### Harris's Antelope Squirrel (Ammospermophilus harrisii)

**ORDER:** Rodentia FAMILY: Sciuridae

Extreme heat does not deter Harris's Antelope Squirrel from vigorous daytime activity. It is agile, scampering over sharp-spined cholla cactus without being pricked, and may sit on top of a cactus to look around. Antelope squirrels dig burrows, usually under desert shrubs such as mesquite, creosotebush, or palo verde, and eat mainly fruit and cactus seeds. Trapping studies indicate the species is found in low densities that vary seasonally. The squirrels are active year-round. They typically breed in December or January and have a litter of 5–9 young about a month later.

### Also known as:

Harris's Spermophile, Marmot Squirrel, Gray-tailed Antelope Squirrel, Yuma Antelope Ground Squirrel

**Sexual Dimorphism:** None

Length: Average: 238 mm Range: 216-267 mm

Weight: Average: 122 g



Credit: painting by Todd Zalewski from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)



### **FIELD NOTES**

### **Texas Antelope Squirrel** (Ammospermophilus interpres)

**ORDER:** Rodentia FAMILY: Sciuridae

Notable for its running speed, the Texas Antelope Squirrel has the longest hindlimbs and tail of any antelope squirrel. In the field, the squirrels are noticeable because of the way they carry the tail arched forward over the back. This common inhabitant of the Chihuahua Plateau occurs in rocky habitats in desert mountain ranges, nesting in burrows or in between rocks and crevices, and eating various seeds, berries, and insects. Antelope squirrels do not hibernate--they are active year round.

Also known as: Trader Spermophile

**Sexual Dimorphism:** None

Length: Average: 226 mm Range: 220-235 mm

Weight: Average: 110 g Range: 99–122 g



Credit: painting by Todd Zalewski from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)



### **FIELD NOTES**



### FIELD GUIDE TO NORTH AMERICAN MAMMALS White-tailed Antelope Squirrel (Ammospermophilus leucurus)

**ORDER:** Rodentia FAMILY: Sciuridae

White-tailed Antelope Squirrels can often be seen in western and southwestern deserts, especially in shrubby areas with rocky soil. They do not hibernate, but in cold winter weather several may huddle together in a burrow to keep warm. They breed from February to June, producing litters of 5–14 offspring. The young begin to appear aboveground when they are about six or seven weeks old, and nurse for about two months. Adults eat both plant matter and insects.

#### Also known as:

White-tailed Antelope Ground Squirrel, White-tailed Ground Squirrel, Antelope Chipmunk

**Sexual Dimorphism:** None

#### Length:

Average: 211 mm Range: 188-239 mm

Weight:

Average: 105 g Range: 96–117 g



Credit: painting by Todd Zalewski from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)



### **FIELD NOTES**



### Gunnison's Prairie Dog (Cynomys gunnisoni)

ORDER: Rodentia FAMILY: Sciuridae

In the spring, when Gunnison's prairie dogs emerge from hibernation, they eat new, green plants. Later in the summer, as plants begin to turn brown and dry out, they concentrate on flowers and seeds. Their colonies are made up of clans, each with an adult male, several females, and their young. A clan has its own burrows and feeding sites. When population density is low, clan territories have little overlap and territorial defense is not a high priority. When there are as many as 60 prairie dogs per hectare, territories are aggressively defended, with all members of a clan, young and old, actively participating.

#### Also known as: Zuni Prairie Dog

**Sexual Dimorphism:** Males are larger than females.

### Length:

Average: 335 mm males; 325 mm females Range: 317–390 mm males; 309–338 mm females

### Weight:

Average: 816 g males; 644 g females Range: 460–1,300 g males; 465–750 g females

### FIELD NOTES

DATE: \_\_\_\_\_ LOCATION: \_\_\_\_\_



Credit: painting by Todd Zalewski from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)



### **Black-tailed Prairie Dog** (Cynomys ludovicianus)

**ORDER:** Rodentia FAMILY: Sciuridae

Conservation Status: Near Threatened.

Black-tailed prairie dogs exhibit the most complex social behavior of all prairie dogs. Social groups called "coteries" live together in very large colonies called "towns." The largest town ever recorded stretched for 65,000 square km (25,000 square miles) under Texas prairie. An estimated 400 million prairie dogs lived there. Topographical or vegetational features serve to subdivide the towns into clusters of coteries. The members of each coterie cooperate to defend their territory against others. Black-tailed prairie dogs are active all year, although they may spend extended periods of time underground in winter. They breed in February or March and usually have 3 or 4 young, who are first seen aboveground in May or June.

