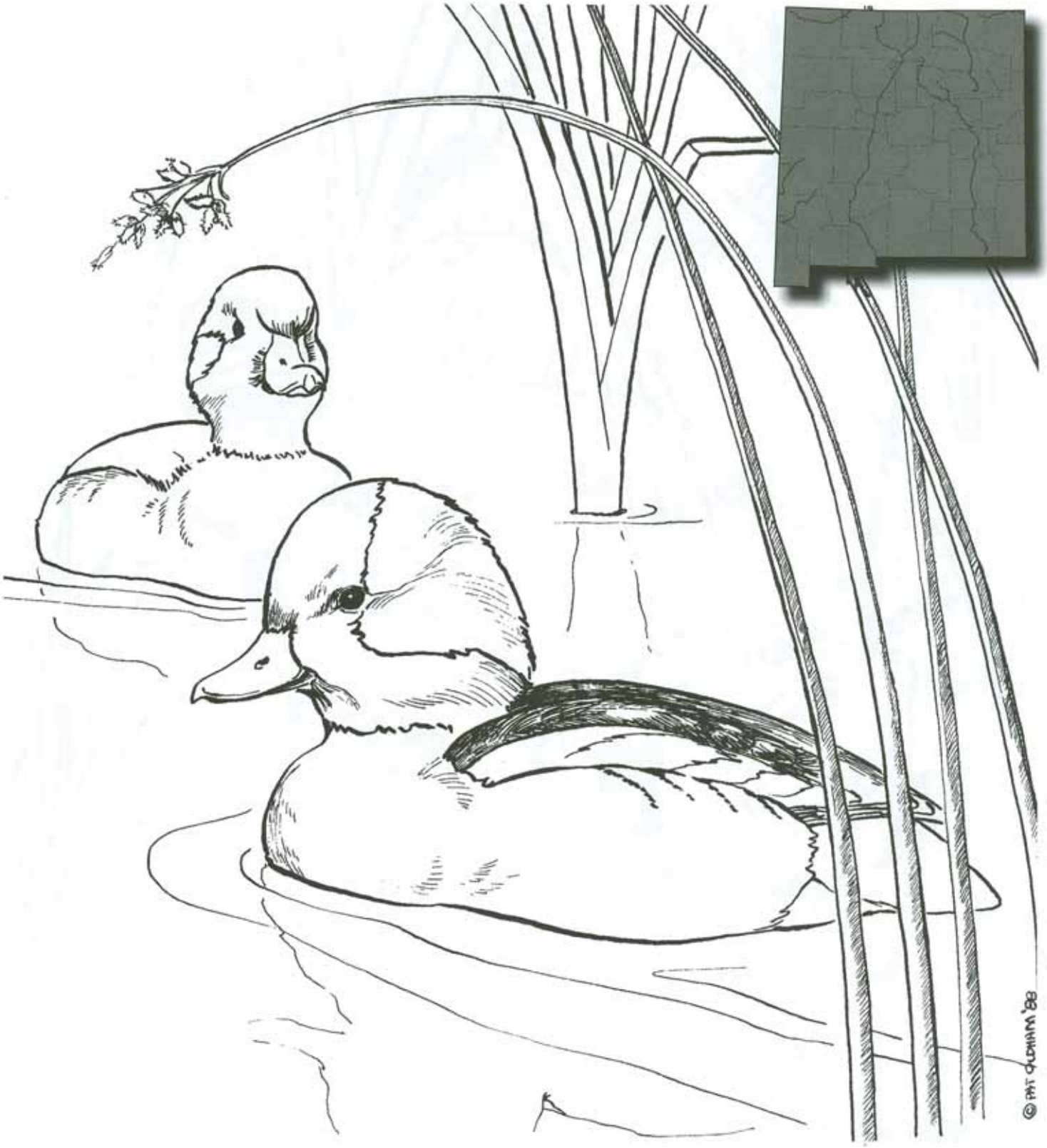


Largemouth Bass

This large-mouthed fish lives in many types of water habitats, but it prefers quiet warm rivers, lakes or ponds. It is seldom found in water deeper than 18 feet. During breeding season, largemouth bass males are very protective of their underwater nests, not letting other males come near them. They are eager to attract females, however, which they do by special behavior and color pattern displays. A *predatory* fish, they only have to get close to smaller fish and then open their mouths, and expand their gills, causing a great inrush of water. The prey is then sucked into their mouth along with the water. Good waters to find this fish in New Mexico include Abiquiu Lake, Bitter Lakes, and Navajo Lake.

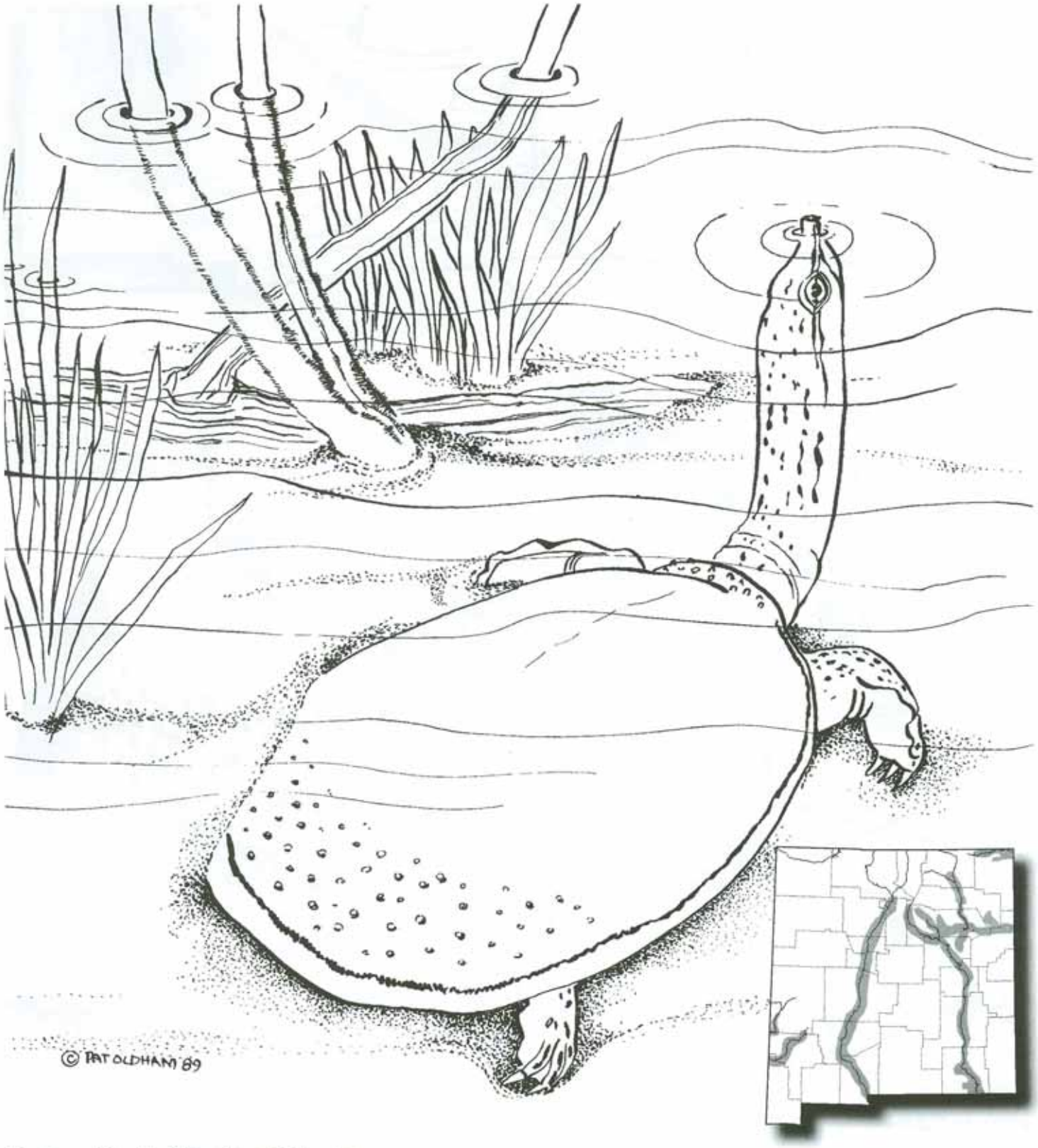
Woodhouse's Toad

An active toad by night, the Woodhouse's toad likes to live along sandy riverbanks, marshes, irrigated areas and near permanent water. The Woodhouse toad may often be found feeding in gardens and beneath street lights on warm summer evenings and along road ways on summer evenings. This is a large toad with a light stripe down its back and dark spots that contain three or more warts. Its call, a nasal w-a-a-a-h, sounds like the bleat of a sheep or a baby's cry. All toads and frogs produce poison from special glands found just behind the eyes, known as parotid glands. The poison is used to defend themselves from predators; however, most are not dangerous to humans. Woodhouse toads eat many kinds of insects and spiders, sometimes eating as much as two-thirds of their own weight in one day.



