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Cataract Creek Black Swift Colony: Some History and Natural History

Cataract Creek History:

In 1997 I visited the Cataract Creek canyon and observed 3 black swift nest structures. One nest contained a single well-feathered young swift. The other 2 nests were empty. Two days later I rappelled down the cliff wall to the nest ledge and banded the young swift. This was the first black swift banded in Colorado since 1965.

At this visit I found 2 active swift nests, which is very close to the number (3) of nests found by Al Knorr when he discovered the colony in 1949, nearly 50 years earlier.

This nesting location was found by Al Knorr in July of 1949, and described in his now classic analysis of black swift natural history published in 1961. Knorr's discovery of swift nests here were the first ever documented in Colorado. In 1949, Knorr estimated the total colony size to be less than 5 pairs, very similar to my colony estimate in 1997, and in many subsequent years. This suggests that the Cataract Creek black swift nesting colony has remained quite small yet very stable over the past 50+ years.

The location of the nest I found in 1997 was very close to the location described by Knorr where he found a nest in 1949. I am confident the nest I found was at least on the same cliff wall where Knorr found a nest in 1949. This pattern of very strong site fidelity, including long term use of the same nest structure, has been a consistent finding at known black swift nesting sites across the state of Colorado.

Black swifts are colonial nesters, and occupied sites tend to be found in groups of nearby sites. Cataract Creek has 2 near neighbors; Bandora Creek and Porcupine Creek. Porcupine Creek has a single nest, and Bandora Creek has one or possibly two nesting pairs. Together, this group of nests numbers less than 10 nesting pairs.

Unique Natural History Facts:

Black swifts are designated a "Sensitive Species" in the 5-state Rocky Mountain Region of the USFS. This designation is due to the very small number of known breeding sites, the very small average size of nesting colonies, and very restricted nature of nesting sites available for use by swifts.

Black swifts have been found nesting almost exclusively at waterfalls, almost always within or very near the curtains of falling water. Nests have rarely been found outside the spray zone. Nests are rarely found in locations where they receive more than an hour or 2 of direct sunlight. Nests are always placed in niches (pockets) on sheer vertical cliff walls where ground predators cannot access them.

Based on 10 years of intensive inventories and site surveys, we believe the total number of swift colonies in Colorado is less than 150. The average size of swift colonies in Colorado is 2.5 pairs, and ranges from 1 to 18 pairs. The largest colony known in Colorado is Box Canyon Falls in Ouray. Based on average occupancy rates and the total number of known potential nesting sites, we estimate that Colorado's total nesting population is about 625 pairs, and probably does not exceed 1,000 pairs.

Black swift natural history is very unusual. Black swifts lay 1 only egg and raise only 1 young each season. They begin nesting in mid-summer, and young do not leave the nest until about mid-September. Swifts require a very cold and damp nesting site, for which the young have evolved a unique natal down that no other genus of birds has. For this reason, they have a very long nestling development period and young leave the nest much later than most other birds.

Adult black swifts forage primarily on winged ants caught in flight high over the mountain peaks that surround their waterfall nesting sites. They forage continually all day long, rarely returning to the nest with food for their single young until just before dark. Adults collect winged ants all day, rolling them into a ball (bolus) and storing them in a special pouch that they carry back to their nest. The young is fed from the bolus throughout the night, and left unattended the following day as the adults continue foraging. Adults forage at great distances from their nesting colonies, probably exceeding dozens of miles in radius.

Within 2 weeks of leaving the nest (mid to late September), the entire black swift population migrates south to a wintering area that is still mostly unknown. Recent advances in electronic wildlife monitoring have documented adult swifts wintering in the Amazon basin. However, there remain more questions about their migration routes and wintering areas, than answers.

For land managers, questions remain about what impact multiple uses might have on black swift nesting success and colony occupancy. Disturbance at nesting colonies has been suggested to possibly reduce success of individual nests, and ice climbing has been suggested to possibly reduce the availability of moss required for nest construction. However, careful monitoring of recreation impacts has failed to show any reduction in nest success or colony occupancy rates. Many waterfalls that receive active ice climbing in winter are also occupied by black swifts, including here at Cataract Creek.

Nestling black swift close to fledging (Fulton Cave, Flattops Wilderness Area)



Cataract Creek Nesting Colony – view from below in 1997:



Cliff wall in Cataract Creek canyon where black swifts nested in 1997



Banding black swifts at Cataract Creek in 1949

BIRDS OF COLORADO



BANDING BLACK SWIFT YOUNG

Nesting sites on steep cliffs adjacent to waterfalls are usually in perpetual shadow
(Jack Murphy and Scott Altenbach)

Black Swift Key Nest Site Habitat Characteristics:

Flowing Surface Water: The most documented nesting habitat requirement is close proximity to falling water. No Black Swift nests have been found along intermittent streams, thus year-round flows appear to be required. The nest structures are usually in small cavities within the spray zone or directly behind the sheets of falling water, and are described as wet and dark. Occasionally, nests are located away from the spray zone but these are usually on ledges that are moist from other water sources.