### **Sexual Dimorphism:**

Males are larger than females.

### Length:

Average: 387.8 mm males; 371.2 mm females Range: 358-429 mm males; 340-400 mm females

### Weight:

Average: 907g males; 863 g females Range: 575-1,490 g males; 765-1,030 g females



Credit: painting by Todd Zalewski from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)



### **FIELD NOTES**



### Yellow-bellied Marmot (Marmota flaviventris)

**ORDER:** Rodentia FAMILY: Sciuridae

The Yellow-bellied Marmot has the thickset build characteristic of the genus. Its fur is relatively long and coarse, with buffy to yellowish hair running from the sides of the neck down along the chest. Because they favor herbaceous plants, their population density is often affected by the presence or absence of large grass-eating mammals. A moderate degree of grazing can increase the supply of the marmots' preferred herbs. Heavy grazing can reduce their food supply, if the grazing animals eat both grasses and herbs. Little or no grazing can also reduce the abundance of herbs because grasses out-compete herbs for space and soil nutrients. Yellow-bellied Marmots spend their summer days sunning (if the weather permits), grooming, and foraging. In hibernation, they depend for months on the fat stored in their bodies. Marmots that enter hibernation well-fattened have the best chance of surviving until spring.

### Also known as:

Rockchuck

### **Sexual Dimorphism:**

Males are larger than females.

#### Length:

Average: 618 mm males; 574 mm females Range: 490-618 mm males; 470-670 mm females

### Weight:

Range: 3-5.2 kg males; 1.6-4 kg females

### FIELD NOTES

DATE: \_\_\_\_\_ LOCATION: \_\_\_\_\_



Marmota flaviventris - lower right (with M. caligata -

(upper right) and M. olympus (left))

Credit: painting by Todd Zalewski from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)





### **Abert's Squirrel** (Sciurus aberti)

**ORDER:** Rodentia FAMILY: Sciuridae

Abert's Squirrels have a complicated relationship with ponderosa pine trees. These squirrels mostly live in pine forests and use the trees for shelter, nesting sites, and food. Where they exploit the pines extensively, the trees produce extra terpenes-chemicals that give pines their scent—to discourage the squirrels' appetites. These trees grow more slowly than pines in areas where Abert's Squirrel is absent and the trees produce less of these chemicals. The pines vary in the amount of toxins produced, and the squirrels select trees that are less toxic. A pine growing in squirrel range may suffer reduced vitality as a consequence of having its stems and seeds eaten by squirrels, or have its growth rate reduced because it is producing more toxins. However, the squirrels provide an important benefit to the pines by distributing fungal spores (through their feces), which as mature fungi are essential to the pines' health, so the relationship is a fascinating one.

Sciurus aberti - typical summer and winter coloration,

upper and mid right; black coloration, upper left; brown central Colorado coloration, mid left; North Grand Canyon (Kaibab) coloration, lower left

Credit: painting by Todd Zalewski from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)



### **FIELD NOTES**

DATE: \_\_\_\_\_ LOCATION: \_\_\_\_\_



Also known as: Tassel-eared Squirrel

None

Length:

Weight:

Average: 620 g Range: 540-971 g

**Sexual Dimorphism:** 

Range: 463-584 mm

### **Arizona Gray Squirrel** (Sciurus arizonensis)

**ORDER:** Rodentia FAMILY: Sciuridae

Conservation Status: Near Threatened.

Walnuts are a favorite food of Arizona Gray Squirrels, and when they find an abundance, the squirrels soon stain their faces, paws, and undersides a distinct brownish-orange from walnut juice. Other foods eaten may include fungi, acorns, juniper berries, pine seeds, and tree flowers and buds. This species is quiet and secretive and rarely seen. It is not very common and has a limited geographic distribution. Within its range, Arizona Gray Squirrels prefer broadleaf forests along rivers, which commonly occur in canyon bottoms.



