

**ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM**

Animal Abstract

Element Code: ABNSB01020

Data Sensitivity: Yes

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Otus flammeolus*

COMMON NAME: Flammulated Owl, Flammulated Screech Owl, Flammulated Scops Owl,
Ticolote ojo oscuro [Spanish]

SYNONYMS:

FAMILY: Strigidae

AUTHOR, PLACE OF PUBLICATION: *Otus flammeolus*, Kaup, in Jardine, Contrib.
Ornithol. (1852) p. 111. 1853. *Scops (Megascops) flammeola*, Kaup, 1852. in Jardine, Contr.
Orn. (1853) p. 111.

TYPE LOCALITY: Mexico.

TYPE SPECIMEN: Unknown

TAXONOMIC UNIQUENESS: Monotypic species. Subgenus: *Scops (Megascops)*
flammeola

DESCRIPTION: Species is monotypic. A small sized owl (second smallest in North America), but like most owls, the female is larger than the male. The body is 6.75 in (17 cm) long, wings average 5.0-5.7 in (12.7-14.5 cm), tails 2.1-2.6 in (5.3-6.6 cm), and the wingspan ranges between 14 –19 in (36-48 cm). They are the only small North American owl with dark irises. They have small ear tufts, and the beak is gray-brown. The adult plumage is characterized by a grayish white facial disk bounded on the outside by a cinnamon-colored band that is narrow in the lower parts and wide above the eye. The facial disk is divided by a V-shaped band of white feathers (eyebrows) that diverges from the beak and terminates at a pair of ear tufts. The back is primarily brown mixed with gray. Ninepipes (accessed 2005) reports that dorsally, owls are mottled gray with distinct rusty colored shoulder spots, creating a line from the shoulder down across the side of the wing. The breast is grayish white with buffy areas irregularly barred with black, becoming lighter toward the lower breast and legs. The larger dorsal wing coverts have large cinnamon orange and buff spots that form a bright “flame” stripe across the shoulder. The tail feathers are gray with narrow buffy stripes. The plumage coloration serves as a camouflage that helps blend with bark of the trees were they roost (Grindrod 2005). (Glinski 1998).

There are two distinct color phases: gray and red/brown. Gray in the northern parts of the breeding range and red/brown in the southern. The facial disk coloration corresponds to the

color phase. Note: Third coloration phase, the red-phase, is still under debate on whether it is another phase that occurs.

Nestlings are initially covered with snowy white down, with pinkish-gray bills and feet, and have dark blackish brown iris (Johnsgard 2002). Within ten days (Reynolds 1998), the upper parts of the juveniles are horizontally barred with gray and dusky colors, and the under parts have a dull white or grayish-white base with a rusty-gray or grayish-rust color. Replacement of the juvenal plumage begins around the eyes several days after fledging. Some of the juvenal plumage still remains on the back and breast six weeks after fledging. (Glinski 1998).

AIDS TO IDENTIFICATION: *Otus flammeolus* is one of four owl species that have dark eye coloration, the other three being the Barn Owl (*Tyto alba*), the Spotted Owl (*Strix occidentalis*), and the Barred Owl (*Strix varia*). However, the dark brown eyes are found in no other small owl. The ear tufts are short compared to the screech-owls. *O. flammeolus* differs from other *Otus* and *Megascops*, in that they are lacking a typical trill song, and it has short tufts and an incomplete facial disk beginning at the ears and ending at the moustache.

ILLUSTRATIONS: Illustration and Color photo (Johnsgard, 2002).
Colored drawing (Richard Sloan, in Glinski 1998: Plate 31)
Color Photos (In <http://www.owlpages.com/species.php?genus=Otus&species=flammeolus>)
Calls and Photos (In <http://www.owling.com/Flammulated.htm>)
Color Photos (In http://www.peregrinefund.org/Explore_Raptors/owls/flammula.html).
Color Photo: (Brian Currie in <http://www.utahbirds.org/birdsofutah/BirdsD-K/FlammulatedOwl.htm>).
Color Photos (In <http://www.fosbirds.org/gallery/FlamOwl.html>)
Color Illustration (Joe Thornbrugh in <http://fwp.state.mt.us/fieldguide/mediaDisplay.aspx>)
Color Illustrations (Sibley, 2000).

TOTAL RANGE: Breeds from southern British Columbia south to southern California, Arizona, New Mexico, Texas, and central Mexico. Winters from central Mexico south to the highlands of Guatemala and El Salvador, with rare individuals wintering in southern Arizona, New Mexico, and southern California.

RANGE WITHIN ARIZONA: In Arizona, they are so tied to yellow pine and mixed conifer forests that simply identifying mountains containing these forests will specify most of the range. These mountain ranges include the Bradshaw, Chiricahua, Hualapai, Huachuca, North Kaibab, Pinaleno, Rincon, Santa Catalina, Santa Rita, and White mountains. Rare individuals winter in southern Arizona. (Glinski 1998).

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: *Otus flammeolus* are nocturnal/crepuscular, singing mostly on moonlit nights. The many vocalizations of the Flammulated Owl are soft and ventriloquistic. The best-known song, the territorial song, is the monotonous *boop-boop-boop-boop* (with two to four seconds between notes) used when establishing territories and attracting mates. With the exception of a loud scolding call resembling a harsh cat's meow, given by both sexes when their nestlings or fledglings are threatened, all the other vocalizations are very soft (Glinski 1998). They are highly migratory, and may be considered by some to be the most migratory species of North American owls. Migration behaviors are poorly understood for the various subspecies (McCallum 1994). The species has been recorded to live up to 7-8 years of age (NatureServe 2005). Individuals occupy same breeding territory in successive years. Territory size (5.2 square kilometers) usually remains the same from year to year, even if adjacent territories are unoccupied.