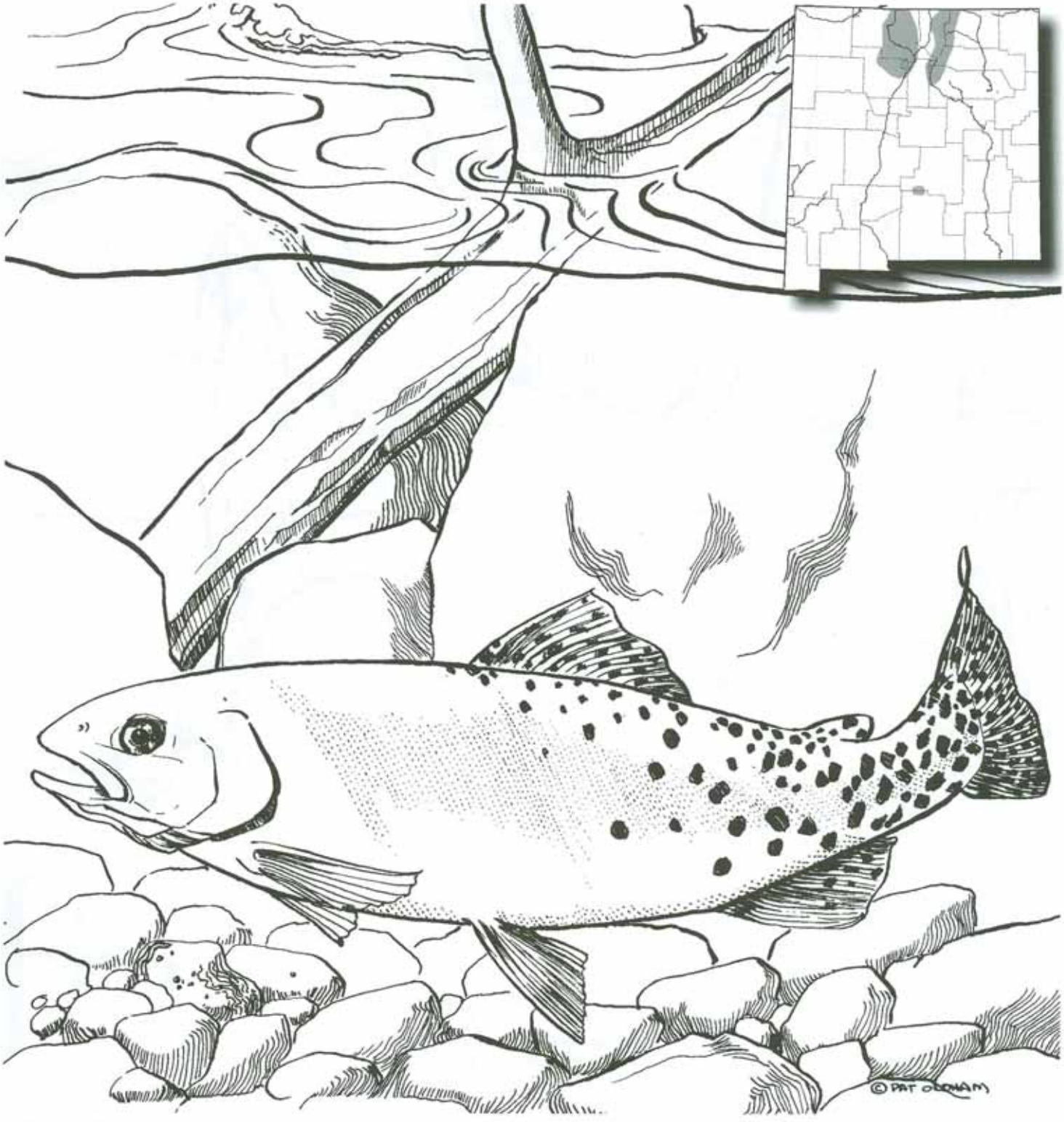
Bufflehead

The Bufflehead's name comes from 'buffalo-head', since this duck has a very odd puffy head compared to its small body. It has beautiful green- and purple-glossed black feathers. The bufflehead nests in hollow trees along lakes and streams primarily in Canada and Alaska. It is small enough to be able to use old nest holes of northern flickers. In New Mexico, buffleheads are commonly seen on lakes and reservoirs during the fall and winter as these ducks leave the colder weather of the far north. Buffleheads are quite tolerant and when flushed they often circle back to settle in their original places. Their favorite foods are small fish, mollusks, snails and crustaceans.



Spiny Soft-Shelled Turtle

Primarily a river and stream-dwelling species, the spiny soft-shelled turtle likes to live in soft bottomed, quiet waters. This turtle obtains its name from the tiny spines on the forward edge of the upper shell. The Spiny Softshell is difficult to approach and fast-moving on land and in water. Although it is fond of basking on banks or floating logs, it seldom leaves the water except to lay eggs in nests underground. Its favorite foods are a wide variety of *aquatic invertebrates*, especially crayfish. It also eats fish, frogs and reptiles. The spiny soft-shelled turtle has excellent eyesight and is capable of striking quickly and accurately for its food.

