

Best Management Practices

Trapping Coyotes in the Western United States



ASSOCIATION *of*
FISH & WILDLIFE
AGENCIES

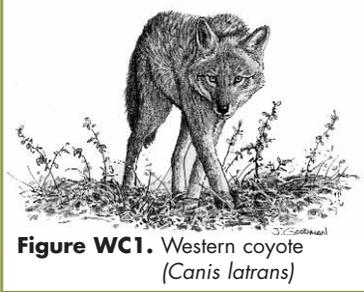


Figure WC1. Western coyote
(*Canis latrans*)

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 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 BMP 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. It does not present a single choice that can or must be applied in all cases. They are meant to be implemented in a voluntary and educational approach. BMPs are the product of on-going work that may be updated as additional traps are identified through future scientific testing.

The Western Coyote at a Glance

Characteristics

The Western coyote is a medium to large member of the canid family (Figure WC1). Adults average 20 to 35 pounds, and males are larger than females. Primarily nocturnal, but may be active during the day. The scientific name is *Canis latrans*.

Range

Coyotes occur throughout North America from the edge of the northern tundra south to Central America. In the United States, all 48 contiguous states and Alaska have populations, though densities vary with habitat quality. Densities are highest in the Plains region and in the south-central states.

Habitat

Originally an inhabitant of the open grasslands and prairies of the Western United States and southern Canada, the coyote has adapted to a wide range of habitat conditions from southern swamps to northern spruce-fir forests. They also occur in urban and suburban environments, including some of the largest cities in the United States.

Food Habits

Coyotes are opportunistic predators. They commonly prey upon small animals (mice, rabbits, reptiles, and insects), sometimes including pets, and often consume scavenged food items and carrion, as well as fruits, seeds, and other plant material. Coyotes also kill mammals such as deer, antelope, and livestock.

Reproduction

Breeding occurs in late winter, and three to six pups are born about 60 days after breeding. Females normally do not breed until their second winter. Pairs may remain together for several years; both parents care for pups. Young usually disperse from their birth range in the fall when they are about six months old.

Populations

Population trends vary across the Western United States, but coyotes are generally abundant, and becoming less wary of people. Coyote densities are highly variable depending on habitat quality and range from one animal for every five square miles to an average of six animals per square mile. Adult coyotes may range over an area of 2-20 square miles, depending on the time of year. Family groups defend well-defined territories; pairs and solitary individuals do not.

Comments

Coyote range has expanded dramatically since the mid-1800s. Coyote populations spread from western grasslands north to Alaska, west across the Rocky Mountains to the Pacific Ocean, and east to the Atlantic coast. This increase in population and range occurred during a time of extensive habitat change and despite concerted efforts to control and eradicate them. Few other mammals have shown such adaptability. As coyotes have occupied suburban areas they have become less wary of people, and in recent years attacks on people have been documented.

Coyotes cause considerable damage to livestock and natural resources in the western regions of the United States. Even with coyote damage management programs in place, livestock producers lose in excess of \$12 million in direct predation by coyotes annually. Additionally, coyote management is necessary to help recover some threatened and endangered species.

General Overview of Traps Meeting BMP Criteria for Coyotes in the Western United States

Two basic types of traps were tested for coyotes: foothold restraining traps and cable devices (Table WC2). Examples, brief descriptions, and mechanical details of the various makes and models that meet BMP criteria are given in the next section.

Table WC2. Overview of traps meeting BMP criteria for coyotes in the Western United States

Trap Category	Jaw/Frame Characteristics	Inside Jaw/ Frame Spread at Dog*	Inside Width at Jaw/ Frame Hinge Posts*
Coil-spring	Padded	5 ³ / ₁₆	6 ⁷ / ₁₆
	Unmodified	4 ¹¹ / ₁₆ - 6 ¹ / ₈	5 - 6 ³ / ₈
	Offset, laminated and/or wide	5 ¹ / ₁₆ - 5 ¹³ / ₁₆	5 ¹ / ₁₆ - 6 ³ / ₈
Powered Cable Device	Smooth, round rod, ¹ / ₈ inch cable	6 ³ / ₈	6

