Best Management Practices

for Trapping Gray Foxes in the United States

UPDATED 2014

ASSOCIATION *of* FISH & WILDLIFE AGENCIES

Figure GF1. Gray Fox *(Urocyon cinereoargenteus)*

Best Management Practices (BMPs) are carefully researched recommendations designed to address animal welfare and increase trappers' efficiency and selectivity. The extensive research and field-testing used to develop BMPs are described in the Introduction section of this manual. The evaluation methods used to develop BMPs have been standardized, enabling BMPs to be easily updated and revised as new traps and techniques become available. All traps listed in the BMPs have been tested and meet performance standards for animal welfare, efficiency, selectivity, practicality, and safety.

Trapping BMPs provide options, allowing for discretion and decision making in the field. BMPs are meant to be implemented in a voluntary and educational approach and do not present a single choice that can or must be applied in all cases. BMPs are the product of ongoing work that may be updated as additional traps are identified through future scientific testing.

The Gray Fox at a Glance

Characteristics

The gray fox (Figure GF1) is a member of the Canidae family and is similar in size to the red fox. Adults on average range from 6 $^{1}/_{2}$ to 15 pounds, with an average length of 31 to 44 inches. Adult males are generally larger than adult females. The gray fox can be differentiated from the red fox by its silvery-gray coat and black-tipped tail versus the orange-red coat with white-tipped tail of the red fox. The scientific name is *Urocyon cinereoargenteus.*

Range

The gray fox is found throughout the contiguous United States, with the exception of the mountainous portions of the northwestern states. Populations can also be found in extreme southern Canada, as well as throughout Mexico and Central America.

Habitat

In the eastern United States, the gray fox prefers to inhabit areas of deciduous forest and areas with a mix of deciduous forest and farmland. In the west, brushlands and streamside forests are preferred.

Food Habits

The gray fox is the most omnivorous of the North American canid species, consuming a wide variety of plant and animal matter. In most ecosystems, various rodents, rabbits and birds form the majority of the diet. When seasonally available, fruits, nuts, and vegetables are consumed as an important food source. The gray fox will also feed on carrion, and food items not consumed during one meal are often buried to be consumed later.

Reproduction

The breeding season occurs from January to May, but mating peaks in March. After a gestation period of 53 days, a litter of three to five young is born. The pups leave the den after approximately three months, and family groups disband after approximately six to seven months. Reproduction occurs only once a year, and gray foxes typically breed the first year following birth.

Populations

During the last half century, the gray fox range has extended northward and into the Great Plains region. The areas of range expansion were formerly unoccupied by this species or were areas where the species had been extirpated. It preys upon far less domestic livestock and poultry than the red fox, causing little economic loss to humans.

Aside from humans and domestic dogs, gray foxes have few natural predators, though coyotes may occasionally prey upon them. Diseases such as canine distemper and rabies may also impact populations locally. Unique among members of the canid family, the gray fox is an excellent climber and often spends time sunning on tree branches.

General Overview of Traps Meeting BMP Criteria for Gray Foxes in the United States

Three basic types of traps were tested for gray foxes: foothold restraining traps, a powered cable device for foot capture, and a cage trap (Table GF1). Examples, brief descriptions, and mechanical details of the various devices are given in the next section.

Table GF1. Overview of traps meeting BMP criteria for gray foxes in the United States.

Trap Category	Jaw/Frame Characteristics	Inside Jaw/Frame Spread at Dog*	Inside Width at Jaw/Frame Hinge Posts*
Coil-spring	Padded	3 5/16 - 4 1/2	3 7/16 - 5
	Double	4 1/2	4 1/2
	Offset, laminated and/or wide	3 3/4 - 5 1/16	3 1/2 - 5 1/16
Powered Cable Device (foot capture)	Smooth, round rod, 1/8 inch cable	6 3/8	5 3/4
Cage	**Total Dimensions* Length x Width x Height**	**Door Size* Width x Height**	**Mesh Size*/ Gauge**
	32 x 10 x 12.75	10 x 12	1 x 2 12 gauge galvanized