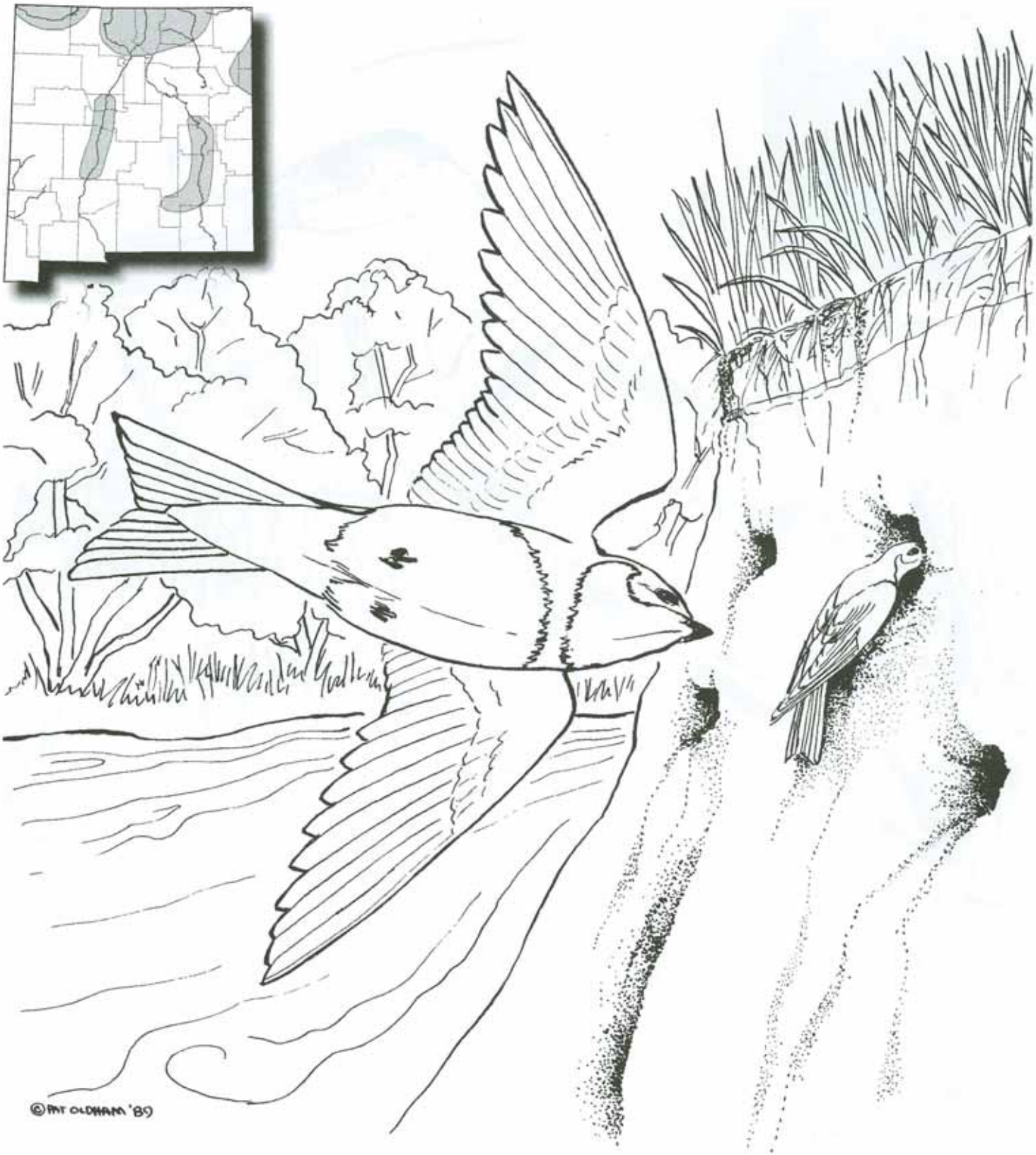


Rio Grande Cutthroat Trout

Our New Mexico State fish, the Rio Grande cutthroat trout was once much more widespread and abundant. Yet, today, it lives only in isolated, *headwater streams*. The Rio Grande cutthroat trout, one of two native trout in New Mexico (the other being the Gila trout) is found in small, swift-running, cold streams. Able to live only in the very cleanest of waters, it faces threats from hybridization (mating) with non-native rainbow trout. Other threats include livestock overgrazing and trampling of the banks, which results in muddy water. Cutthroat trout like to eat stoneflies, mayflies and caddisflies. Females lay between 200-4,500 eggs between March and July on a gravel nest in flowing water. The Department is striving to make the Rio Grande cutthroat a major component of the state's trout *fishery*.

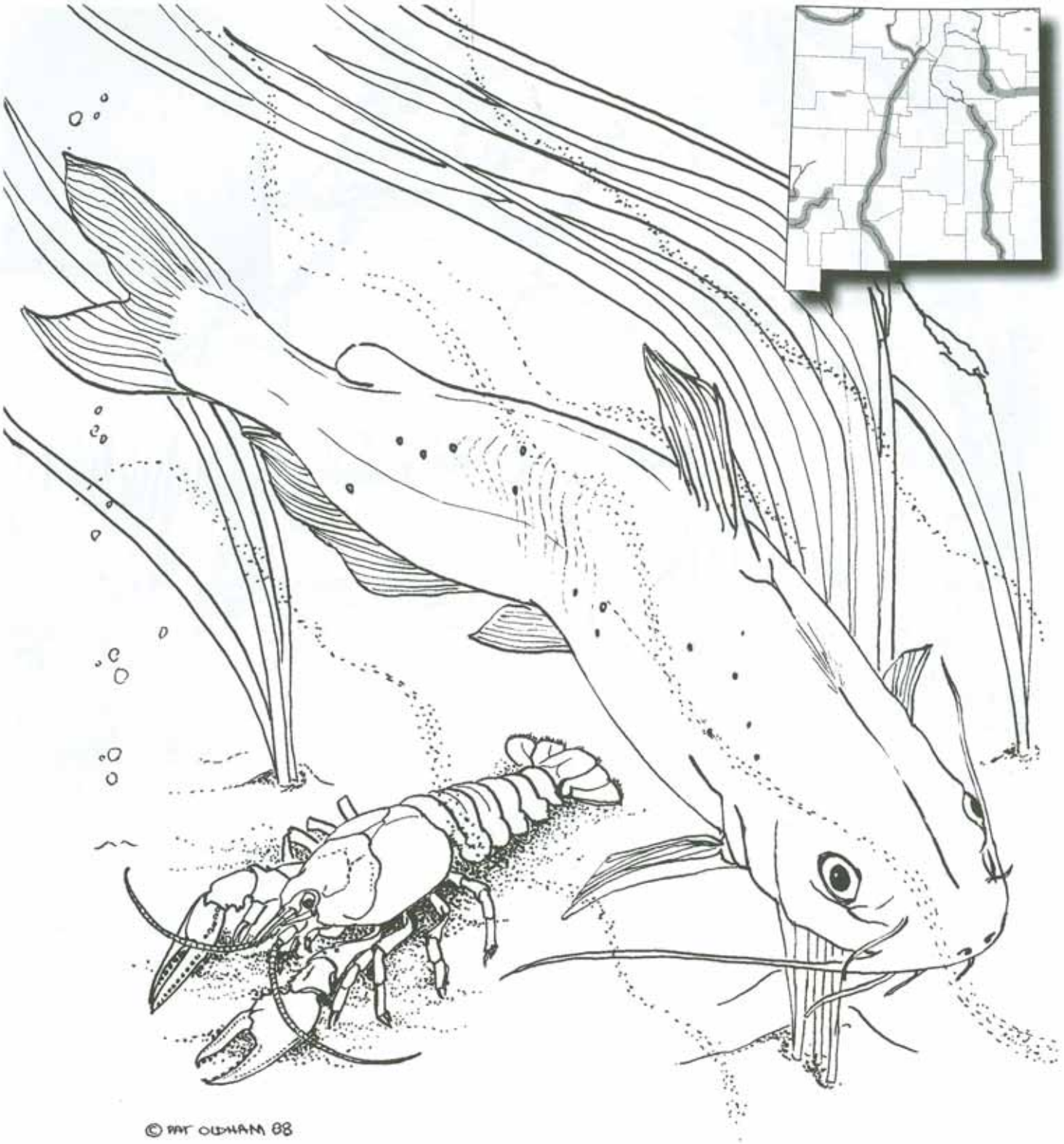
Great Blue Heron

Largest of the herons, this stately bird may be seen slowly stalking its prey along the edge of lakes, ponds and rivers. It is a patient and disciplined hunter, standing still for long periods of time, until an unwary frog surfaces. Its sharp beak is its tool for the hunt, enabling this water bird to eat small fish, water insects, frogs, reptiles, amphibians, snakes, small birds and crayfish. During the great blue heron's breeding season, more than a hundred pairs may be found nesting together in a colony called a heron 'rookery.' The female lays three to seven eggs in April or May, preferring to nest in old-growth cottonwoods. Highways, reservoirs and residential construction continue to present problems for the heron's habitat needs of shelter and space.



Bank Swallow

These insect-eating birds catch food almost entirely in the air rarely feeding on the ground. Bank swallows excavate their own nest sites in streams or riverbanks. They may use a deserted kingfisher burrow for nesting as well. Nests are abundantly lined with feathers and some grass. In their courtship flight the male and female may actually pass a feather between them and then mate in their burrow. After the breeding season hundreds may roost and feed together. Summer residents of New Mexico, bank swallows winter in South America east of the Andes.