* Inches



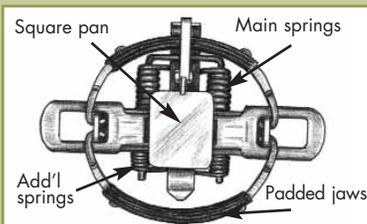


Figure WC3a. Padded jaw coil-spring trap (open)

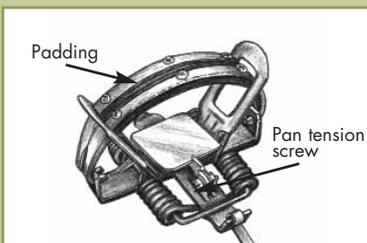


Figure WC3b. Padded jaw coil-spring trap (closed)

General Considerations When Trapping Western Coyotes

Jaw-type Traps

- Many currently-used trap models meet specifications;
- Pan-tension set at 2 pounds improves selectivity and foot placement in the trap;
- Captures and holds animals alive, allowing for release.

Powered Cable Devices (foot capture)

- Pan-tension set at 2 pounds improves selectivity;
- Large cable-loop diameter minimizes capture of smaller species;
- Cables require frequent replacement;
- Captures and holds animals alive, allowing for release.

Specifications of Traps Meeting BMP Criteria for Coyotes in the Western 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. 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. This list is provided for information purposes only, and does not imply an endorsement of any manufacturer.

These are average mechanical measurements which are rounded to the nearest $\frac{1}{16}$ inch. There may be up to $\frac{1}{8}$ inch variation in specifications 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 WC3a and WC3b)

Average Mechanical Description and Attributes

Inside jaw spread (at dog): $5 \frac{3}{16}$ inches

Inner width: $6 \frac{1}{16}$ inches

Inside width at jaw hinge posts: $6 \frac{7}{16}$ inches

Jaw width: $\frac{9}{16}$ inch round padded jaw

Jaw thickness: $\frac{3}{8}$ inch

Padding: manufacturer supplied rubber pads

Main trap springs: Two 0.145 inch wire-diameter springs

Additional springs: Two 0.115 inch wire-diameter springs

Base plate: Reinforced with D-ring

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 pp. 4-6) needs to be considered as well. The trap tested was the Woodstream™ Victor No. 3 Softcatch coil-spring, modified with four-coils.

Additional Information

- Chain attachment used in trap testing: 18 inch center-mounted with three swivels, two shock springs, and anchored with a stake.
- Selectivity features: Brass pan tension machine screw; pan tension set so two pounds of pressure triggered the trap, and 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 Eastern coyotes.



Unmodified Jaws (Figures WC4a and WC4b)

Average Mechanical Description and Attributes

- Inside jaw spread (at dog): 5 1/4 inches
- Inner width: 4 9/16 inches
- Inside width at jaw hinge posts: 5 inches
- Jaw width: 1/2 inch smooth round jaw
- Jaw thickness: 1/8 inch
- Main trap springs: Two 0.145 inch wire-diameter 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 "Criteria for Evaluation of Trapping Devices": Introduction pp. 4-6) needs to be considered as well. The trap tested was the Woodstream™ Victor No. 1.75 coil-spring.

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 set so two pounds of pressure triggered the trap, and checked and readjusted as needed after every capture.
- Special considerations for practicality: This device also meets BMP criteria for red foxes and Eastern coyotes.