* Inches

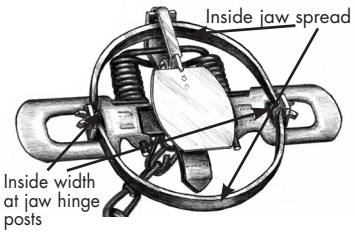

Figure GF2. Coil-spring trap

General Considerations When Trapping Gray Foxes

Foothold Traps

- Many currently used trap models meet specifications
- Pan tension set at two pounds may improve selectivity and foot placement in the trap
- Can be used to capture several furbearer species
- Captures and holds animals alive, allowing for release

Powered Cable Devices (foot capture)

- Pan tension set to two pounds may improve selectivity
- Use of a loop stop (plastic sleeve) and large diameter cable minimizes capture of smaller species
- Cables require frequent replacement after capture
- Can be used to capture several furbearer species
- Captures and holds animals alive, allowing for release

Cage Traps

- Bulky
- Often requires bait or lure
- Can be used to capture several furbearer species
- Captures and holds animals alive, allowing for release

Specifications of Traps Meeting BMP Criteria for Gray Foxes in the United States

As more capture devices are tested and new information becomes available, they will be added to an updated list. Mechanical descriptions of tested traps are given as an aid to trappers or manufacturers who may wish to measure, build or modify traps to meet these specifications (Figure GF2). Also, other commercially available traps, modified traps, or other capture devices not yet tested may perform as well as or better than the listed BMP traps. References to trap names are provided to identify the specific traps tested. The following list is provided for informational purposes only and does not imply an endorsement of any manufacturer.

Average mechanical measurements are rounded to the nearest $^{1}/_{16}$ inch. There may be up to a $^{1}/_{8}$ inch variation in specifications (Figure GF2) on the part of the manufacturer. Manufacturers use recognizable names, such as "No. 2" coil-spring, to identify certain traps. However, there is no standardized system linking mechanical design features with trap names. The mechanical features of these traps are listed so that similar traps may be identified. The performance of anchoring systems was not specifically evaluated, however, methods of attachment are described for informational purposes.

Padded Jaws (Figures GF3a—GF5b)

Average Mechanical Description and Attributes

Inside jaw spread (at dog): 3 5/16 inches
Inner width: 3 3/16 inches
Inside width at jaw hinge posts: 3 7/16 inches
Jaw width: 9/16 inch padded jaw
Jaw thickness: 1/4 inch padded jaw
Main trap springs: Two 0.084 inch diameter wire coil-springs
Base plate: Not reinforced
Padding: Manufacturer-supplied rubber pads

Any trap that has similar specifications may be considered a BMP trap regardless of brand or source of modification, although performance information on all other BMP criteria (see "Criteria for Evaluation of Trapping Devices": Introduction pages 4-6) needs to be considered as well. The trap tested was the Woodstream™ Victor No. 1 Softcatch™ coil-spring (Figures GF3a–GF3b).

Additional information

- Chain attachment used in trap testing: 8 inch, center mounted with two swivels, one shock spring and anchored with a stake.
- Selectivity features: Brass pan tension machine screw; pan tension was loosened so that the pan moved freely, and was checked and readjusted as needed after every capture.
- Special considerations for practicality: Some damage to trap pads should be expected and will require occasional replacement as a normal part of trap maintenance and upkeep. Special care should be taken to prevent odor contamination of the rubber jaws. Avoid using petroleum-based dye directly on the rubber pads. This device also meets BMP criteria for use in submersion sets for beaver, otter, muskrat, and mink, and nutria on land or in submersion sets.

Average Mechanical Description and Attributes

Inside jaw spread (at dog): 4 1/2 inches
Inner width: 4 7/8 inches
Inside width at jaw hinge posts: 4 7/16 inches
Jaw width: 9/16 inch padded jaw
Jaw thickness: 3/8 inch
Main trap springs: Two 0.135 inch diameter wire coil-springs
Base plate: Not reinforced
Padding: Manufacturer-supplied rubber pads

Any trap that has similar specifications may be considered a BMP trap regardless of brand or source of modification, although performance information on all other BMP criteria (see Introduction: "Criteria for Evaluation of Trapping Devices" pages 4-6) needs to be considered as well. The trap tested was the Woodstream™ Victor No. 1 1/2 Softcatch™ coil-spring, with 0.135 inch diameter wire coil-springs (Figure GF4).

