Ringtail

Bassariscus astutus

REGULATORY STATUS

USFWS: No special status
USFS R2: No special status
USFS R4: No special status
Wyoming BLM: No special status
State of Wyoming: Nongame Wildlife

CONSERVATION RANKS

USFWS: No special status
WGFD: NSSU (U), Tier III
WYNDD: G5, S1S2
Wyoming Contribution: LOW
IUCN: Least Concern

STATUS AND RANK COMMENTS

The Wyoming Natural Diversity Database has assigned Ringtail (*Bassariscus astutus*) a state conservation rank ranging from S1 (Critically Imperiled) to S2 (Imperiled), indicating uncertainty regarding its status in Wyoming. This uncertainty stems from a paucity of information on population trends and extrinsic stressors in the state.

NATURAL HISTORY

Taxonomy:

Evolutionarily, Ringtail is the most primitive Procyonid [1, 2]. The genus has been researched heavily to elucidate the deep evolution of the Procyonidae, the sister Family Mustelidae, and Order Carnivora. As many as 14 subspecies of *B. astutus* have been recognized in the past [1], but there is substantial confusion and debate over their legitimacy. After an exhaustive comparison of skulls from across the species' range, Kortlucke [3] recognized only 3 subspecies. Other researchers recommend recognizing only the species-level taxon [4]. Wyoming likely supports only the alleged subspecies *B. a. arizonensis*, with the distant possibility of *B. a. nevadensis* and *B. a. flavus* in the southwestern and southeastern corners of the state, respectively. However, these 3 purported subspecies are in broad contact with one another and with other subspecies to the south [5] and are unlikely to represent discrete biological units.

Description:

The general appearance of Ringtail is that of a large weasel with a foxlike head and face. It is similar in size and form to the Pacific Marten (*Martes caurina*) but with noticeably lighter pelage (gray to light tan), dark eyes surrounded by white providing a "masked" appearance, and a large and well-furred tail strikingly annulated with black and white rings. Total length 618–811 mm; tail 310–438 mm; adult weight 870–1100 g [1]. Ringtail is unlikely to be confused with any other Wyoming mammal under adequate viewing conditions. If viewed only briefly, the annulated tail

may convey an impression of the more common (but much larger) Northern Raccoon (*Procyon lotor*).

Distribution & Range:
Ringtail occurs from southern Mexico north to Kansas, southern Wyoming, and Oregon. The range is often mapped eastward to Louisiana and Arkansas, but eastern records may be of translocated animals. The species has a well-known history of deliberate and inadvertent human translocations. It commonly lives in close association with people, can be semi-domesticated, and has even been known to travel long distances on rail cars before escaping. Ringtail can persist in non-standard habitats following translocation [1, 4, 6]. The species has been documented only a few times in extreme southern Wyoming [7]. Wyoming animals are assumed to derive from natural populations instead of human-mediated translocations. Precise distribution and frequency of occurrence of Ringtail in Wyoming are poorly known. In 2012, Lonsinger [8] failed to document Ringtail at an Idaho site where a carcass was documented in 2003 – this apparently tenuous occupation may apply all along the species' northern range boundary, including southern Wyoming.

Habitat:
Ringtail is a habitat generalist at elevations below the lower montane zone. Although habitat use in Wyoming has not been studied, information from the core of the species' range suggests it is unlikely to occupy landscapes at mid-montane and higher elevations [1, 9]. In most of its United States range, Ringtail typically occupies dry, rocky, canyon-type settings covered with mixed woodland and shrubland. It may prefer to forage in well-developed riparian zones, and is often captured in riparian settings. However, the species can exist independent of free water, meeting its water needs solely through animal prey and succulent vegetation – Ringtail kidneys are strongly adapted for water conservation [1, 10]. Rock crevices, small caves, hollow trees, fallen logs, and similar structures are important as cover and den sites, and Ringtail is unlikely to be found in habitats lacking such features [1, 10, 11]. Ringtail is often found in human-dominated landscapes, including agricultural and suburban settings, where slash piles, buildings, and other human structures (even wooden nest boxes) are readily used [12]. Ringtail is extremely agile and able to traverse through heavy vegetation, rock cliffs, and rubble with ease – the species is arboreal and even fossorial as necessary [4].