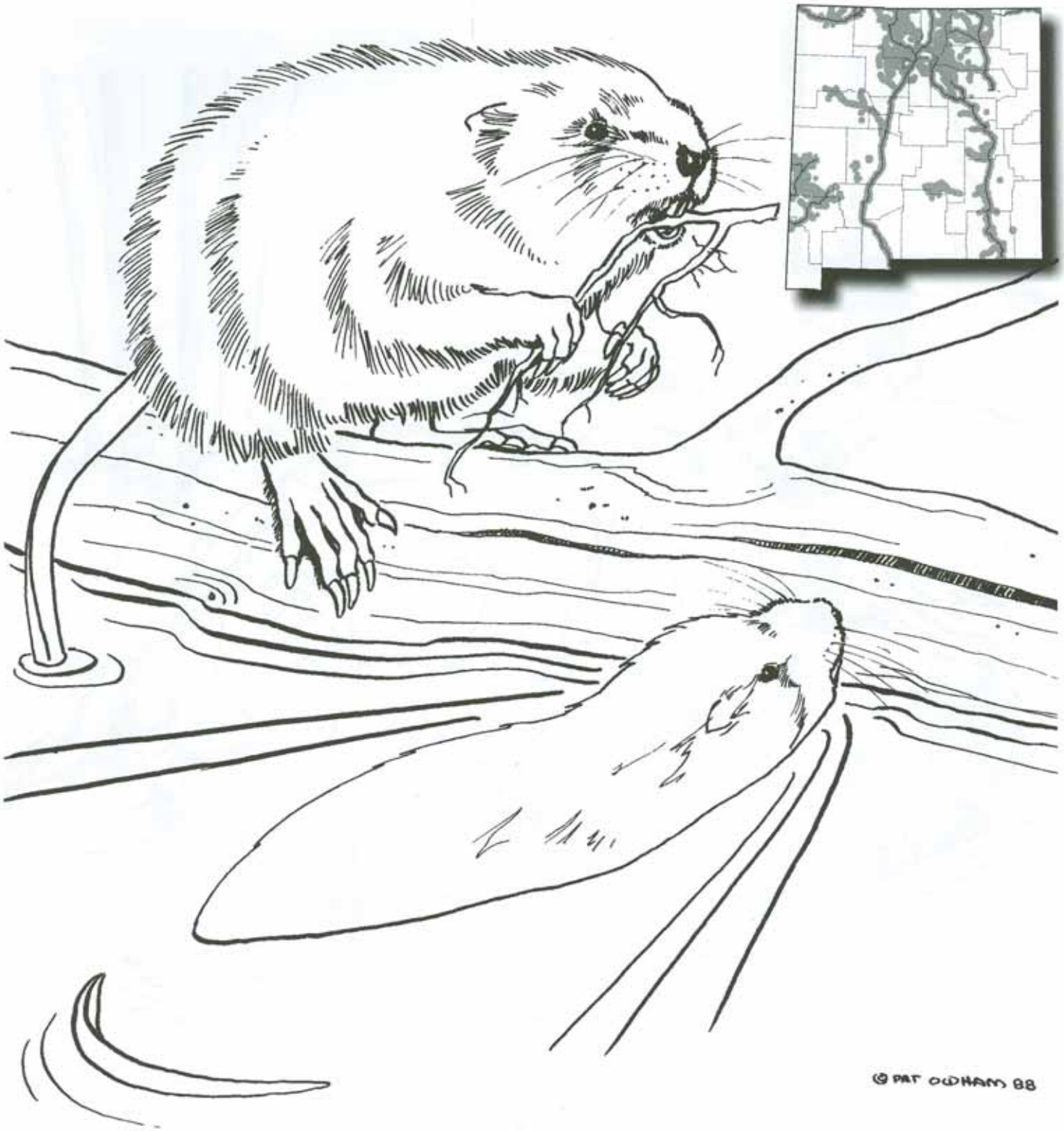


Channel Catfish

The channel catfish are most active from sundown to midnight. Their sensitive barbels (head whiskers) and excellent sense of smell allow them to hunt for aquatic insects and other tiny creatures that live on the bottom. Their barbels actually contain many taste buds. Extremely adaptable, this fish can grow to 30 inches and can be found in a wide range of water habitats, from cool to very warm waters. Native to the Canadian River drainage, the channel catfish has been introduced into all other water systems throughout New Mexico except the Tularosa Basin.

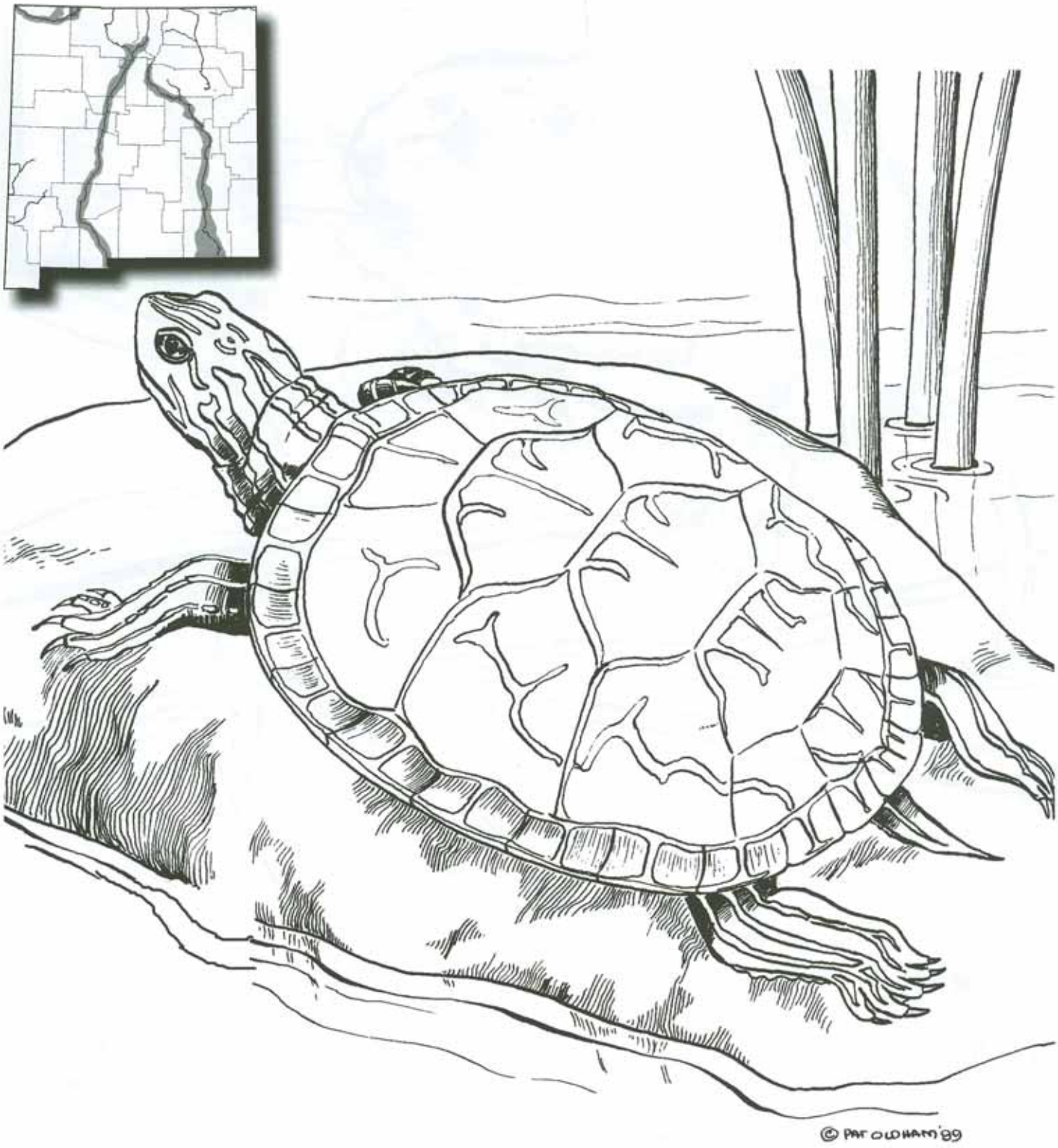
Belted Kingfisher

Recognized by its 'rattling' call as it flies along rivers and streams, the belted kingfisher lives up to its name with its wonderful fishing skills. The kingfisher will dive head first from a perch or from hovering into the water to catch fish. It will also eat amphibians, reptiles, insects, young birds and mice. Kingfishers lay their eggs in burrows along river or stream banks and sometimes in tree cavities. They can dig burrows with their bills excavating about a foot of tunnel in a day! Parents teach their young to fish after fledging by dropping dead meals into the water for them to retrieve.