REPRODUCTION: Monogamous mating. *O. flammeolus* nests in tree cavities in or adjacent to mature or old-growth stands. Commonly nests in abandoned Pileated Woodpecker (*Dryocopus pileatus*) and/or Northern Flicker (*Colaptes auratus*) tree holes, usually 15-40 feet above ground. No nest lining is added, thus they lay their eggs on remnant material in the hole. *O. flammeolus* lay 3-4 faintly cream colored eggs from about mid-April through July; eggs are about 1 inch long. Incubation, which is performed mostly by the female, lasts 21-22 days, but up to 26 days has been recorded; the male feeds the female during incubation. Owlets are born altricial (downy), and with their eyes closed. Young are tended by both sexes. Broods fledge over two nights, however, young fledging on the same night stay together. The young fledge at 21- 25 days, staying within 100 yards of the nest and being fed by the adults for the first week (Ashley 2004). Broods then separate into two parts, each tended by one adult. Day roosts remain within 300 feet of nest for two weeks. Young owls are independent about four weeks (46-57 days) after fledging.

FOOD HABITS: *O. flammeolus* are entirely insectivores and the majority of foraging happens during dusk and dawn; nocturnal moths are especially important during spring and early summer (Ashley 2004). They prefer to forage in yellow pine and/or Douglas-fir, with these forest types apparently supporting their favored Lepidopteron prey (McCallum 1994b in Montana). As summer progresses and other prey become available, Lepidopteron larvae, Orthopteran, Arachnids, and Coleopteran are included in their diet. Breeding diet primarily consists of flying insects captured around trees in flight by sallying from a perch. They also glean other arthropods on trees and occasionally on the ground.

In Colorado, Flammulated Owls used four foraging tactics. Hawk-gleaning, consisting of flying from a perch to capture a resting arthropod. Hover-gleaning, which consists of flying from a perch to glean arthropods from adjacent tree crowns while hovering. The drop-pounce, used in middle to late summer by adults and fledglings, consists of dropping from a lower perch to pounce on arthropods on the ground. Hawking, which is the least-used tactic, consists of owls flying from a perch to capture flying insects in the air. (Glinski 1998).

HABITAT: In Arizona, they are found primarily in mixed conifer, pine, and pine-oak habitats, but they also occur locally in woodlands of pinyon-juniper, oak, and cypress. To see a Flammulated Owl in Arizona, go in early May through early July to a south-facing slope in the upper part of the ponderosa pine zone that has large, old ponderosa pine trees mixed with Douglas fir and/or white fir and plenty of snags. (Glinski 1998). *O. flammeolus* are also present where the oaks or pines are large and dense at the lower edge of the so-called transition (warm-temperate forest) zone, as it enters the “Upper Sonoran” (hot desert) zone (Johnsgard 2002). Throughout its range in North America, they primarily nest in dry coniferous forests composed of one or more species of yellow pine mixed with other conifer species and often with oak or quaking aspen (Glinski 1998).

ELEVATION: 5,000 - 8,000 ft. (1525 - 2440 m).

PLANT COMMUNITY: Throughout its range in North America, they nest in dry coniferous forests composed of one or more species of yellow pine mixed with other conifer species, and often with oak or quaking aspen. In Arizona, they are found in mixed conifer, pine, and pine-oak forests, but also can be found locally in woodlands of pinyon-juniper, oak, and cypress. (Glinski 1998).

POPULATION TRENDS: Unknown. *O. flammeolus* have a slow reproductive rate, which may add to a decline in populations. According to NatureServe (2005), total population numbers are unavailable. Still relatively common in appropriate habitats, which offers reason for optimism, but since its habitat has declined and population trends and adult survivorship are unknown, the species deserves conservation attention. In British Columbia, the estimated breeding population is at least 1200 to 1500; total population probably exceeds 3000. Many sources also say common in some areas while almost completely absent in others.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS:	None
STATE STATUS:	None
OTHER STATUS:	None (USDA, FS Region 3 1999) Forest Service Sensitive [USDA, FS Region 3, 1988] Group 4 (NNDFW, NESL 2001, 2005) Special Concern, on schedule 1 [Canada SARA].

MANAGEMENT FACTORS: It appears that they require the presence of oaks in pine forest; not found in cut-over forests. Maintaining habitat in landscapes that contain a greater proportion of open canopy yellow pine and/or dry Douglas-fir stands, and greater proportions

of mature and old growth stands may be especially important to owls (NatureServe 2005). Managing for open physiognomy of preferred forest types to restore pre-settlement strands structures (for example, through thinning, selective harvest and controlled burning) would benefit this species (NatureServe 2005). Insecticides may have an effect on these owls. This species depends on other cavity nesters to excavate its cavities, so a loss of some of these species would have a major impact.

PROTECTIVE MEASURES TAKEN:

SUGGESTED PROJECTS: Studies need to be performed that would help determine life history factors, productivity, survivorship, habitat, and population status.

LAND MANAGEMENT/OWNERSHIP:**SOURCES OF FURTHER INFORMATION****REFERENCES:**

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MAJOR KNOWLEDGEABLE INDIVIDUALS:**ADDITIONAL INFORMATION:**

The population extending from the Hualapai Mountains east across the Mogollon Plateau, and from the Bradshaw Mountains east to the New Mexico border north of the Gila River, may be a unique subspecies that is as yet undescribed.

The common and scientific names of the Flammulated Owl, are derived from a Latin word for “flame” (*flammula*), reflecting the red-orange plumage of its facial disk and body (Glinski 1998).

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