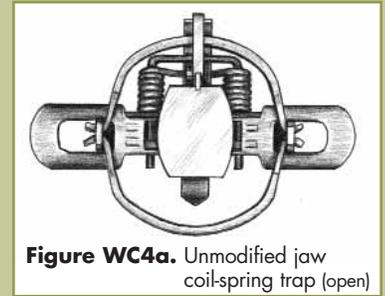


Figure WC4a. Unmodified jaw coil-spring trap (open)

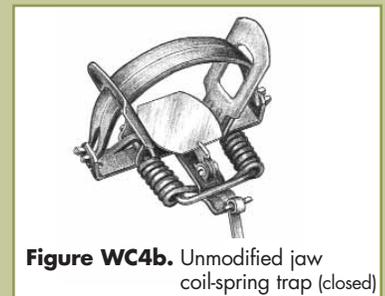


Figure WC4b. Unmodified jaw coil-spring trap (closed)

Average Mechanical Description and Attributes

Inside jaw spread (at dog): 6 1/8 in.
Inner width: 5 7/8 in.
Width at jaw hinge posts: 6 3/8 in.
Jaw width: 5/8 in. smooth round jaw
Jaw thickness: 3/16 in.
Main trap springs: Two 0.160 inch wire-diameter 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 "Criteria for Evaluation of Trapping Devices": Introduction pp. 4-6) needs to be considered as well. The trap tested was the Bridger™ No. 3 coil-spring.

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 set so two pounds of pressure triggered the trap, and checked and readjusted as needed after every capture.



Average Mechanical Description and Attributes

Inside jaw spread (at dog): 4 11/16 in.
Inner width: 4 7/8 in.
Width at jaw hinge posts: 5 3/8 in.
Jaw width: 7/16 in.
Jaw thickness: 7/16 in.
Main trap springs: Two 0.150 inch wire-diameter springs
Base plate: Reinforced with D-ring

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 pp. 4-6) needs to be considered as well. The trap tested was the Coyote Cuff™ No. 22 coil-spring.

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: Pan tension set so two pounds of pressure triggered the trap, and checked and readjusted as needed after every capture.



Offset, Laminated and/or Wide Jaws (Figures WC5a, WC5b, WC5c and WC7d)

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 wide, smooth round jaw
Jaw thickness: ⁵/₁₆ inch
Jaw thickness with lamination: ¹/₂ inch
Lamination: ³/₁₆ inch above-jaw lamination
Jaw offset: ³/₁₆ inch
Main trap springs: Two 0.135 inch wire-diameter 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 "Criteria for Evaluation of Trapping Devices": Introduction pp. 4-6) needs to be considered as well. The trap tested was the Woodstream™ Victor No. 1.75 coil-spring trap modified with offset, laminated jaws (lamination on top).

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 set so two pounds of pressure triggered the trap, and checked and readjusted as needed after every capture.
- Special considerations for practicality: This device also meets BMP criteria for red foxes and Eastern coyotes.



Average Mechanical Description and Attributes

Inside jaw spread (at dog): 5 inches
Inner width: 4 ¹¹/₁₆ inches
Inside width at jaw hinge posts: 5 inches
Jaw width: ³/₈ inch wide, smooth round jaw
Jaw thickness: ³/₁₆ inch
Jaw thickness at flat face: ¹/₄ inch
Jaw offset: ¹/₄ inch
Main trap springs: Two 0.142 inch wire-diameter 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 "Criteria for Evaluation of Trapping Devices": Introduction pages 4-6) needs to be considered as well. The trap tested was the Oneida-Victor™ No. 1.75 coil-spring trap, wide jaw, offset.

Wide jaw, offset



Figure WC5a. Wide jaw, offset trap

Laminated, offset



Figure WC5b. Laminated, offset trap

Additional Information

- Chain attachment used in trap testing: 18 inch center-mounted with three swivels, one shock spring, and anchored with a stake.
- Selectivity features: Pan tension machine screw; pan tension set so two-four pounds of pressure triggered the trap, and was checked and readjusted as needed after every capture.
- Special considerations for practicality: This device meets BMP criteria for Eastern coyotes and Western coyotes.



Average Mechanical Description and Attributes

Inside jaw spread (at dog): 5 1/4 inches

Inner width: 4 11/16 inches

Inside width at jaw hinge posts: 5 1/16 inches

Jaw width: 3/8 inch wide, smooth round jaw

Jaw thickness: 3/16 inch

Jaw thickness at flat face: 1/4 inch

Jaw offset: 3/16 inch

Main trap springs: Two 0.153 inch wire-diameter 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 "Criteria for Evaluation of Trapping Devices": Introduction pages 4-6) needs to be considered as well. The trap tested was the Oneida-Victor™ No. 2 coil-spring trap, wide jaw, offset.

