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TURTLES

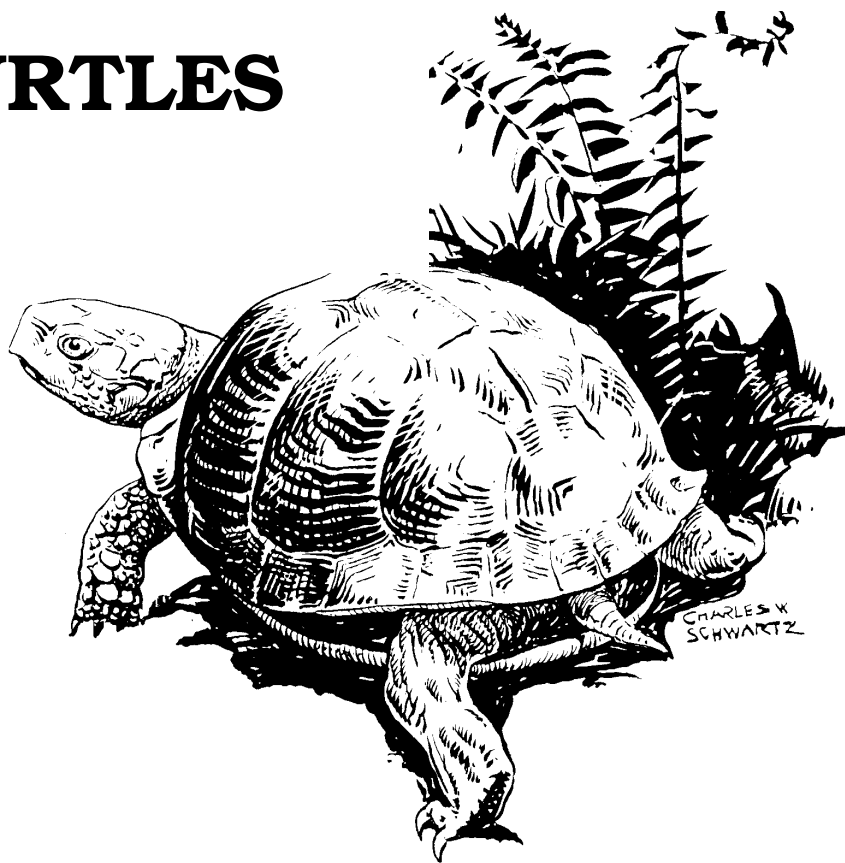


Fig. 1. Eastern box turtle, *Terrapene carolina*

Damage Prevention and Control Methods

Exclusion

Generally not practical. Small areas can be fenced.

Cultural Methods

Routine drainage of fish ponds generally results in lower populations.

Keep levees mowed to make aquaculture ponds less attractive to turtles.

Drain rice irrigation systems during late summer to reduce populations prior to spring planting.

Repellents

None are registered.

Toxicants

None are registered.

Fumigants

None are registered.

Fishing

Hook and line with bait.

Snag pole.

Trapping

Can be effective at certain times and places.

Shooting

Can be used to reduce populations of turtles. Check for local restrictions before discharging firearms. Some states prohibit the shooting of turtles in ponds and lakes.

Identification and Range

Turtles occur on all continents except Antarctica. Over 240 species occur worldwide but turtles are most abundant in eastern North America. Most turtles have good field characteristics that are visible and can be easily identified. Some species, however, require close examination of the shields on the plastron (underside shell) for a positive identification.



PREVENTION AND CONTROL OF WILDLIFE DAMAGE — 1994

Cooperative Extension Division
Institute of Agriculture and Natural Resources
University of Nebraska - Lincoln

United States Department of Agriculture
Animal and Plant Health Inspection Service
Animal Damage Control

Great Plains Agricultural Council
Wildlife Committee

General Biology, Reproduction, and Behavior

Any permanent body of water is a potential home for turtles. Some species will also tolerate brackish water, but the sea turtles are the only true saltwater species.