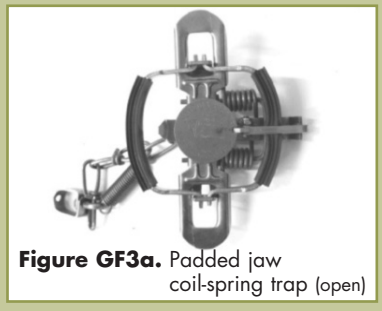

Figure GF3a. Padded jaw coil-spring trap (open)

Figure GF3b. Padded jaw coil-spring trap (closed)

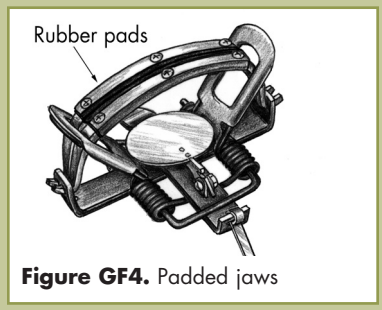

Figure GF4. Padded jaws

Additional Information

- Chain attachment used in trap testing: 6 inch, center-mounted with three swivels, one shock spring and anchored with a stake.
- Selectivity features: Brass pan tension machine screw; pan tension was set so two pounds of pressure triggered the trap and was checked and readjusted as needed after every capture.
- Special considerations for practicality: Some damage to trap pads should be expected and will require occasional replacement as a normal part of trap maintenance and upkeep. Special care should be taken to prevent odor contamination of the rubber jaws. Avoid using petroleum-based dye directly on the rubber pads.

Average Mechanical Description and Attributes

Inside jaw spread (at dog): 4 1/2 inches
Inner width: 4 7/8 inches
Inside width at jaw hinge posts: 4 9/16 inches
Jaw width: 9/16 inch padded jaw
Jaw thickness: 3/8 inch
Main trap springs: Two 0.131 inch diameter wire coil-springs
Additional springs: Two 0.100 inch diameter wire coil-springs
Base plate: Reinforced with D-ring
Padding: Manufacturer-supplied rubber pads

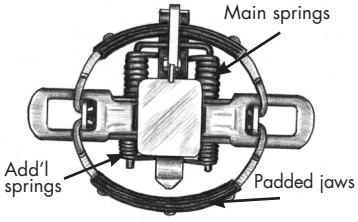

Figure GF5a. Padded jaw coil-spring trap (open)

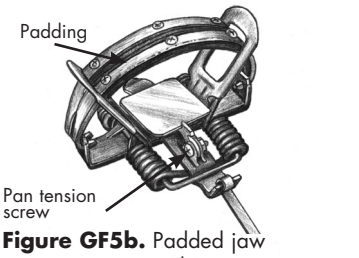

Figure GF5b. Padded jaw coil-spring trap (closed)

Any trap that has similar specifications may be considered a BMP trap regardless of brand or source of modification, although performance information on all other BMP criteria (see Introduction: "Criteria for Evaluation of Trapping Devices" pages 4-6) needs to be considered as well. The trap tested was the Woodstream™ Victor No. 1 1/2 Softcatch™ modified coil-spring, four-coiled (Figures GF5a–GF5b).

Additional Information

- Chain attachment used in trap testing: 6 inch, center-mounted with three swivels, two shock springs, and anchored with a stake.
- Selectivity features: Brass pan tension machine screw; pan tension was set so two pounds of pressure triggered the trap and was checked and readjusted as needed after every capture.
- Special considerations for practicality: Some damage to trap pads should be expected and will require occasional replacement as a normal part of trap maintenance and upkeep. Special care should be taken to prevent odor contamination of the rubber jaws. Avoid using petroleum-based dye directly on the rubber pads. This device also meets BMP criteria for opossums, red foxes, Eastern coyotes and bobcats.