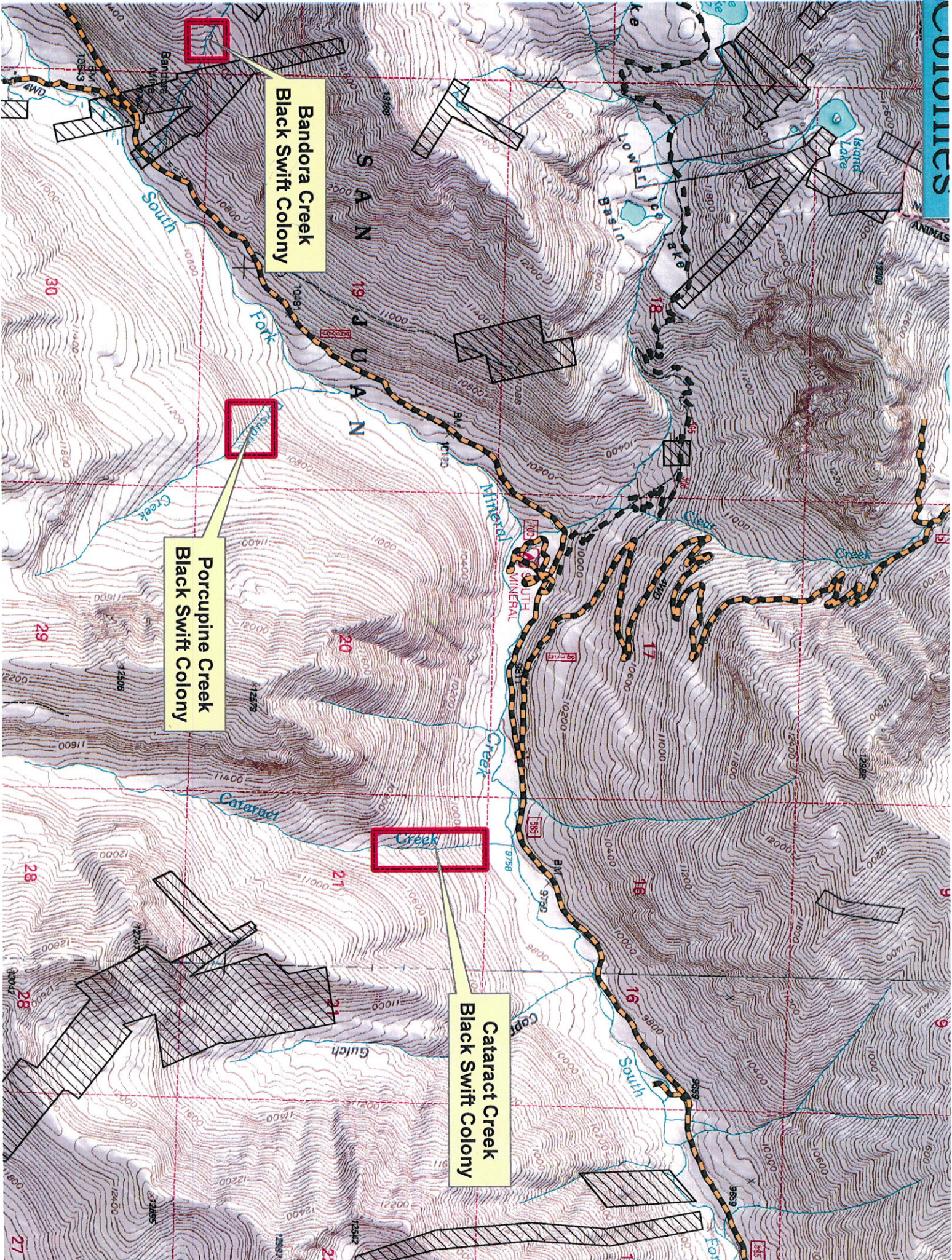
Commanding View (relief): The second most commonly noted nesting habitat attribute is a commanding view from the nest colony over the surrounding terrain. The ability of a swift to fly straight out from the nest colony and very quickly be hundreds of feet above the valley floor appears to be very important for site occupancy. Swifts are known to nest in the bottom of deep canyons and in caves but in these cases there is usually a broad view from the nest cliff down the canyon or from the mouth of the cave.

Number of Nest Niches and Accessibility to Ground Predators: Black Swift nests are almost always built in a small pocket or ledge on a sheer face. Occupied nest niches are always inaccessible to mammalian ground predators. The placement of nests out of reach of ground predators may be an evolutionary response to low reproductive rates. All reports of Black Swift clutch sizes are of one egg only. Therefore, failure of the nest structure itself is the leading cause of reproductive failure.

Unobstructed Aerial Access: A third habitat attribute that is related to commanding views is that aerial access to the nest niche is usually free of obstructions to flight. Black Swifts appear reluctant to fly near or through tree crowns and branches to access nest niches. Therefore, screening of potential nest cliffs by trees or other debris appears to significantly reduce the likelihood that otherwise suitable nest cliffs will be occupied by swifts.

Shaded Nest Sites: Black Swift nest ledges are rarely sunlit, and then only late in the day as ambient air temperatures decline. The nest structures are invariably placed in microsites that are in deep shade the majority of the day. However, nestlings do not appear bothered by sunlight and often become more active while in direct sunlight.

Moss Availability: The nest niche often has water flowing around or in front of the opening but the nest cup itself is usually dry. Because of their dampness and darkness, the nest niches are often covered with moss and other hydrophytic plants, and due to their ready availability, swift nests are constructed almost exclusively of mosses, lichens and other fine plant material.



**Bandora Creek
Black Swift Colony**

**Porcupine Creek
Black Swift Colony**

**Cataract Creek
Black Swift Colony**

SAN JUAN

SOUTH BASIN

COPPER GULCH

South Fork

Porcupine Creek

Cataract Creek

Island Lake

SOUTH MINERAL

South Creek

Creek

ANIMAS

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COLOMBIA