Unlike most other turtles, including soft-shells, snapping turtles rarely bask. Turtles feed on a combination of plant and animal material that includes items such as aquatic weeds, crayfish, carrion, insects, fish, and other small organisms. The diet of snapping turtles, however, usually includes a relatively high proportion of fish. They are relatively aggressive predators, occasionally known to take fish off fish stringers.

All turtles reproduce by laying eggs in early spring. Hatching begins in late summer and extends into the fall, depending on summer temperatures associated with the climate of the range. During winter, turtles usually bury themselves in soft mud or sand in shallow water with only the eyes and snout exposed.

Turtles are easy prey for a number of predator species such as alligators, otters, raccoons, and bears. Humans are probably the greatest threat to turtle populations, particularly for the most commercial species, such as snappers and soft-shells.

Damage

Turtles are seldom a pest to people. Turtles are very beneficial and of economic importance, except in certain areas such as waterfowl sanctuaries, aquaculture facilities, and rice fields in the south. Indiscriminate destruction of turtles is strongly discouraged, and every effort should be made to ensure that local populations are not exterminated unless it can be clearly demonstrated that they are undesirable.

Some species of pond and marsh turtles are occasional economic pests in rice fields in the south. Their feeding

activity on young rice often results in significant yield reductions in local areas.

In farm ponds, turtles undoubtedly compete with fish for natural food sources such as crayfish and insects. Turtles, however, are valuable because they kill diseased and weakened fish, and clean up dead or decaying animal matter.

In commercial aquaculture production ponds, turtles can eat fish that are being grown. They also eat fish food. Aquaculture ponds are not the preferred habitat of turtles, however. The heavy clay soils required for pond construction are not conducive to the turtles' laying of eggs.

Legal Status

Most turtles are not protected by state laws. Licenses usually are required for commercial fishing and sale of turtles. Before taking turtles, contact a state wildlife or conservation agency representative for legal status.

There were two turtles listed by the US Fish and Wildlife Service as endangered or threatened species as of December 1992. The desert tortoise was listed as threatened everywhere except for a population in Arizona. Its historic range is Arizona, California, Nevada, and Utah. The gopher tortoise was listed as threatened wherever found west of the Mobile and Tombigbee rivers in Alabama, Mississippi, and Louisiana. Its historic range is Alabama, Florida, Georgia, Louisiana, Mississippi, and South Carolina.

Five freshwater turtles were listed by the US Fish and Wildlife Service as endangered or threatened species as of December 1992. The Alabama red-bellied turtle and the flattened musk turtle were listed as endangered and threatened, respectively. Alabama is the historic range of both species. The ringed sawback turtle is threatened in its historic range of Louisiana and Mississippi. The yellow-blotched map turtle is threatened in its historic range of Mississippi. The Plymouth red-bellied turtle is endangered in its historic range of Massachusetts.

Additional species under review include the alligator snapping turtle, bog turtles, and the western tortoises.

Damage Prevention and Control Methods

Cultural Methods

The best control for box, pond, and marsh turtles in rice fields is to drain irrigation canals and fallow fields during winter months. Without a permanent water source year-round, these species do not reach large enough populations to become a serious economic problem.

Ponds that are used for the production of channel catfish or other finfish are routinely harvested by seining. The seining process will also capture turtles. Farmers can control turtle populations by moving these captured turtles to their natural habitats.

Repellents, Toxicants, and Fumigants

None are registered.

Trapping

Since turtles generally are not a pest to people, control measures are limited primarily to trapping. Trapping can be used quite effectively to reduce local populations of these species where damage occurs.

The best place to trap turtles is in the quiet water areas of streams and ponds, or in the shallow water of lakes. Soft-bottom areas near aquatic vegetation are excellent spots.