Sciurus arizonensis

Credit: painting by Todd Zalewski from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

### **Sexual Dimorphism:** None

Length: Range: 455–574 mm

### Weight:

Average: 655g Range: 527-884 g



### **FIELD NOTES**



# Eastern Fox Squirrel (Sciurus niger)

ORDER: Rodentia FAMILY: Sciuridae

**Conservation Status:** The subspecies *S. niger shermani*, Sherman's fox squirrel, is Near Threatened.

Eastern Fox Squirrels have long, foxtail–like tails, which they flick when they are excited. They and Eastern Gray Squirrels are alike in many ways. They breed at the same time of year, nest in the same kind of places, and eat the same foods. However, Fox Squirrels prefer more open habitat, whereas Grays prefer good tree cover. Fox Squirrels spend more time foraging and running about on the ground than do the grays, and may be encountered in fields quite far from any trees, where gray squirrel would not stray. Both species feed on acorns, which are rich in tannins. Tannins are poisonous to many animals, including worms, and keep the squirrels free of roundworms and tapeworms. Fox Squirrels accumulate another chemical compound, porphyrin, in their bones and teeth, which makes their bones and teeth pink and bright red under ultraviolet light. Here's a mystery: Gray Squirrels eat the same foods and this does not happen to them—nor to any other healthy mammal.

### Also known as:

Fox Squirrel, Cat Squirrel, Stump-eared Squirrel

**Sexual Dimorphism:** 

None

### Length:

Average: 595 mm Range: 454–698 mm

Weight:

Average: 800 g Range: 696–1,233 g

Sciurus niger - typical color, right; southeastern variation,

top left; black variation, center top; black-headed variation, lower center

Credit: painting by Todd Zalewski from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)



### FIELD NOTES

DATE:	

LOCATION:



### FIELD GUIDE TO NORTH AMERICAN MAMMALS **Golden-mantled Ground Squirrel** (Spermophilus lateralis)

**ORDER:** Rodentia FAMILY: Sciuridae

Golden-mantled Ground Squirrels are familiar residents of open woodlands, brushy forest-edge habitats, dry margins of mountain meadows, and rocky slopes. They are quick to invade sunny, disturbed areas where pioneer plants provide good food resources. Because they have a stripe on the flank, they are sometimes mistaken for chipmunks, but the stripe does not continue onto the cheek as it does in Tamias species. Golden-mantled Ground Squirrels are solitary burrow-dwellers. They eat almost anything, including fungi, a variety of plants, fruits, and seeds, insects in all life-cycle stages, nestling birds and eggs, small mammals, and carrion. They hibernate from late summer through early spring, and like other hibernating mammals, put on fat reserves beforehand.

#### Length:

Average: 275 mm Range: 245–295 mm

Weight: Range: 175-350 g



Credit: painting by Todd Zalewski from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)



### **FIELD NOTES**



### **Mexican Ground Squirrel** (Spermophilus mexicanus)

**ORDER:** Rodentia FAMILY: Sciuridae

Mexican Ground Squirrels have adapted well to human activity and are common inhabitants of roadsides, cemeteries, and golf courses. They are omnivores, feeding on the seeds of a variety of grasses and forbs, green plant material, and larval and adult insects. This burrow-dwelling species can be found in small, social colonies. Alarm calls alert members of the colony to the presence of danger, and an erect posture is used to watch for potential predators. The species may be confused with the closely-related thirteen-lined Ground Squirrel, because both are marked by rows of white spots on the back. However, the Mexican Ground Squirrel has a paler coloration and larger body size.

Also known as: Gopher, Picket Pen

**Sexual Dimorphism:** Males are slightly larger than females.

Length: Range: 280-380 mm

Weight: Range: 137-330 g



Spermophilus mexicanus - upper right (shown with S.

spilomosa (center) and S. washingtoni (lower left)) Credit: painting by Todd Zalewski from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)



### **FIELD NOTES**



### **Spotted Ground Squirrel** (Spermophilus spilosoma)

**ORDER:** Rodentia FAMILY: Sciuridae

Spotted Ground Squirrels are among the smallest ground squirrels in North America. They inhabit arid and semi-arid regions of Mexico and the Southwest, and are found in scrubland and grassland as far north as Wyoming and Nebraska. They feed primarily on green grasses, forbs, and seeds, but also eat insect larvae, insects, and even small vertebrates such as lizards and kangaroo rats. Their principal predators include snakes and hawks. In the northern part of their range, they hibernate for long periods. It is not known whether this also occurs in the most southern reaches of the range.