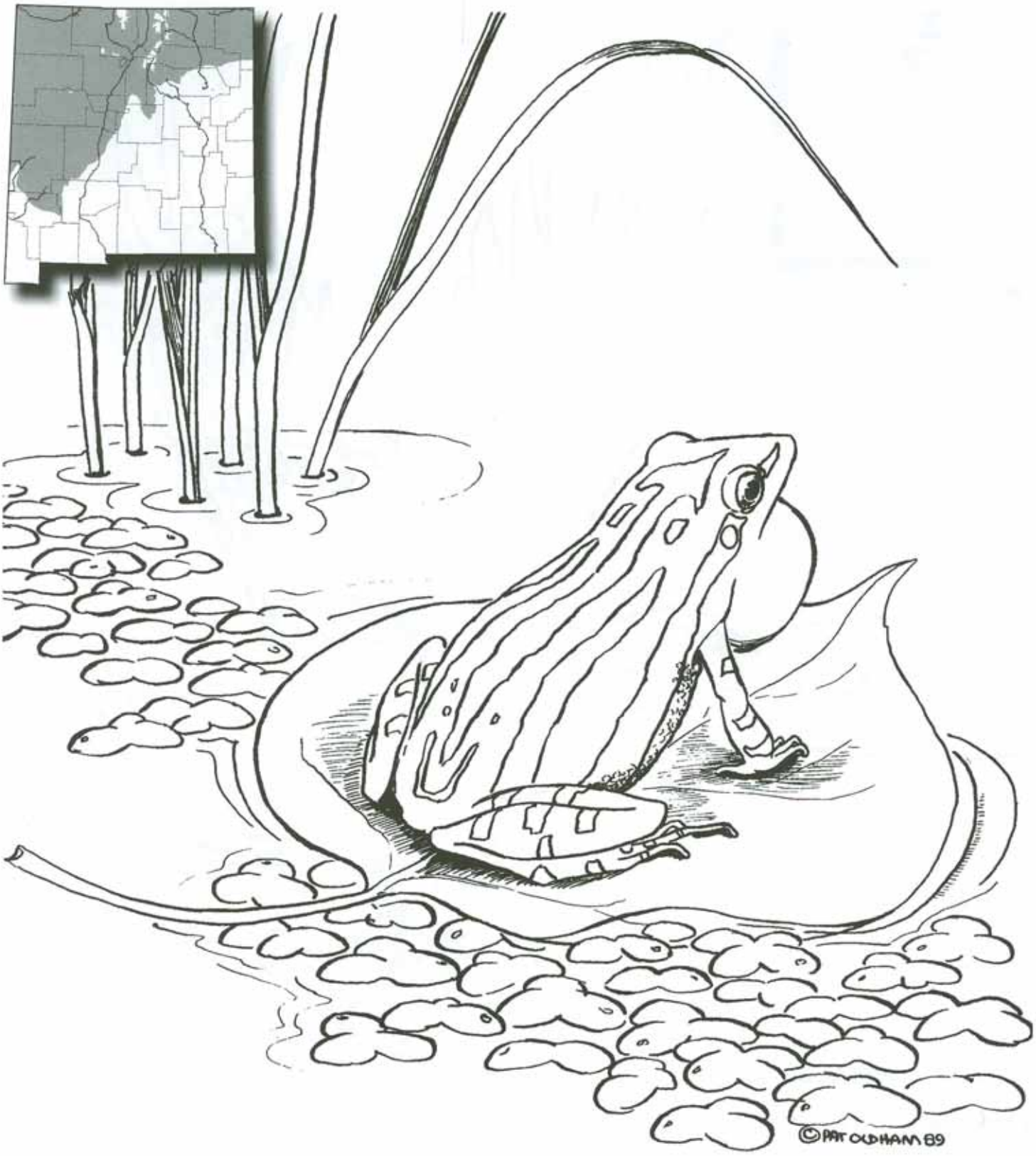
Muskrat

This active, lodge-building rodent can be found in a variety of New Mexico waterways, including shallow marshes. Muskrat lodges are made of pond grasses or bank burrows, usually with entrances 6 inches below the water surface. Muskrats can remain underwater for up to 20 minutes and can swim backwards or forwards with equal skill. Although they eat mostly plants they sometimes eat fish and crayfish. Although they look soaked to the skin, water never touches their skin due to their waterproof underhair and an insulating layer of air. '*Musk* rats' produce a musky scent from glands at the base of their tails. These glands are used to mark territories and they will intensely defend the best burrow sites.



Painted Turtle

Painted turtles are the most widespread turtles in North America and in New Mexico are found in slow-moving rivers, lakes, and marshes. These small colorful turtles are often found sunning themselves in large groups. The painted turtle's food consists of aquatic animals and plants, which it occasionally eats underwater. The young turtles tend to be more carnivorous (meat eating) than older individuals. Eggs are laid in nests in sandy or loamy soil. Like other turtles in New Mexico, the painted turtle *hibernates* as soon as winter's cold weather arrives.



Western Chorus Frog

These tiny frogs, just one and a half inches long, are found in high mountain lakes, wet meadows, flooded fields, roadside ditches, and even in shortgrass prairie. They are shy and secretive and are seldom seen or heard except during the breeding season. They often call during the day as well as at night and congregate in large numbers in shallow, temporary bodies of water. The breeding season for western chorus frogs is one of the earliest of all *amphibians* in New Mexico beginning as early as February in some areas and continuing on into July.

Osprey

Recognized by its 'bent elbows' in flight, this *bird of prey* hunts during the daytime and feeds almost entirely on fish. Like many birds of prey it suffered steep declines from the effects of DDT and other pesticides in the 1950s to 1970s. Ospreys began nesting in New Mexico in 1990. Ospreys live near the edges of lakes and streams and around 18 pairs can be found nesting around Heron Lake and El Vado Lake State Parks. They are often seen hovering above the water, searching for fish. They dive feet first *snaring* the fish in their talons. After the young are born the male brings fish to the female and she feeds them. Their nests are used year after year and can become huge weighing up to 500 pounds. Lots of fish are needed to keep the young osprey happy. A *brood* of three needs around 6 pounds of fish a day!

Canada Goose

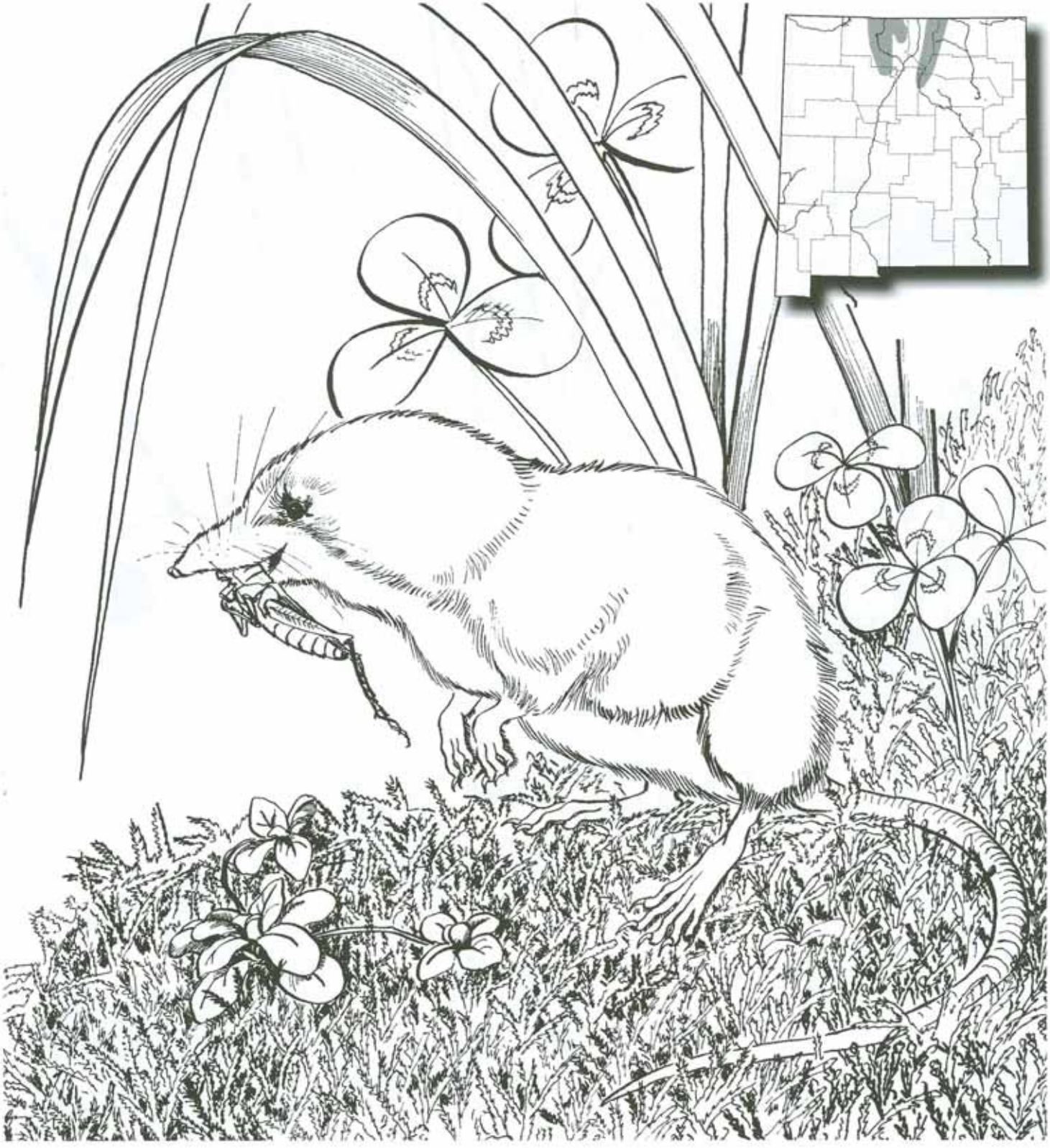
These handsome, widespread geese are well known for their classic, 'ahonk-ahonk' while flying in a V-formation overhead. Well *adapted* to *urban* life with ponds and rivers, they can be found year round in many parts of New Mexico. They feed on aquatic vegetation, grasses, winter wheat, clovers, grain and some insects and crustaceans. Canada geese form long-term pair bonds and begin breeding when they are two or three years old. Thousands of Canada geese migrate to New Mexico during the winter months and are an important game species. Once they breed in an area they will return again and again to the same location. This can create a problem in many parks and public areas where the geese can foul the lawns, overgraze the grass and become aggressive during breeding.