Additional Information

- Chain attachment used in trap testing: 18 inch center-mounted with three swivels, one shock spring, and anchored with a stake.
- Selectivity features: Pan tension machine screw; pan tension set so two-four pounds of pressure triggered the trap, and was checked and readjusted as needed after every capture.
- Special considerations for practicality: This device meets BMP criteria for Eastern coyotes and Western coyotes.



Average Mechanical Description and Attributes

Inside jaw spread (at dog): 5 1/2 inches
Inside jaw spread (between below-jaw lamination): 5 inches
Inner width: 5 1/16 inches
Inside width at jaw hinge posts: 5 9/16 inches
Jaw width: 7/16 inch hexagonal jaw
Jaw thickness: 3/16 inch
Jaw thickness with lamination: 7/16 inches
Lamination: 3/16 inch below-jaw lamination
Jaw offset: 3/16 inch
Main trap springs: Two 0.145 inch wire-diameter springs
Additional springs: Two 0.11 inch wire-diameter springs
Base plate: Reinforced with D-ring

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 pp. 4-6) needs to be considered as well. The trap tested was the Bridger™ No. 2 modified with square jaw, offset laminated coil-spring, four-coiled (lamination on bottom of jaw).

Additional Information

- Chain attachment used in trap testing: 18 inch center-mounted with three swivels, two shock springs, and anchored with a stake.
- Selectivity features: Brass pan tension machine screw; pan tension set so two pounds of pressure triggered the trap, and checked and readjusted as needed after every capture.
- Special considerations for practicality: This device also meets BMP criteria for red foxes and Eastern coyotes.



Average Mechanical Description and Attributes

Inside jaw spread (at dog): 5 3/4 inches
Inner width: 5 1/4 inches
Inside width at jaw hinge posts: 6 inches
Jaw width: 1/2 inch wide, square jaw
Jaw thickness: 3/16 inch
Jaw thickness with lamination: 1/2 inch
Lamination: 1/4 inch above-jaw lamination
Jaw offset: 3/16 inch
Main trap springs: Two 0.150 inch wire-diameter springs
Base plate: Reinforced with D-ring

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 Montana Special™ No. 3 dogless coil-spring trap modified with offset, laminated jaws (lamination on top of jaws).

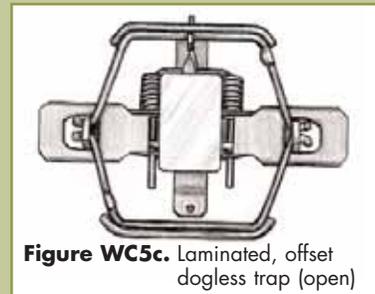


Figure WC5c. Laminated, offset dogless trap (open)



Figure WC5d. Laminated, offset dogless trap (closed)

Additional Information

- Chain attachment used in trap testing: 18 inch center-mounted with three swivels, one shock spring, and anchored with a stake.
- Selectivity features: Pan tension machine screw; pan tension set so two-four pounds of pressure triggered the trap, and was checked and readjusted as needed after every capture.
- Special considerations for practicality: This device meets BMP criteria for Eastern coyotes and Western coyotes.



Average Mechanical Description and Attributes

Inside jaw spread (at dog): 5 1/2 inches

Inside jaw spread (between below-jaw lamination): 5 inches

Inner width: 6 inches

Inside width at jaw hinge posts: 6 3/8 inches

Jaw width: 1/2 inch hexagonal jaw

Jaw thickness: 3/16 inch

Jaw thickness with lamination: 5/8 inch

Lamination: 3/16 inch above-jaw, 3/16 below-jaw

Jaw offset: 1/4 inch

Main trap springs: Two 0.160 inch wire-diameter springs

Additional springs: Two 0.115 inch wire-diameter springs

Base plate: Reinforced with D-ring

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 pp. 4-6) needs to be considered as well. The trap tested was the Bridger™ No. 3 coil-spring, modified, offset (by manufacturer), double laminated, four-coiled.