The best seasons for trapping are spring, summer, and early fall. Most turtles hibernate through the winter, except in the extreme south, and do not feed, making trapping ineffective. Methods of trapping are described for various types of turtles in the following sections.

Traps should be baited with fresh fish or red meat. Catfish heads and cut carp are regarded as two of the best baits available for trapping turtles. Baits should be suspended in traps on a bait hook or placed in bait containers

for maximum effectiveness. In areas where turtle populations are high, it is often necessary to check traps two or three times per day and add fresh bait, since turtles are capable of consuming large quantities of bait rather quickly.

Snapping and Soft-Shell Turtles.

While snapping turtles are in hibernation, they often can be taken in quantities from spring holes and old muskrat holes, under old logs, and in soft bottoms of waterways. Turtle collectors rely on their hunting instincts and experience to locate hibernating turtles. When one is found, it pays to explore the surrounding area carefully because snappers often hibernate together. The method for capture, known as "noodling" or "snagging," requires a stout hook. One end of an iron rod is bent to form a hook and sharpened; the other end of the rod is used for probing into the mud or soil to locate the turtles. The hunter probes about in the mud bottom until a turtle is located (which feels much like a piece of wood) and then pulls it out with the hook. Turtles are inactive during the winter and offer little resistance to capture, although the landing of large ones may be difficult even for experienced hunters.

Snappers and soft-shelled turtles are sometimes taken on set lines baited with cut fish or other fresh meat. One recommended device is made by tying 4 or 5 feet (1.2 or 1.5 m) of line to a stout flexible pole, 6 to 8 feet (1.8 to 2.4 m) long. About 12 inches (30.5 cm) of No. 16 steel wire is placed between the line and the hook, preferably a stout hook about 1 inch (2.5 cm) across between barb and shaft. The end of the pole is pushed into the bank far enough to make it secure at an angle that will hold the bait a few inches (cm) above the bottom.

Snappers and soft-shelled turtles may also be taken readily in baited fyke or hoop nets (Fig. 2). These barrel-shaped traps may sometimes be purchased on the market or made from 3-inch (7.6-cm) square mesh of No. 24 nylon seine twine. The trap should be 4 to 6 feet (1.2 to 1.8 m) long from front to back hoop. The three to five hoops per trap