Also known as: Gopher

Length: Range: 185-253 mm

Weight: Range: 100-200 g



Spermophilus spilomosa - center (with S. mexicanus (upper

right) and S. washingtoni (lower left))

Credit: painting by Todd Zalewski from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)



### **FIELD NOTES**



### FIELD GUIDE TO NORTH AMERICAN MAMMALS Thirteen–lined Ground Squirrel (Spermophilus tridecemlineatus)

**ORDER:** Rodentia FAMILY: Sciuridae

Thirteen-lined Ground Squirrels are often seen standing on their hind legs on roadsides or other places where grass is mowed, such as lawns, golf courses, or cemeteries. The squirrels probably once lived in short-grass prairie, and some human habitats suit them well. They dig a variety of burrows, from short ones used for escape to deeper, longer ones with nesting chambers. Like most ground squirrels, they hibernate. In hibernation, their heartbeat slows from more than 200 beats per minute to no more than five. How long they spend in hibernation annually depends on where they live, and at what elevation. Day length seems to determine when they enter hibernation in the fall, and some sort of internal clock prompts them to emerge in the spring. The Thirteen-lined Ground Squirrel's coat pattern is unique, with 13 dark and pale stripes running the length of the back; the dark stripes are patterned with small white spots.

### Also known as:

Gopher, Striped Ground Squirrel, Striped Gopher, Thirteen-lined Gopher, Striped Spermophile

## **Sexual Dimorphism:**

None

### Length:

Average: 250 mm Range: 170-310 mm

#### Weight:

Range: 110-140 g

### **FIELD NOTES**

DATE:	LOCATION:



Credit: painting by Todd Zalewski from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)



### **Rock Squirrel** (Spermophilus variegatus)

**ORDER:** Rodentia FAMILY: Sciuridae

Rock squirrels, with their long, bushy tails, look very much like tree squirrels, but seldom climb trees. They are most commonly found in rocky habitats-canyons, cliffs, and hillsides. Occasionally a nest is found in a tree, but they usually dig burrows, choosing a place that offers a near-by lookout where they can watch for danger. Other mammals and even burrowing owls are known to use their dens if the squirrels abandon them. The rock squirrel's geographic range is large, and it is found at elevations from sea level to 2,900 m. Females produce one litter a year in places or at elevations where winter weather lasts longer, and two in warmer parts of their range.

### **Sexual Dimorphism:**

Males are larger than females.

Length: Range: 466–503 mm

Weight: Range: 450-875 g



Image shows variable amounts of black coloration in species

Credit: painting by Todd Zalewski from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)



### FIELD NOTES



### **Gray-footed Chipmunk** (Tamias canipes)

**ORDER:** Rodentia FAMILY: Sciuridae

Conservation Status: Near Threatened.

Gray-footed chipmunks are shy and more often heard than seen. They make light "chipper" or low "chuck-chuck-chuck" calls, and when they sense danger, they scurry into deep brush, or underground, or up a tree. They are agile climbers, easily navigating rocks, cliffs, and trees. Acorns are probably their most important food during late summer and fall. They do not get tremendously fat in the fall, as do most animals that hibernate, so they probably feed on stored food.

**Sexual Dimorphism:** Males are slightly larger than females.

Length: Average: 237 mm Range: 210–264 mm

Weight: Range: 65-75 g



Credit: painting by Nancy Halliday from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)



### FIELD NOTES



### **Gray–collared Chipmunk** (Tamias cinereicollis)

**ORDER:** Rodentia FAMILY: Sciuridae

Gray-collared chipmunks are found only in coniferous forests, at elevations of 1,950-3,440 m. They eat all kinds of vegetation, and collect and store acorns underground or in hollow logs. Their tracks are often seen in the snow, but they probably remain in their dens during the coldest months, sleeping or feeding on their cache of acorns. One litter, of 4-6, is born a year, usually in June in a nest under a log or stump. Nests have also been found in woodpecker holes in trees. When they are 36-40 days old, the young begin eating solid food, and less than a week later, stop nursing. By fall, they are almost fully grown.

Also known as: Ash-colored Chipmunk

**Sexual Dimorphism:** Females are slightly larger than males.

Length: Average: 224 mm Range: 208-242 mm

Weight: Range: 55-70 g



Credit: painting by Nancy Halliday from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)



### **FIELD NOTES**



### Cliff Chipmunk (Tamias dorsalis)

ORDER: Rodentia FAMILY: Sciuridae

Cliff chipmunk fossils about 2,300 and 8,000 years old have been found in caves in Utah and Nevada. The chipmunks still live in those states, in habitats where sagebrush, fourwing saltbush, chokecherry, wild rose, and cliffrose grow. In other parts of their range, they are found with a wide variety of plants, and their diets include seeds and fruits from many kinds of grasses, shrubs, forbs, and trees. They also feed on insects, frogs, salamanders, snakes, birds, and eggs. Four other chipmunk species share parts of their range. Where one or more other species occurs on a mountain, the cliff chipmunk usually is found at the lowest elevation, but where none of the others occurs, cliff chipmunks range right to the top of the mountain.