American Bittern

When sighted by predators or humans, the secretive American bittern remains motionless with its bill pointed straight up. Sometimes it gently sways while holding this position! With its *cryptic coloring* it is able to hide perfectly amongst the reeds and marsh where it lives. A solitary feeder, it likes to eat lots of fish, as well as snakes, frogs, insects and small mammals. The American bittern's song is a distinctive 'pumping' noise, which some people think sounds like a hiccup. The nest is a platform of cattails, grasses and sticks placed above the water in tall, dense vegetation. American bittern populations are declining due to a loss of wetlands.

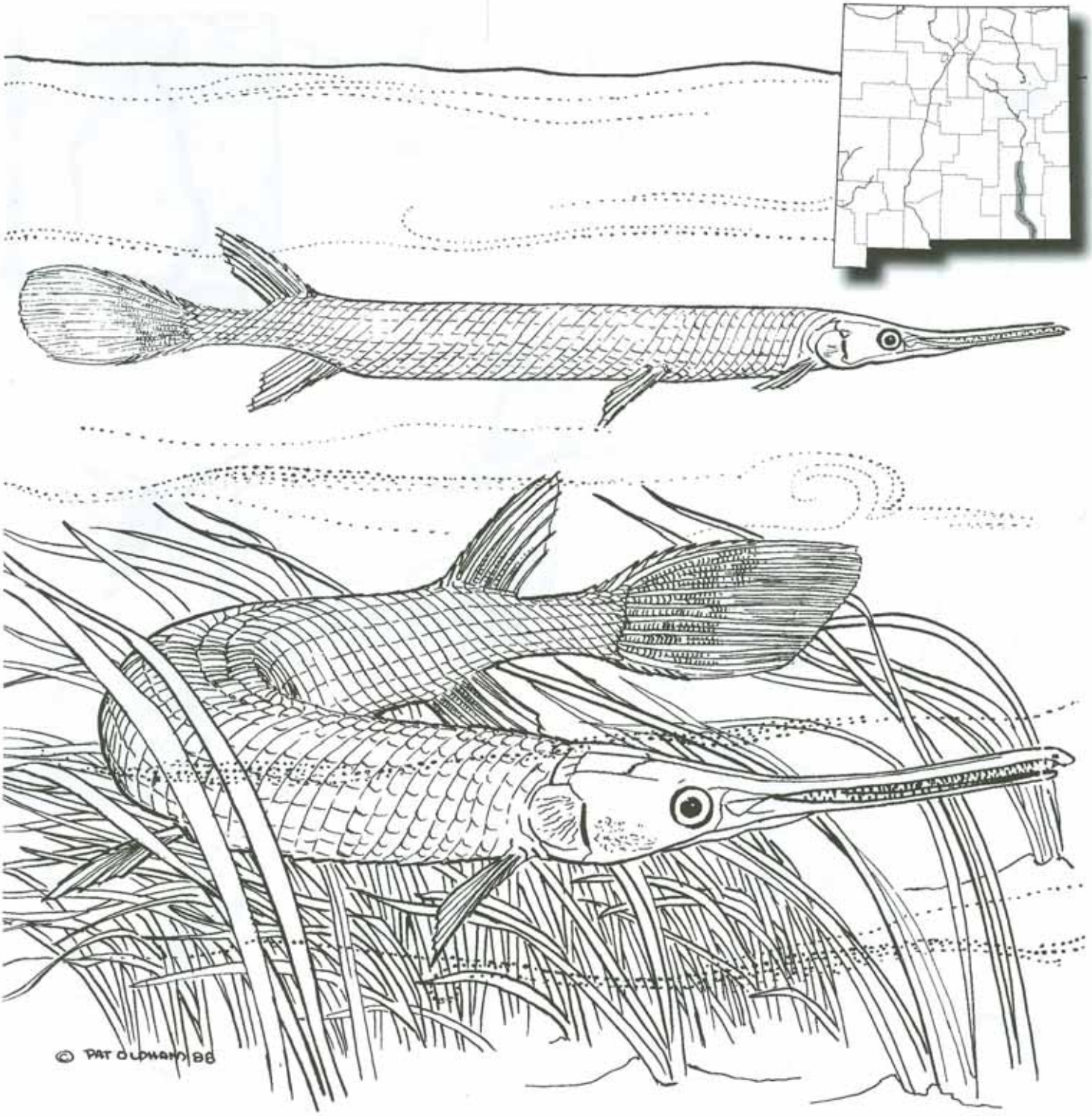
Sora

The sora is part of the rail family and is found in freshwater marshes and wet meadows. It is easily recognized by its 'whinny-like' call but it is very hard to see among the reeds and grasses of the marsh. It prefers seeds but also eats snails, insects, and crayfish. At home in the water, the sora can swim and dive to escape danger or look for food. Like most rails, sora migrate at night with many going to South America for the winter. The sora may use the setting sun, star patterns and even the earth's magnetic field to find their way. Although still fairly common, sora populations are declining due to a loss of wetlands and associated *riparian habitat*.