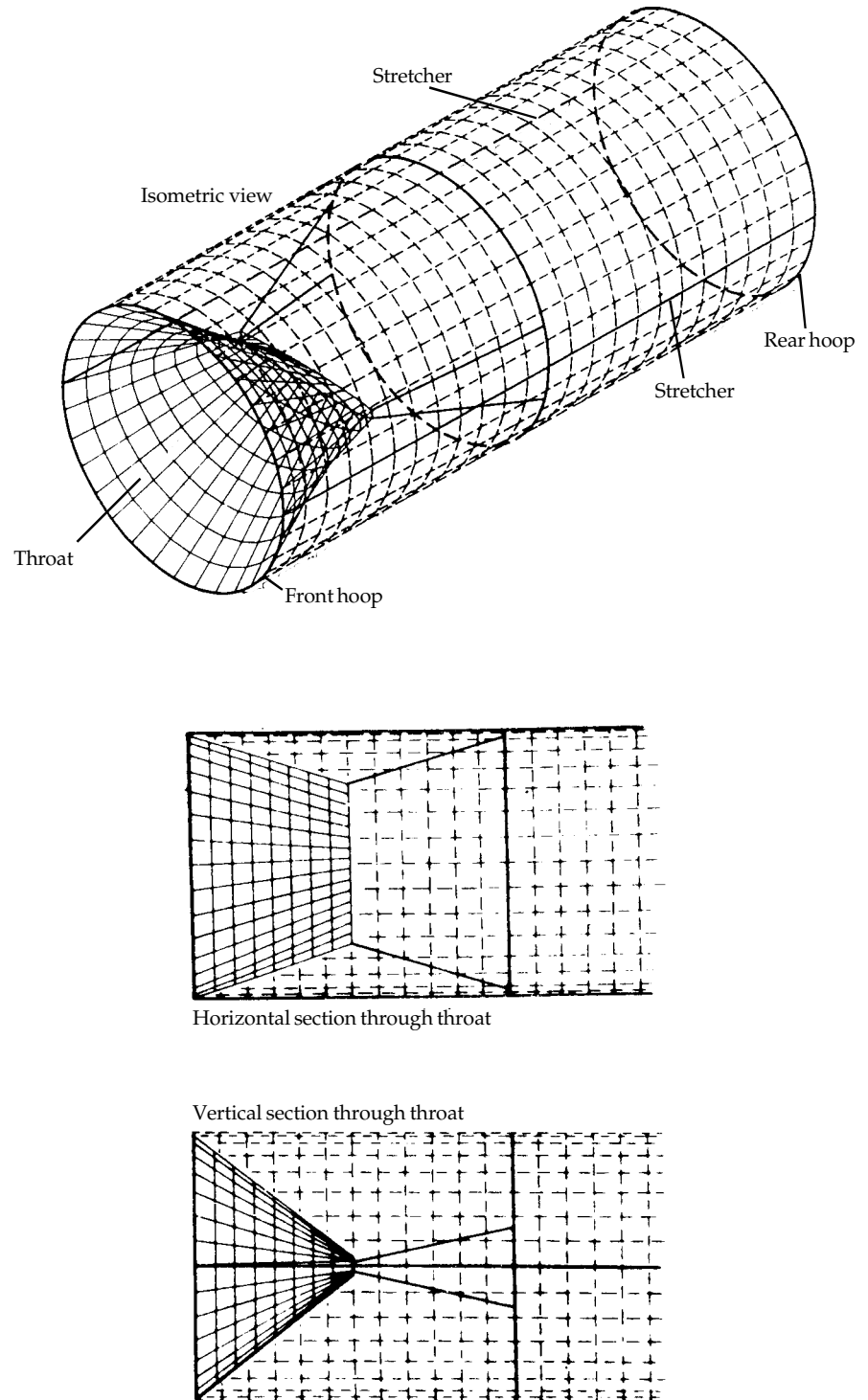


Fig. 2. Hoop net turtle trap.

should be 30 inches (76 cm) in diameter, made of wood or 6-gauge steel wire with welded joints. The funnel-shaped mouth should be 18 inches (46 cm) deep from the front hoop to the opening inside. The entrance opening of the funnel should be 1 inch x 20 inches (2.5 x 51 cm). The corners of the opening are tied by twine to the middle hoop. The rear or "box" end may be closed with a purse string. After the hoops have been installed, the net should be treated with a preservative of tanbark, cooper oleate, tar, or asphalt. To keep the trap extended, stretchers of wood or steel wire, about 9 gauge or larger, are fastened along each side.

Coarse mesh poultry wire may be substituted for the twine. If this is done, the frame will be approximately 30 inches (76 cm) square. The shape and dimensions of the entrance as specified should be the same in all traps, as it is easily negotiated by the turtles. The dimensions of the trap may be altered for ease of transportation. A door may be installed in the top to facilitate baiting and removal of turtles. Entrance funnels may be placed on each end if desired.

Fyke or hoop turtle traps should be set with the tops of the hoops just out of the water. This will permit the turtles to obtain air and lessen their struggles to escape, and will enable other turtles to enter the trap more freely. It is necessary to set traps this way if the turtles are to be taken alive. Traps set in streams must be anchored. If the water is too deep for the top of the trap to be out of the water, short logs can be lashed to each side to float the trap. Turtles enter more readily when the mouth of the trap is set downstream.

Box, Pond, and Marsh Turtles.