#### Also known as:

Gray Chipmunk, Gray–backed Chipmunk, Gila Striped Chipmunk, Pallid Chipmunk, Chichimoke, Chichimuka

#### **Sexual Dimorphism:**

Females are slightly larger than males.

#### Length:

Average: 217 mm males; 222 mm females Range: 204–226 mm males; 212–235 mm females

#### Weight:

Average: 59.5 g males; 62.9 g females Range: 54.5–63.8 g males; 58.8–66.7 g females;

### **FIELD NOTES**

DATE: \_\_\_\_\_ LOCATION: \_\_



Tamias dorsalis - winter coloration on left, summer on right

Credit: painting by Nancy Halliday from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)



### **Least Chipmunk** (Tamias minimus)

**ORDER:** Rodentia FAMILY: Sciuridae

Conservation Status: The New Mexico Least Chipmunk, Tamias minimus atristratus, is Critically Endangered; the Selkirk least chipmunk, Tamias minimus selkirki, is Vulnerable.

The least chipmunk is the smallest and most widely distributed North American chipmunk. It occurs in a variety of habitats, from coniferous forests to meadows to sagebrush desert, feeding primarily on seeds but also eating flowers, buds, leaves, grasses, fungi, and even insects, eggs, and carrion. Least chipmunks are diurnal, like all ground-dwelling members of squirrel family. They retreat to their burrows at night and spend the winter underground, periodically waking up to feed on stored food. They scatter-hoard, storing seeds all over the place, so they unwittingly help many species of plants sprout in new places.

#### **Sexual Dimorphism:**

Females are slightly larger than males.

#### Length:

Average: 201 mm Range: 185–216 mm

#### Weight:

Average: 43.6 g Range: 32-50 g



Tamias minimus ssp. scrutator (upper left) and T. minimus

#### ssp. silvaticus (lower right)

Credit: painting by Nancy Halliday from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)



### **FIELD NOTES**

### Colorado Chipmunk (*Tamias quadrivittatus*)

ORDER: Rodentia FAMILY: Sciuridae

**Conservation Status:** The Organ Mountains chipmunk, *T. quadrivittatus australis*, is Vulnerable.

Colorado chipmunks are solitary and territorial, and adults avoid each other except during the breeding season. Males emerge from their burrows in the spring ready to mate. Females emerge a week or two later, and are receptive for only a few days. Gestation lasts about a month, and the young first appear aboveground when they are about 25 days old and three–fourths adult size. Sometimes Colorado chipmunks breed again in the summer and have a second litter. They are a great deal like least chipmunks in their activity cycles, reproduction, foraging behavior, and vocalizations, but curiously enough, when a Colorado chipmunk vocalizes it sways its tail from side to side, and when a least chipmunk vocalizes it flicks its tail up and down.

### Sexual Dimorphism:

Females are slightly larger than males.

### Length:

Average: 225.7 mm Range: 212–245 mm

#### Weight:

Average: 61.5 g Range: 54–80 g



Tamias quadrivittatus - the more southern subspecies

australis (upper) has gray shoulders while the subspecies quadrivittatus (lower) has more orange shoulders and is found in the remainder of the distribution range Credit: painting by Nancy Halliday from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)



### FIELD NOTES

### **Red Squirrel** (Tamiasciurus hudsonicus)

**ORDER:** Rodentia FAMILY: Sciuridae

Conservation Status: The Mount Graham red squirrel, T. hudsonicus grahamensis, is Critically Endangered.

Red Squirrels are very vocal. They bark at intruders, including humans, and can bark continuously for more than an hour if they are annoyed. They also chatter, especially to stake out a territory and protect their stored food supply (conifer cones, which they harvest in great numbers) from other squirrels. They are especially noisy during the breeding season, when they chase each other through tree branches making a distinctive call that sounds almost like the buzz of cicadas. They readily nest in attics and cabins, and are trapped for their fur.

#### Also known as:

Pine Squirrel, Chickaree, Barking Squirrel, Mountain Boomer, Boomer

Length: Range: 280-350 mm

#### Weight: Range: 140-250 g



Tamiasciurus hudsonicus - lower three images: white eye

ring is distinctive in all seasons; summer coloration on left, winter coloration in center. (T. douglassii is above) Credit: painting by Todd Zalewski from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)



### **FIELD NOTES**