Average Mechanical Description and Attributes

Inside jaw spread (at dog): 4 5/16 inches
Inner width: 4 1/4 inches
Inside width at jaw hinge posts: 4 9/16 inches
Jaw width: 1/2 inch smooth round jaw
Jaw thickness: 1/4 inch
Main trap springs: Two 0.122 inch diameter wire coil-springs
Base plate: Not reinforced
Padding: Commercially available, post-production rubber pads

Any trap that has similar specifications may be considered a BMP trap regardless of brand or source of modification, although performance information on all other BMP criteria (see Introduction: "Criteria for Evaluation of Trapping Devices" pages 4-6) needs to be considered as well. The trap tested was the Woodstream™ Victor No. 1 1/2 coil-spring trap with Humane Hold™ pads.

Additional Information

- Chain attachment used in trap testing: 6 inch, center-mounted with two swivels, one shock spring and anchored with a stake.
- Selectivity features: Brass pan tension machine screw; pan tension was set so two pounds of pressure triggered the trap and was checked and readjusted as needed after every capture.
- Special considerations for practicality: Some damage to trap pads should be expected and will require occasional replacement as a normal part of trap maintenance and upkeep. During BMP trap testing, Humane Hold™ pads were attached to trap jaws with plastic cable ties. Special care should be taken to prevent odor contamination of the rubber jaws. Avoid using petroleum-based dye directly on the rubber pads. This device also meets BMP criteria for red foxes.

Average Mechanical Description and Attributes

Inside jaw spread (at dog): 4 1/2 inches
Inner width: 4 5/8 inches
Inside width at jaw hinge posts: 5 inches
Jaw width: 5/8 inch padded jaw
Jaw thickness: 3/8 inch
Main trap springs: Two 0.137 inch diameter wire coil-springs
Base plate: Not reinforced
Padding: Manufacturer-supplied rubber pads

Any trap that has similar specifications may be considered a BMP trap regardless of brand or source of modification, although performance information on all other BMP criteria (see Introduction: "Criteria for Evaluation of Trapping Devices" pages 4-6) needs to be considered as well. The trap tested was the BMI No. 2 Cushion Catch™ padded coil-spring.

Additional Information

- Chain attachment used in trap testing: 6 inch, center-mounted with two swivels, one shock spring and anchored with a stake.
- Selectivity features: Brass pan tension machine screw; pan tension was set so two pounds of pressure triggered the trap and was checked and readjusted as needed after every capture.
- Special considerations for practicality: Some damage to trap pads should be expected and will require occasional replacement as a normal part of trap maintenance and upkeep. Special care should be taken to prevent odor contamination of the rubber jaws. Avoid using petroleum-based dye directly on the rubber pads. This device also meets BMP criteria for red foxes.

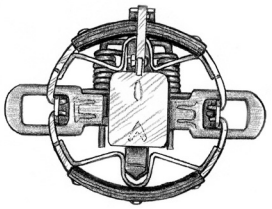

Figure GF7a. Double jaw padded trap (open)

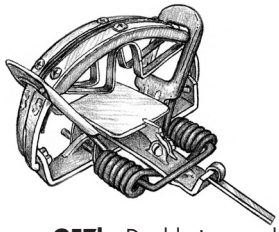

Figure GF7b. Double jaw padded trap (closed)

Double Jaws (Figures GF7a and GF7b)

Average Mechanical Description and Attributes

Inside jaw spread (at dog): 4 1/2 inches
Inner width: 4 15/16 inches
Inside width at jaw hinge posts: 4 1/2 inches
Jaw width: 9/16 inch
Jaw thickness: 5/16 inch
Main trap springs: Two 0.125 inch diameter wire coil-springs
Base plate: Not reinforced
Padding: Manufacturer-supplied rubber pads
Pan stop: Yes
Distance from trap pan with pan stop to bottom of auxiliary jaw when closed: 1 inch

Any trap that has similar specifications may be considered a BMP trap regardless of brand or source of modification, although performance information on all other BMP criteria (see Introduction: "Criteria for Evaluation of Trapping Devices" pages 4-6) needs to be considered as well. The trap tested was the Woodstream™ Victor No. 1 1/2 Softcatch™ coil-spring, modified with double jaws and a pan stop (Figures GF7a–GF7b).