Because of their habits, these species must be captured with methods different from those for snapping and soft-shelled turtles. They cannot be taken in numbers during the winter, like snappers, because they do not congregate in their hibernating places. In the summer some species are gregarious, crowding together in numbers on projecting logs and banks. By taking

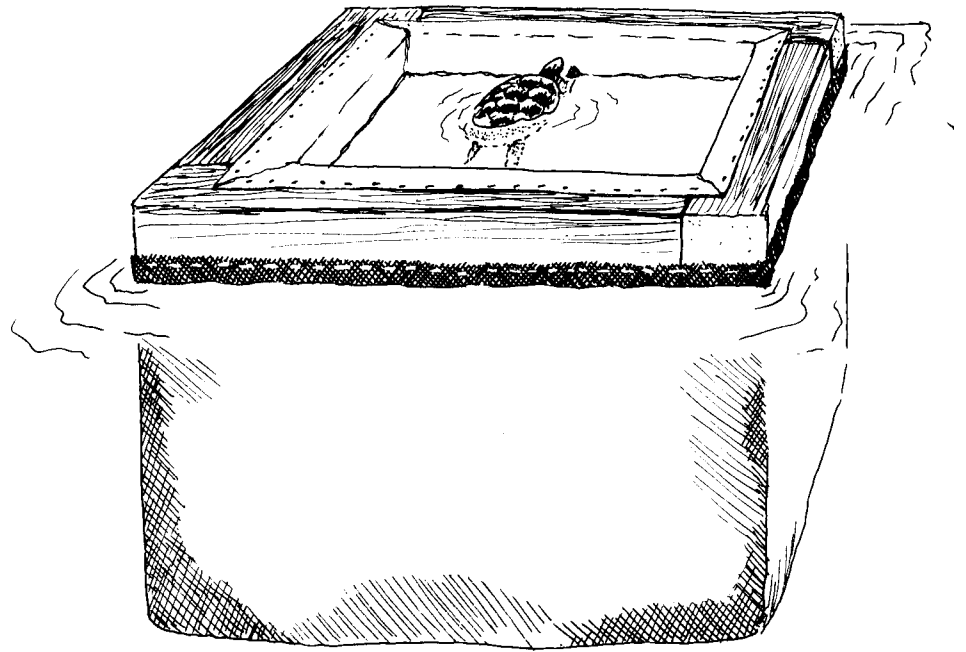


Fig. 3. Sink box turtle trap.