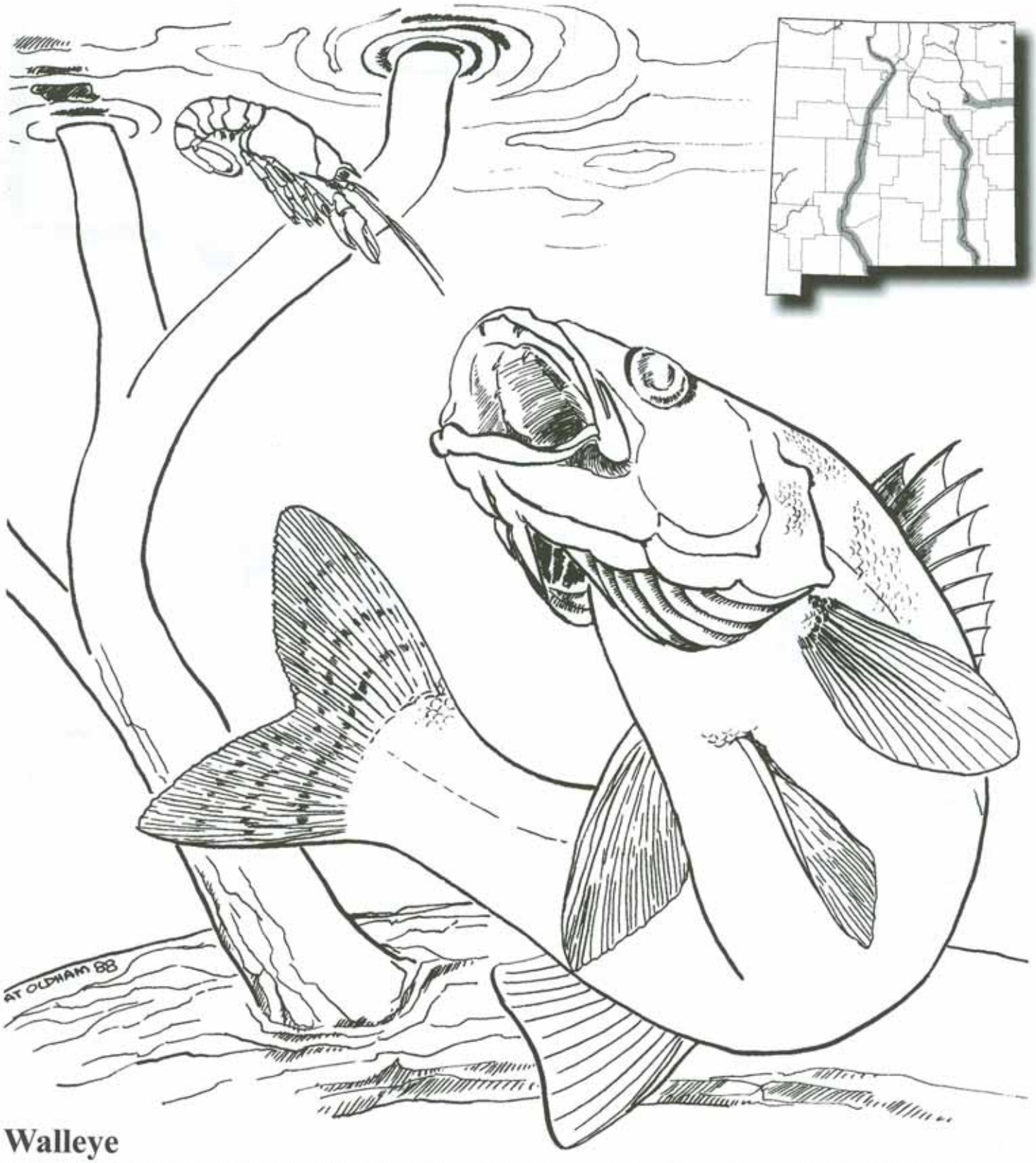
Water Shrew

This small (four inches long), energetic mammal can actually 'run' along the surface of the water for short distances, helped by special hairs that trap air bubbles on its hind feet. Water shrews can be found along mountain streams or among the moss by mountain lakes. At home in and around water, this shrew can dive to the bottom and air entrapped in the fur causes the shrew to pop back to the surface like a cork. Water shrews have huge appetites and can eat food equal or greater than their weight in one day. They actively hunt and eat a variety of small creatures that live in or near the water, such as grasshoppers and mayfly and stonefly nymphs.



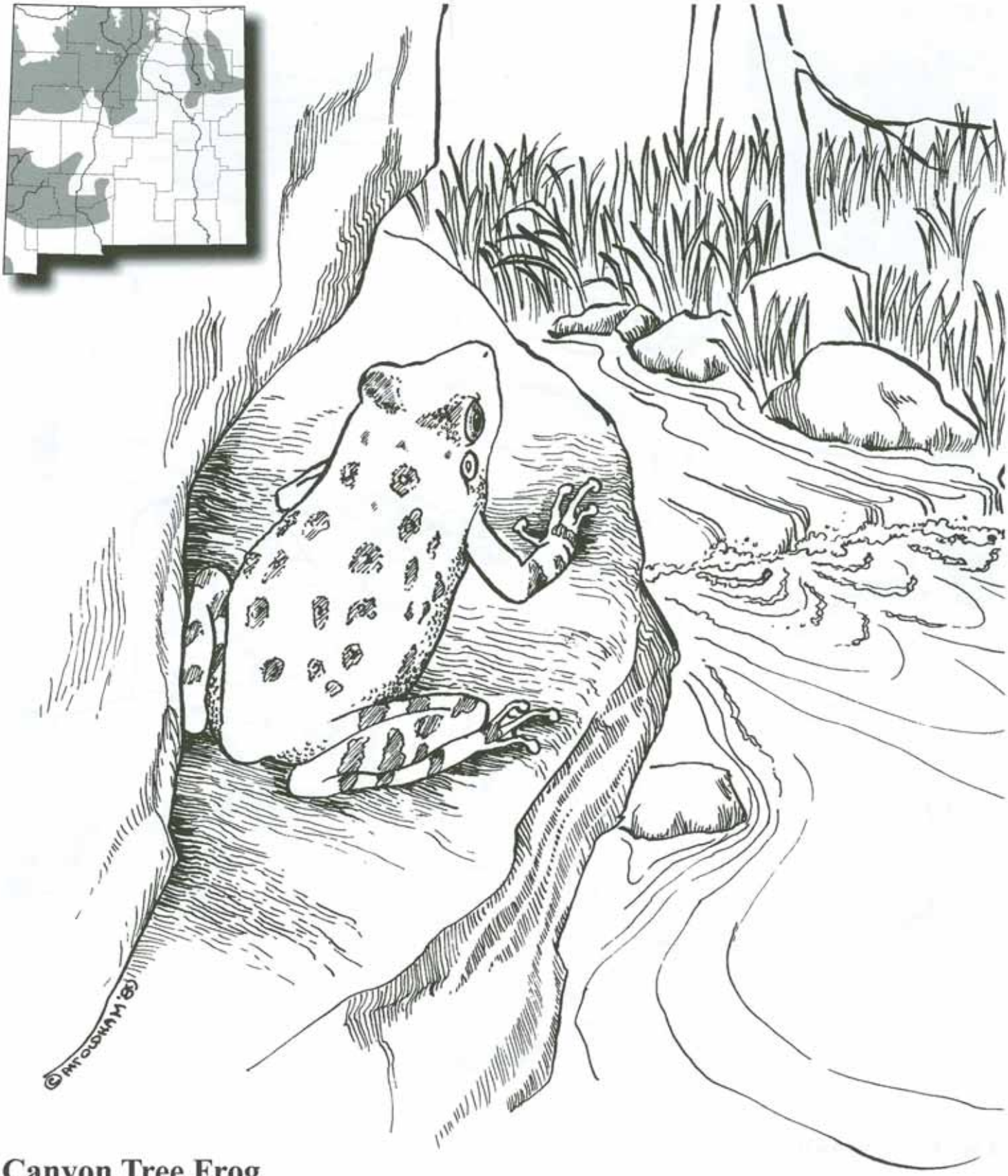
Longnose Gar

A long, slender fish native to the Pecos River, the longnose gar likes resrvoirs and quiet stretches of rivers and streams. Scientists believe the longnose gar to be native to the Rio Grande as well. It feeds on small crustaceans, like copepods and other fish. These effective ambush predators lie in wait to capture and feed on fish passing by. Because of its interesting appearance, the longnose gar is a popular fish for wildlife exhibits at the New Mexico State Fair. A record longnose gar in New Mexico weighed in at 12 pounds, 8 ounces, measuring 39 ¼ inches long and 17 ¼ inches around. The angler used beef liver to bait this particular catch.



Walleye

The walleye is the largest North American species in the perch family and is easily identified by its large milky white eyes and a mouthful of needle-sharp teeth. This sought-after sport and food fish has been introduced into lakes and reservoirs in the Pecos, Rio Grande and Canadian River drainages. It lives in deep waters over firm sand, gravel or rocks, where it looks for other fish to eat, or taking whatever it can find. In New Mexico, walleye spawning takes place in Caballo, Conchas, Ute and Santa Rosa *reservoirs*. A record catch for walleye in New Mexico came from Clayton Lake in 1989 and weighed in at 16 pounds, 9 ounces and was 32 inches long and 21 inches around.



Canyon Tree Frog

This small tree frog lives in rocky canyons that have massive boulders and scattered rocky pools. The canyon tree frog has tiny round pads on the tips of its fingers and toes that let it climb up smooth surfaces easily. This frog is not often seen unless you know exactly where to look for it. Its protective coloring blends in perfectly with its habitat. The canyon tree frog feeds on beetles, true bugs, worms and caterpillars.

Tiger Salamander

These harmless amphibians can be found in a wide variety of habitats as long as there is calm water nearby for breeding. During dry periods they burrow into the ground or enter rodent burrows. Some kinds of salamanders, including some tiger salamanders, are called axolotls, and keep their external gills all their life and are able to breathe underwater. The larvae of tiger salamanders are often called waterdogs and are commonly used as fish bait. Tiger salamanders have enormous appetites, eating earthworms, large insects, small mice and amphibians.

A Riparian Tragedy

At one time, this area was alive with abundant grasses, trees, shrubs, and flowers. It provided food, water, protection and cover for many different kinds of wildlife. However human activity in this area, over time, has left the vegetation trampled along the banks, which will ultimately lead to *erosion*. Damage to these delicate riparian areas has occurred throughout New Mexico. As a result, many wildlife species are decreasing, no longer able to survive without these beautiful, rich 'green zones' we call riparian habitat. Progress is being made and some species are recovering but without everyone's involvement many wildlife species will continue to suffer from unwise human activities on the land.