Phenology:
Ringtail is active year-round. In core range to the south of Wyoming, breeding generally occurs February-May [1]. At northern sites such as Wyoming, breeding may occur during the latter part of this period. Pregnancy lasts 51–54 days. Newborns are altricial, become full-furred at 6 weeks, are weaned at 10–12 weeks, and achieve full size at 30 weeks. Ringtail can breed as young-of-year, but typically do not until they are 2 years old. The species is strongly nocturnal [1, 10].

Diet:
The diet of Ringtail is diverse and varies with availability at any given location and season. There is some indication of a preference for animal prey over vegetation, but in general the species is an opportunistic and generalist omnivore. Principal food items for wild Ringtail include small mammals (up to *Lepus* in size), lizards, snakes, large arthropods, conifer leaves and cones, and fruits of all types. Carrion is occasionally eaten, as are birds. Nest predation has not been documented but is a strong possibility. Frogs and even fish have been noted in some diet studies [1, 10, 13].

CONSERVATION CONCERNS

Abundance:
Continental: WIDESPREAD
Wyoming: VERY RARE
There are no population estimates of Ringtail in Wyoming or adjacent regions. The VERY RARE abundance in the state is inferred from the small portion of the state suspected to be occupied, and the apparent infrequency with which animals are documented. Ringtail appears to be rare within suitable habitat in the occupied area [14].

Population Trends:
Historic: UNKNOWN
Recent: UNKNOWN
Historic and recent population trends of Ringtail in Wyoming are unknown.

Intrinsic Vulnerability:
LOW VULNERABILITY
Although Ringtail appears to occur at rather low densities in Wyoming, it is a diet and habitat generalist that is likely robust to some disturbances. Southern Wyoming forms the species' northern range boundary, suggesting that population segments here may be operating at the limits of climatic tolerance (with winter conditions assumed to be most limiting). The species is known to be susceptible to several diseases and parasites, and can be subject to high rates of predation [1, 10]. Mortality from pathogens and predators may impact vital rates more in tenuously-suitable regions like Wyoming than in more favorable sites. If future investigations bear this out, intrinsic vulnerability may need to be re-assessed as Moderate.

Extrinsic Stressors:
UNKNOWN
So little is known about Ringtail in Wyoming that any outline of extrinsic threats is somewhat speculative. The species is occasionally trapped as a furbearer in the core of its range to the south [1, 10]. However, as a nongame species, Ringtail are not trapped in Wyoming. Almost 90% of commercial Ringtail fur now comes from farmed animals [4]. Wildfire may degrade habitat quality, especially when it removes important denning substrate such as woody vegetation and debris [4]. However, the species is assumed to be a habitat generalist, which could insulate population segments from disturbances to particular environments. A general susceptibility to pathogens and predators is mentioned above. Without more information on Ringtail habitat use and life history it is difficult to discuss threats and threat mitigation with any certainty [15].

KEY ACTIVITIES IN WYOMING

Currently, there is no research being conducted on Ringtail in Wyoming. The increasing use of camera traps to inventory other carnivores – e.g., ongoing research on spotted skunk (*Spilogale* spp.) by the Wyoming Game and Fish Department (WGFD) – may document Ringtail if such devices are placed in appropriate habitat in the state. An upcoming project by the WGFD to evaluate trends and habitat of piñon-juniper (*Pinus edulis – Juniperus* spp.) obligate species in southwestern Wyoming may also include the use of remote camera traps to assess presence and distribution of nocturnal meso-carnivores, including Ringtail, but this effort is still in the preliminary planning stages.

ECOLOGICAL INFORMATION NEEDS

Very little is known about Ringtail in Wyoming. There are so few records of the species in the state that basic distribution, habitat preferences, diet, breeding phenology, and potential threats are poorly understood. A better estimate of actual distribution in the state may be the top priority information need at this time.

MANAGEMENT IN WYOMING

This section authored solely by WGFD; Nichole L. Bjornlie. Ringtail is assigned an NSSU rank because survey data that would provide for an assessment of population status are lacking. Consequently, priorities in Wyoming in the short-term will focus on addressing these data deficiencies. Of particular importance are data on population status and trends and a more refined understanding of distribution within the state. Because of the low density and limited distribution of Ringtail on the landscape, acquiring these data will likely require targeted survey efforts. Additional priorities will focus on assessing limiting factors and habitat requirements for this northern range boundary, which will ultimately be used to develop management and conservation recommendations.