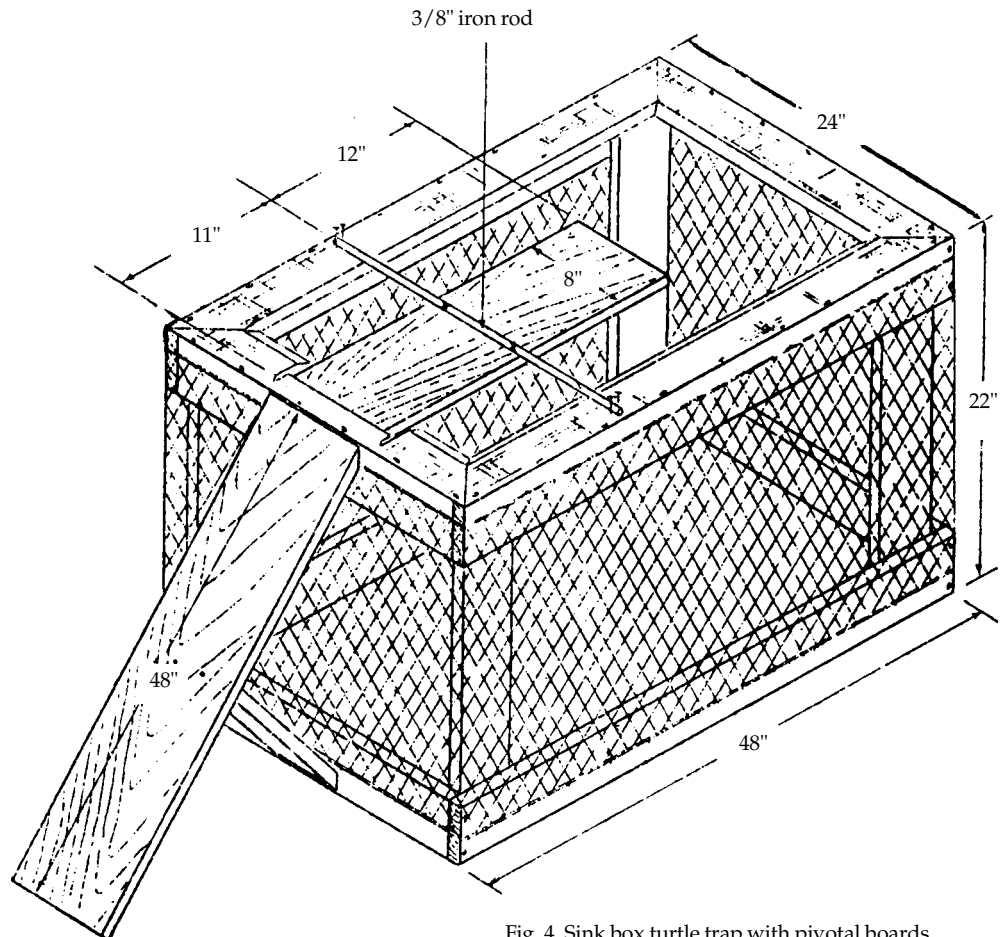


Fig. 4. Sink box turtle trap with pivotal boards.

advantage of this fact, these basking species may be taken by trapping in a box sunk in a place the turtles are using. The turtles crawl up onto the top of the box to bask in the sun, and many of them fall into the trap (Fig. 3).

The top frame of the box may be constructed from discarded telephone poles, imperfect ties, or logs about 8 inches (20 cm) in diameter. Old natural unpainted wood is preferred. The logs are mitered at each end to fit together, and the inside enclosure made to measure 2 to 3 feet (61 to 91 cm) square. About half of each log from the top center to the inside under center is lined with zinc or galvanized metal. Turtles that have dropped into the trap are unable to climb over the zinc or galvanized metal covering. From the outside water edge to the top of each log, cleats can be nailed or the logs made rough, so turtles can easily climb on top. Galvanized mesh wire can be fastened to the logs with staples, hooks, or wire to form a wire basket fitting the opening between the logs. One-inch (2.5-cm) mesh is about right if all sizes of turtles are to be trapped. If only larger specimens are sought, however, a 3-inch (7.6-cm) mesh can be used. The trap should be fastened to a stump or some other permanent anchor.

Some trappers prefer to use bait; others leave the traps unbaited. For the capture of snapping and soft-shelled turtles, the trap can be modified by installing funnel-like entrances on one or two sides as described for the hoop traps.

Another type of trap consists of a box with an inclined board leading up to it. The turtles climb up on the board to bask and drop off into the box. Figure 4 shows the same trap with pivotal boards placed so that turtles crawling out on the boards overbalance on the terminal end and are dropped into the box.

Shooting

In some states, shooting can also be used as a means of reducing populations in ponds and lakes. This technique, however, is not very effective.

Economics of Damage and Control

Three groups of turtles are of economic importance in North America. They include the snapping turtles; the box, pond, and marsh turtles; and the soft-shelled turtles. Snapping turtles are trapped for human consumption and are being considered for aquaculture. Red-eared turtles are cultured for the foreign pet trade. Soft-shell turtles are also trapped for human consumption.

Damage is typically of little economic concern, but may be a problem in rice and aquacultural production.

Acknowledgments

Figure 1 from C. W. Schwartz: *Wildlife Drawings* (1980), Missouri Department of Conservation, Jefferson City.

Figures 2 through 4 from *Wildlife Damage Control Handbook* (1969), Kansas State University, Manhattan. Adapted by Emily Oseas Routman.

For Additional Information

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