Additional Information

- Chain attachment used in trap testing: 6 inch, center-mounted with two swivels, one shock spring and anchored with a stake.
- Selectivity features: Brass pan tension machine screw; pan tension was set so two pounds of pressure triggered the trap and was checked and readjusted as needed after every capture.
- Special considerations for practicality: Some damage to trap pads should be expected and will require occasional replacement as a normal part of trap maintenance and upkeep. Special care should be taken to prevent odor contamination of the rubber jaws. Avoid using petroleum-based dye directly on the rubber pads. This device also meets BMP criteria for opossums.

Offset, Laminated and/or Wide Jaws (Figures GF8–GF10b)

Average Mechanical Description and Attributes

Inside jaw spread (at dog): 3 3/4 inches
Inner width: 3 3/16 inches
Inside width at jaw hinge posts: 3 1/2 inches
Jaw width: 3/8 inch smooth round jaw
Jaw thickness: 1/8 inch
Jaw thickness with lamination: 5/16 inch
Lamination: 3/16, above-jaw lamination
Main trap springs: Two 0.120 inch diameter wire coil-springs
Base plate: Not reinforced

Any trap that has similar specifications may be considered a BMP trap regardless of brand or source of modification, although performance information on all other BMP criteria (see Introduction: "Criteria for Evaluation of Trapping Devices" pages 4-6) needs to be considered as well. The trap tested was the Woodstream™ Victor No. 1 coil-spring, modified with laminated jaws (lamination on top) (Figure GF8).

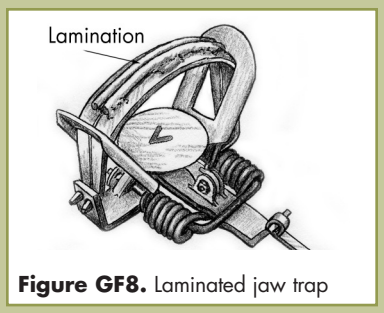

Figure GF8. Laminated jaw trap

Additional Information

- Chain attachment used in trap testing: 6 inch, center-mounted with two swivels, one shock spring and anchored with a stake.
- Selectivity features: Brass pan tension machine screw; pan tension was set so two pounds of pressure triggered the trap and was checked and readjusted as needed after every capture.

Average Mechanical Description and Attributes

Inside jaw spread (at dog): 5 1/16 inches
Inner width: 4 9/16 inches
Inside width at jaw hinge posts: 5 1/16 inches
Jaw width: 7/16 inch smooth round jaw
Jaw thickness: 5/16 inch
Jaw thickness with lamination: 1/2 inch
Jaw offset: 3/16 inch
Lamination: 3/16, above-jaw lamination
Main trap springs: Two 0.135 inch diameter wire coil-springs
Base plate: Not reinforced

Any trap that has similar specifications may be considered a BMP trap regardless of brand or source of modification, although performance information on all other BMP criteria (see Introduction: "Criteria for Evaluation of Trapping Devices" pages 4-6) needs to be considered as well. The trap tested was the Woodstream™ Victor No. 1.75 coil-spring, modified with offset, laminated jaws (lamination on top) (Figure GF9).

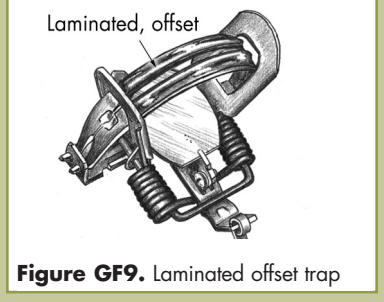

Figure GF9. Laminated offset trap

Additional Information

- Chain attachment used in trap testing: 9 1/2 inch, center-mounted with two swivels, one shock spring and anchored with a stake.
- Selectivity features: Brass pan tension machine screw; pan tension was set so two pounds of pressure triggered the trap and was checked and readjusted as needed after every capture.
- Special considerations for practicality: This device also meets BMP criteria for bobcats, red foxes, Eastern coyotes and Western coyotes.

Figure GF10a. Laminated jaw trap (open)

Figure GF10b. Laminated offset trap (closed)

Average Mechanical Description and Attributes

Inside jaw spread (at dog): 4 3/8 inches
Inner width: 4 3/8 inches
Inside width at jaw hinge posts: 4 11/16 inches
Jaw width: 1/2 inch wide, smooth jaw
Jaw thickness: 5/16 inch
Main trap springs: Two 0.125 inch diameter wire coil-springs
Base plate: Reinforced, D-ring chain attachment

Any trap that has similar specifications may be considered a BMP trap regardless of brand or source of modification, although performance information on all other BMP criteria (see "Criteria for Evaluation of Trapping Devices": Introduction pages 4-6) needs to be considered as well. The trap tested was the MB-450-FOX™ coil-spring trap (Figures GF10a and GF10b).

