

TECHNICAL NOTES

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To: All Field and Area Offices
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Wildlife Watering Facilities

General Guidelines:

Supplemental water is generally not a limiting factor for native New Mexico wildlife species. Use the Wildlife Habitat Evaluation Guides (WHEGS) to determine whether adding watering facilities will improve habitat conditions for the target species. Remember, there is a difference between adequate and optimum. Water may not be the limiting factor but additional watering facilities may be needed to optimize wildlife habitat for the target species.

The following technical information will help determine the spacing and volume needed in wildlife watering facilities for the target species.

Site Selection:

- A guzzler should be placed outside gullies, arroyos, or draws to avoid flood damage and siltation. The facility should be protected from sunlight as much as possible. Orienting the tank so that the open end faces north helps keep water temperatures down and will minimize evaporation if no shade is available. South facing slopes are preferable to help with thawing water in the winter.
- For all watering facilities, a near by food supply is critical for use by the selected wildlife species.
- Requirements for near by cover will vary depending on the target species. For instance mule deer will be reluctant to use a site more than 500 feet from escape cover while pronghorn may be reluctant to use a site with any significant brush around it.

Spacing:

Spacing of watering facilities is based on the estimated distances wildlife will travel to water. The following distances are suggested spacings for watering facilities (Hoffman, et al. 1993, Rintamaki 1986, SCS 1973, Schmidt 1996).

Species	Optimum (miles)	Maximum (miles)
Pronghorn	2	4
Mule Deer	0.5	1
Elk	0.5	1

Chukar	0.5	1
Most quail species	0.25	1
Pheasant	0.5	1
Turkey	1	2
Mourning dove	3	5

Typical Wildlife Water Use (Schmidt, 1996)

Species	Amount
Pronghorn	1-2 gal/day
Mule Deer	1-2 gal/day
Elk	5-8 gal/day
Chukar	750 gal/covey/year
Quail	750 gal/covey/year
Turkey	7 gal./100 head/day
Pheasant	2-5 gal/flock/day
Mourning dove	2-5 gal/flock/day

Efficiency and spans of apron materials (Kie et al. 1996)

Material	Efficiency (%)	Life span (years)
Steel	98	25
Asphalt roofing	86-92	8
Plastic covered with 1" of gravel	66-87	8-15
Butyl rubber	98	15-20
Asphalt paving	95	15

Water storage needs are calculated using the low number in the average annual precipitation range along with the expected number of animals and their water needs. New Mexico precipitation data can be found in the Field Office Technical Guide, section 2, under “climatic data”.

For guzzlers the tank should be sized to hold enough water for the target species for one year. The apron should be sized to fill the storage tank once each year. Potential yield of the apron surface can be calculated using the following formula based on the lowest average annual precipitation amounts. For example, if you are located in a 14-16 inch precipitation zone, you would use 14 inches as your expected precipitation amount.

Gallons needed X 12

$$\text{Apron Size (sq ft)} = \frac{\text{Gallons needed X 12}}{\text{Average minimum precipitation X 7.48 X efficiency}}$$

Example: A small herd of pronghorn (15) uses 30 gallons of water per day or 10,950 gallons/year (2 gallons/head/day x 365 days). For this example we are located in an 8 –

10” precipitation zone, so we use 8” as our average minimum precipitation. We want to use a round, butyl rubber apron on a prefabricated guzzler. Plug these numbers into the above equation and the result is $(10,950 \text{ gallons} \times 12) / (8 \times 7.48 \times 0.98) = 2,240 \text{ sq. ft.}$ (apron size). For a round apron, this equates to a 26.7 ft. diameter apron. Wildlife become habituated to water availability. When drought occurs and even the lower precip range fails to provide water to keep the development serving wildlife needs supplemental water should be considered to keep local populations from crashing.

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