CONTRIBUTORS

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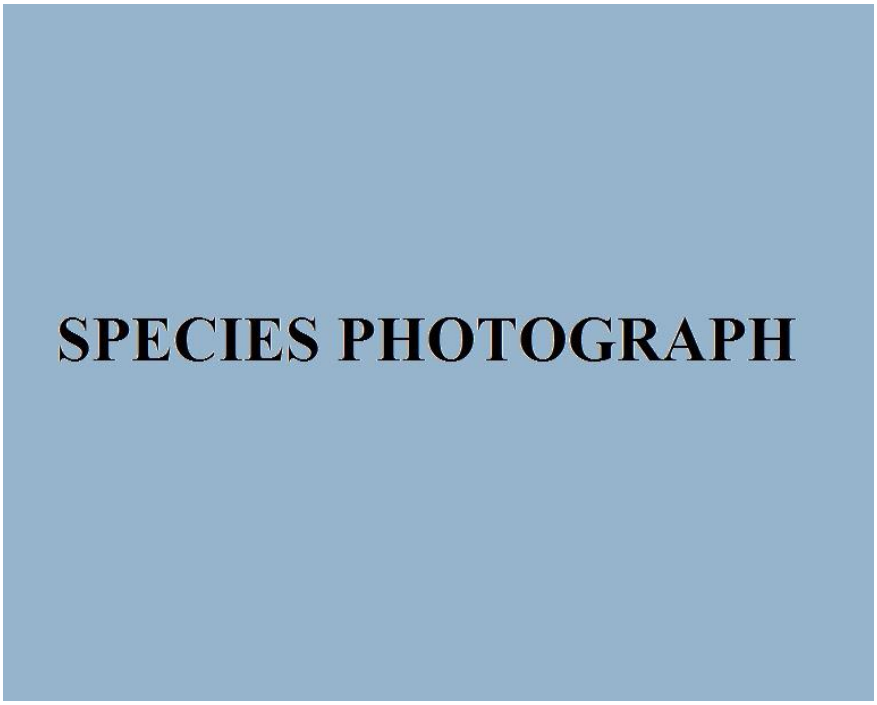

Figure 1: Photo not available.

Figure 2: North American range of *Bassariscus astutus*. (Map from: Patterson, B. D., et al. (2007) Digital Distribution Maps of the Mammals of the Western Hemisphere, version 3.0, NatureServe, Arlington, Virginia.)

HABITAT PHOTOGRAPH

Figure 3: Photo not available.

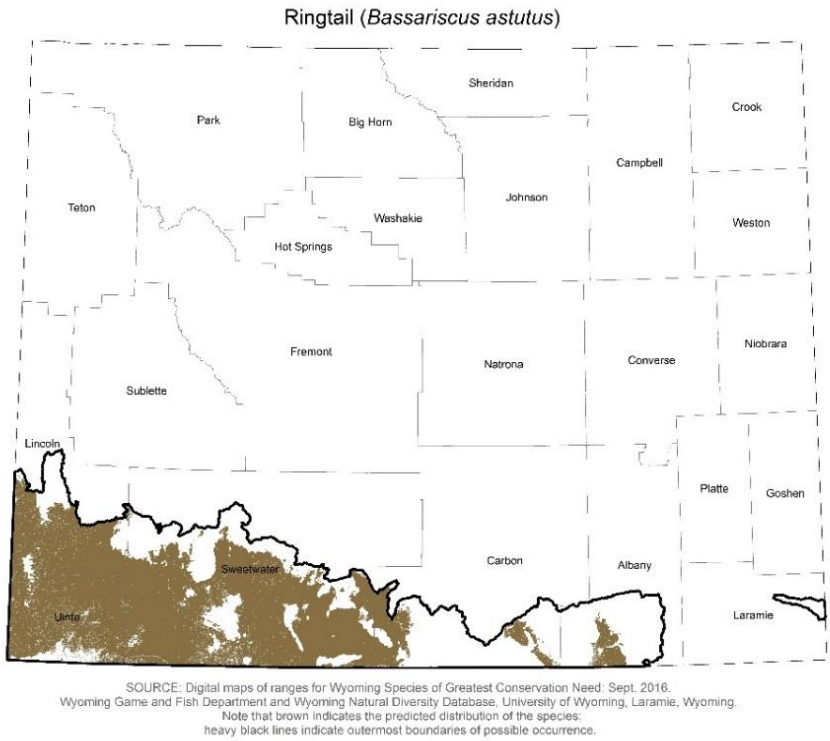

Figure 4: Range and predicted distribution of *Bassariscus astutus* in Wyoming.