Additional Information

- Chain attachment used in trap testing; 12 inch chain center-mounted with three swivels, one in-line shock spring, and anchored with a stake.
- Selectivity features: Pan tension set so two-four pounds of pressure triggered the trap, and was checked and readjusted as needed after capture.

Powered Cable Devices (Foot Capture) (Figures GF11a and GF11b)

Average Mechanical Description and Attributes

Inside jaw spread (at dog): 6 3/8 inches
Inner width: 5 3/4 inches
Inside width at frame hinge posts: 6 inches
Cable retention frame width: 1/8 inch, smooth round rod
Cable retention frame thickness: 1/8 inch rod
Main trap springs: Two 0.188 inch diameter rod quick release springs
Cable diameter: 1/8 inch cable
Minimum loop circumference: 2 inches
Base plate: Not reinforced

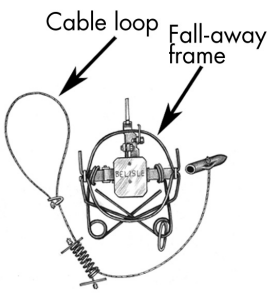

Figure GF11a. Powered cable device

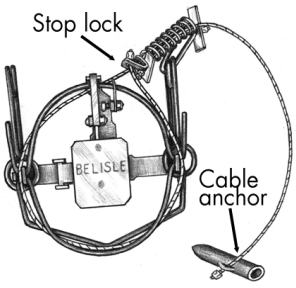

Figure GF11b. Powered cable device (set)

Any cable device that has similar specifications may be considered a BMP device regardless of brand or source of modification, although performance information on all other BMP criteria (see Introduction: "Criteria for Evaluation of Trapping Devices" pages 4-6) needs to be considered as well. The trap tested was the Belisle™ Foot Snare.

Additional Information

- Cable attachment on device tested: Swivel and shock spring with a cable anchor.
- Selectivity features: Pan tension machine screw; pan tension was set so two pounds of pressure triggered the trap and was checked and readjusted as needed after every capture; large cable diameter and available plastic sleeve work to prevent the cable from closing to a small diameter, thus eliminating the incidental take of small mammals, such as squirrels, skunks, etc.
- Special considerations for practicality: Some damage and kinking of cables should be expected following capture and will require frequent replacement as a normal part of trap maintenance and upkeep. This device also meets BMP criteria for red foxes, bobcats, Eastern coyotes and Western coyotes.

Cage Traps (Figure GF10)

Average Mechanical Description and Attributes

Cage material, and mesh size: 12 gauge galvanized steel wire mesh, 1 x 2 inches
Cage size (length x width x height): 32 x 10 x 12 3/4 inches
Door size (width x height): 10 x 12 inches
Weight: 14 pounds
Door closure: Spring operated

Any trap that has similar specifications may be considered a BMP trap regardless of brand or source of modification, although performance information on all other BMP criteria (see Introduction: "Criteria for Evaluation of Trapping Devices" pages 4-6) needs to be considered as well. The trap tested was the Tomahawk™ Cage Trap, No. 108.

Additional Information

- Selectivity features: Limited opening size and length restricts large animals.
- Special considerations for practicality: Versatile set options (baited sets and blind sets only with double doors); can be used for multiple furbearer species in same sets; large and easily seen (difficult to conceal completely); bulky—requires space for transport and storage; easy to operate—requires little training; can be used to transport captured animals; captured animals are easily released; continues to operate in freezing weather conditions. This device also meets BMP criteria for raccoons and opossums.

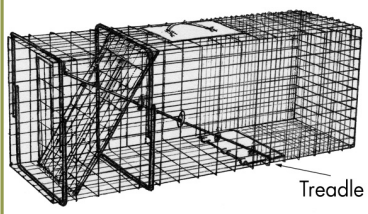

Figure GF12. Cage trap