

## NORTHERN FLYING SQUIRREL

*GLAUCOMYS SABRINUS* (GIRARD, 1858)

NATURAL HISTORY SUMMARY BY BENNETT BUGBEE

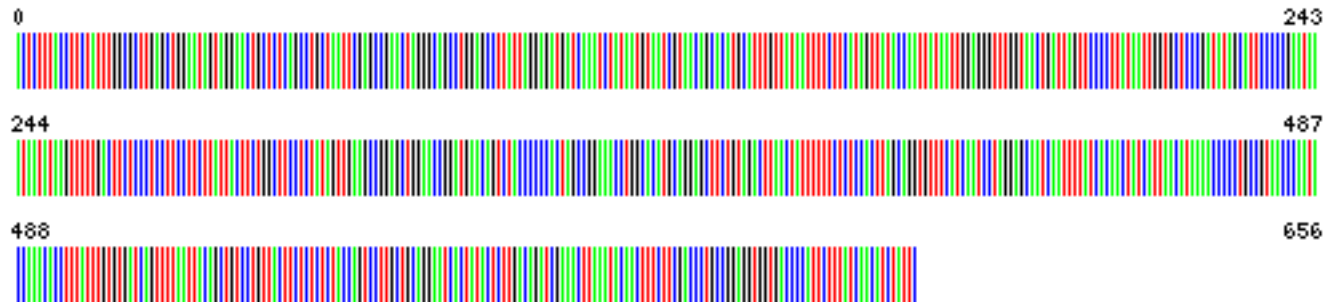


Figure 1. [Glacomys sabrinus DNA Barcode](#) - Barcode of Life Database – BOLD Systems (Ratnasingham and Hebert 2007)

### Classification

**Kingdom:** Animalia

**Phylum:** Chordata

**Class:** Mammalia

**Order:** Rodentia

**Family:** Sciuridae

**Genus:** *Glacomys*

**Species:** *G. sabrinus*

### Description

The Northern Flying Squirrel (*Glacomys sabrinus*) is a small squirrel, typically gray-brown with gray fur at the base of the belly (as compared to the Southern Flying Squirrel [*Glyacomys volans*] which has a white furry under belly) and a grayish tan to the underside of its tail (National Wildlife Federation; Saunders 1988). The tail is broad and flattened with fluffy fur and the body is 9 to 14 inches in length, slightly larger than the Southern Flying Squirrel (Studelska 1997; National Wildlife Federation). Big black eyes can appear to bulge out, being more laterally placed than on top of the head and small rounded ears lay posterior to the eyes (Studelska 1997).

“Flying squirrel” is a misnomer as this squirrel doesn’t actually fly, but rather, it “glides.” The patagium, a specialized membrane between its forelimbs and hindlimbs, allows the

Northern Flying Squirrel to travel farther in the air as it jumps between trees (National Wildlife Federation). To move from tree to tree it uses height to its advantage. Slight movements of its back limbs and tail allow it to steer and brake. The Northern Flying Squirrel can travel more than 150 feet in a single glide (National Wildlife Federation). The Northern Flying Squirrel does not become torpid and is more tolerant of the cold as compared to the Southern Flying Squirrel (Saunders 1988).

### **Distribution**

The Northern Flying Squirrel has a patchy range, but it broadly inhabits most of Alaska, Canada, the Pacific Northwest down the coast to southern California, northern Idaho, western South Dakota, around the Great Lakes and the Northeastern United States with some other miscellaneous patches (Cassola 2016; Wilson et al. 2005). The Northern Flying Squirrel's (*Glaucomys sabrinus*) [range map](#) is available at Cassola 2016.

### **Diet**

The Northern Flying Squirrel is largely omnivorous, consuming seeds, nuts, lichens, and fungi in the winter (National Wildlife Federation). As compared to the Southern Flying Squirrel, the Northern Flying Squirrel eats more fungi and spends a more time foraging (Saunders 1988). The Northern Flying Squirrel is considered a keystone species in the Pacific Northwest, because its diet facilitates a symbiotic relationship between fungi and the surrounding trees and because it is a critical prey for avian predators and mesocarnivores (Smith 2007). Food type is largely dependent upon the habitat locality, with some studies indicating that truffles (spring and fall) and lichen (winter) are key food sources (Smith 2007).

### **Habitat and ecology**

Habitats are generally located around food patches. Density is largely limited by food supply and the number of suitable nesting areas, along with predator presence (Smith 2007). Northern Flying Squirrels generally prefer coniferous and mixed forests but are also known to inhabit deciduous forests (Saunders 1988). They house in snags, former woodpecker (Picidae) holes and abandoned nests, which they line with lichens, fungi and grass (National Wildlife Federation; Studelska 1997). Sometimes, multiple squirrels

will nest in close proximity for warmth, but in general, they keep to their own space, in particular during the breeding season (National Wildlife Federation). Studies of spatial configuration of nests have suggested that females, who exhibit great overlap in their home-range, might exhibit some level of territoriality around dens during rearing of their young (Smith et al. 2011). Females are the primary providers of parental care, separating from conspecifics and establishing their own den whilst the offspring are dependent (Smith et al. 2011). Predators of the Northern Flying Squirrel include: owls (Strigiformes), hawks (Accipitridae), tree snakes (*Boiga irregularis*) and some climbing mammals (Saunders 1988; National Wildlife Federation). The Northern Flying Squirrels are largely nocturnal making them difficult to see in the wild (National Wildlife Federation n.d.).

### **Reproduction and life cycle**

The Northern Flying Squirrel exhibits monogamous mating. Females rear the young for approximately two months without any male presence; females are quite defensive and territorial during this stage (National Wildlife Federation). Breeding season is during the spring and can extend into the summer (National Wildlife Federation). The membrane between limbs is present at birth however, eyes and ears are shut for the first month. Nutrition is provided by the mother via milk and eventually smaller foods; full maturation is at around 18 months (Studelska 1997).

### **Conservation status**

As a whole, the Northern Flying Squirrel, *G. sabrinus*, is not of concern, but subspecies *G. s. coloratus* and *G. s. fuscus* are listed by the U.S. Fish and Wildlife Service as endangered due to habitat loss (Cassola 2016). The biggest threat to is habitat fragmentation by logging and other means of disabling the Northern Flying Squirrel of ample space in which to forage and nest. In the southern Appalachians, the roundworm parasite (*Strongyloides robustus*) found in Southern Flying Squirrels has been found to be lethal or debilitating to the Northern Flying Squirrel, potentially accounting for its decline in that region (Cassola 2016).

## Cultural significance

The Northern Flying Squirrel is not a rare species; it is not used for game and is rather unbothered by humans. Skydivers and base jumpers have successfully mimicked the patagium's morphology in the design of their wingsuits.

## Specimen specific detail

The Northern Flying Squirrel (*G. sabrinus*) specimen from the [Burton Ostenson Museum of Natural History](#) at Pacific Lutheran University was collected by D. L. Pattie on August 27, 1966 at Spanaway Park in Pierce Co., Washington. It has a lighter brown coloration with a dark base, the tail is more uniform in color and appears to be flattened. The ventral aspect of the body is whitish-grey with some tan/light brown spots along with some black spots but the base of the fur is gray; the underside of the tail has a grayish hue. Eyes have been removed and whitened; the limbs are tucked alongside the lateral aspect of the body and the membrane between them as been folded alongside as well. There are not apparent marks on the specimen besides the cut where it was gutted and mounted.

## Literature Cited

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