GLOSSARY

Adaptation: an alteration or adjustment in structure or habitats by which a species or individual improves its condition in relationship to its environment.

Amphibian: an animal that typically lives in an aquatic habitat breathing by gills as young, and primarily in a terrestrial habitat breathing by lungs and through moist glandular skin as an adult. (e.g., frog)

Aquatic invertebrates: animals without backbones (invertebrates) that live in the water. (aquatic)

Bird of prey: a large family of birds (240 species world-wide) that range in size from huge eagles to small hunters barely 10 inches long, (e.g. burrowing owls); primarily hunters with keen eyesight and hearing. Prey is mainly captured with their talons or feet but methods of hunting are variable.

Breeding: a series of complex and behavioral interactive patterns from courtship to rearing of young that are necessary for the continuation of a species.

Brood: the offspring of a bird or mammal.

Cryptic coloring: an animal that has indistinct coloring that allows it to appear hidden in its environment.

Ecosystem: a natural unit that includes living and nonliving parts interacting to produce a stable system in which the exchange of materials between the living and nonliving parts follows closed paths.

Erosion: to wear away or corrode.

Exotic: a plant or animal that is not native to a habitat (e.g., the walleye sport fish is introduced from the Upper Mississippi Basin).

Fishery: a system that includes fish or shell fish populations; the habitats and communities of species in which those populations live; and the people who affect and use those populations.

Food web: the transfer of food energy from one organism to another as each consumes a lower member and in turn is preyed upon by a higher member.

Habitat: the arrangement of food, water, shelter or cover, and space suitable to animals' needs.

Headwater streams: the upper tributaries of a watershed, where the water first collects and begins to flow as a stream.

Hibernate: an animal that passes the winter or a portion of it, in a state of sleep; a torpid or resting state.

Migratory: birds or other animals that make annual moves from one region or country to another to settle.

Musk: a substance secreted by the glands of some animals.

Larva: stage of development of a newly hatched animal that is devoted to growth; larva is between the egg and pupa stages in insects with complete metamorphosis and between egg and adult in other invertebrates or vertebrates such as amphibians. (plural=larvae)

Native species: population of individuals that originated in a certain region.

Population: the number of a particular species in a defined area.

Predator: an animal that hunts and kills other animals for food.

Prey: an animal hunted or seized as food by another animal.

Reservoirs: a lake in which water is stored for use; generally a man-made lake such as Cochiti and Elephant Butte lakes.

Riparian: located or relating to the banks of a stream, river, or other body of water.

Spawning: the act of producing or depositing eggs; usually referring to fish

Sedimentation: sand, silt, clay or rocks that have been worn and broken off (eroded) from other rocks and carried by or deposited by water or wind, usually into rivers and streams.

Snaring: a bird of prey, using its talons to catch/trap its prey. (as used in this text)

Species: a population of individuals that are more or less alike and that are able to breed and produce fertile offspring under natural conditions; category of biological classification immediately below the genus or subgenus.

Threatened: in wildlife terms, a species present in its range but in danger because of a decline in numbers.

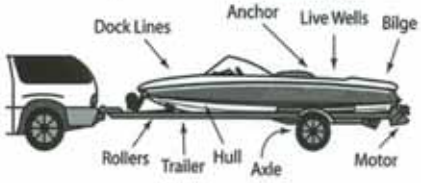
Urban: living in or situated in a town or city. (vs. rural indicating country residence)

Watershed: an area or region drained by a river, river system or other body of water (drainage basin); also, an area or ridge of land that separates waters flowing into different rivers, basins or seas.

Wetlands: any land area that tends to be regularly wet or a lowland area that is saturated with moisture; includes wet meadows, marshes, sloughs, ponds and small lakes.

Before Launching...
Before Leaving...

Inspect Everything!



Follow these simple steps:

- Remove any visible mud, plants, fish or other animals before transporting equipment.
- Eliminate all water from your boat and equipment before transporting them anywhere.
- Clean and dry everything that came in contact with water (including boats, trailers, equipment, clothing, waders, dogs, etc.).
- Never release plants, fish or other animals into a body of water unless they came from that same body of water.

Why Control zebra/quagga mussels?

- Ruin boat engines and jam steering equipment.
- Reduce game fish populations.
- Make lakes/rivers unusable by boaters and swimmers.
- Reduce native aquatic species.
- Degrade aquatic communities and ecosystems.
- Reduce property values.
- Affect human health.
- Affect local economies of water-dependent communities.
- Dramatically increase the operating costs of reservoir operations, water delivery systems, and municipal / industrial water-related processes.

AQUATIC NUISANCE SPECIES

Protect All of New Mexico's Fisheries
Please do not introduce aquatic nuisance species to our waters!

Stop the spread of freshwater zebra/quagga mussels!

Zebra and quagga mussels are the only freshwater bivalves in North America that encrust hard surfaces.

They are invasive species from the Black and Caspian Sea drainages in Eurasia.

Zebra mussels on a crayfish

They may be microscopic or up to two inches long.

They commonly have alternating light and dark stripes, hence the common name "zebra" mussels.

They usually attach in clusters and have razor-sharp shells that can cut your hands and feet.

Please report any sightings by calling our National Hotline: **1-800-STOP-ANS**
(1-800-877-786-7267)

In Western states you may also report zebra/quagga mussel sightings to Bonneville Power Administrator's Crime Witness Hotline: **1-800-437-2744.**

To learn more about aquatic nuisance species go to **http://100thmeridian.org**
Visit www.100thmeridian.org and **www.ProtectYourWaters.net** to find more information about zebra mussels and other aquatic nuisance species.

New Zealand Mudsnail ALERT

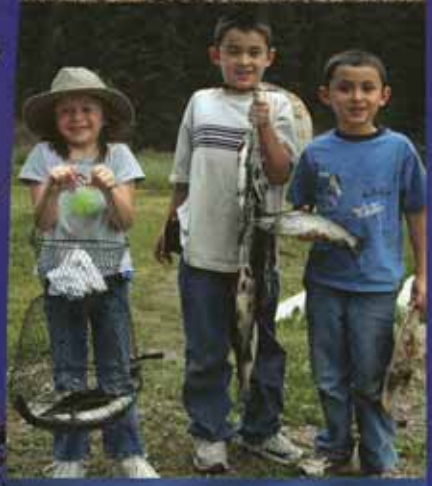
New Zealand mudsnails (NZMS) are native to New Zealand. They have spread to North America. They were discovered in the late 1980s in the Snake River, Idaho and Madison River, Montana. This small invasive quickly spread to waters in Yellowstone National Park and is now found in many waters across the West. People spread NZMS attached to waders and fishing gear or by moving fish or bait.

Why Control New Zealand Mudsnails?
At high densities, NZMS alter aquatic habitats and foodwebs by eating algae and competing with native bottom dwelling organisms. These ecosystem impacts can reduce trout and other recreational fisheries...FOREVER. Help stop the spread!

To learn more about NZMS go to **http://mudsnail.fws.gov**

STOP AQUATIC HITCHHIKERS!™

CONSERVATION EDUCATION



AQUATIC EDUCATION NEW MEXICO

Aquatic Resources Education Program

The Aquatic Resources Education (ARE) program provides fun and educational ways to introduce kids and adults to the sport of fishing, and to first-hand experiences monitoring watersheds throughout New Mexico. The program is mostly funded by anglers through the money provided by the Sports Fish Restoration Act – a federal program that taxes the equipment used by anglers. You can get involved!

Become an Aquatic Resource Education Volunteer
Teach kids to fish and be good stewards of the aquatic environment. Assist kids in restoring and monitoring the health of our watersheds. Work with natural resource and education professionals in the classroom and the field.

Attend a fishing clinic and Learn to fish from a pro
Casting a line and catchin' fish -- the basics of angling --offer fun for entire families in New Mexico's enchanting outdoors. For those who have never fished or are a little rusty, yet eager to get started, the Fishing Skills Program offers FREE clinics with all the equipment you need for learning from experienced, professional trainers.

Watershed Watch
High school students around the state participate in this long-term watershed monitoring program. Schools are provided with water testing equipment that inlcludes spectrophotometers, turbidimeters, reagent kits and the Watershed Watch Workbook.

For Aquatic Resources Education assistance and information:

Project WILD Coordinator
New Mexico Department of Game and Fish
1 Wildlife Way
Santa Fe, NM 87507
(505) 476-8000
www.wildlife.state.nm.us