Additional Information

- Chain attachment used in trap testing: 18 inch center-mounted with three swivels, two shock springs, and attached to a metal grapple.
- Selectivity features: Brass pan tension machine screw; pan tension set so two pounds of pressure triggered the trap, and checked and readjusted as needed after every capture.
- Special considerations for practicality: This device also meets BMP criteria for Eastern coyotes.

Average Mechanical Description and Attributes

Inside jaw spread (at dog): 5 ³/₄ inches

Inner width: 5 ⁵/₁₆ inches

Inner width at jaw hinge posts: 5 ¹³/₁₆ inches

Jaw width: ¹/₂ inch

Jaw thickness: ³/₈ inch

Jaw offset: ¹/₄ inch

Main trap springs: Four 0.148 inch wire-diameter springs

Base plate: Reinforced with D-ring

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 pp. 4-6) needs to be considered as well. The trap tested was the Minnesota Brand MB650™ offset coil-spring, four-coiled.

Additional Information

- Chain attachment used in trap testing: 18 inch center-mounted with three swivels, two shock springs, and anchored with a stake.
- Selectivity features: Brass pan tension machine screw; pan tension set so two pounds of pressure triggered the trap, and checked and readjusted as needed after every capture.



Average Mechanical Description and Attributes

Inside jaw spread (at dog): 5 ¹³/₁₆ inches

Inner width: 5 ⁷/₁₆ inches

Inner width at jaw hinge posts: 5 ⁷/₈ inches

Jaw width: ¹/₂ in. smooth round jaw

Jaw thickness: ³/₈ inches

Jaw offset: ¹³/₁₆ inches

Main trap springs: Four 0.146 inch wire-diameter springs

Base plate: Reinforced with D-ring

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 pp. 4-6) needs to be considered as well. The trap tested was the Sterling™ MJ600 offset coil-spring trap, four-coiled.

Additional Information

- Chain attachment used in trap testing: 18 inch center-mounted with three swivels, two shock springs, and anchored with a stake.

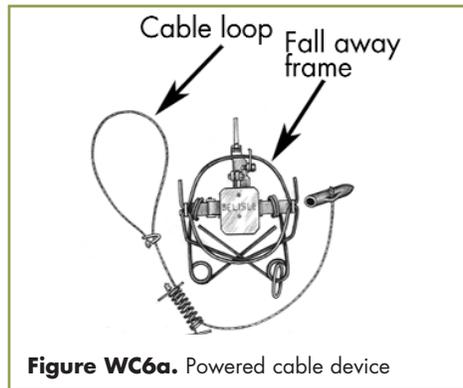


Figure WC6a. Powered cable device

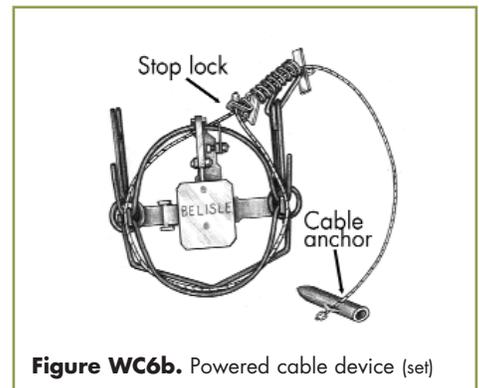


Figure WC6b. Powered cable device (set)

Powered Cable Devices (foot capture) (Figures WC6a and WC6b)

Average Mechanical Description and Attributes

Inside cable retention frame 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 wire-diameter rod quick-release springs

Cable diameter: ¹/₈ inch cable

Cable loop stop size: 2 inches

Base plate: Not reinforced

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 "Criteria for Evaluation of Trapping Devices": Introduction pp.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; large cable diameter and available plastic sleeve work to prevent the cable from closing to a small diameter, thus allowing small animals such as squirrels, skunks, and some raccoons to escape.
- Special considerations for practicality: Some damage and kinking of cable should be expected and will require frequent replacement as a normal part of trap maintenance and upkeep.