

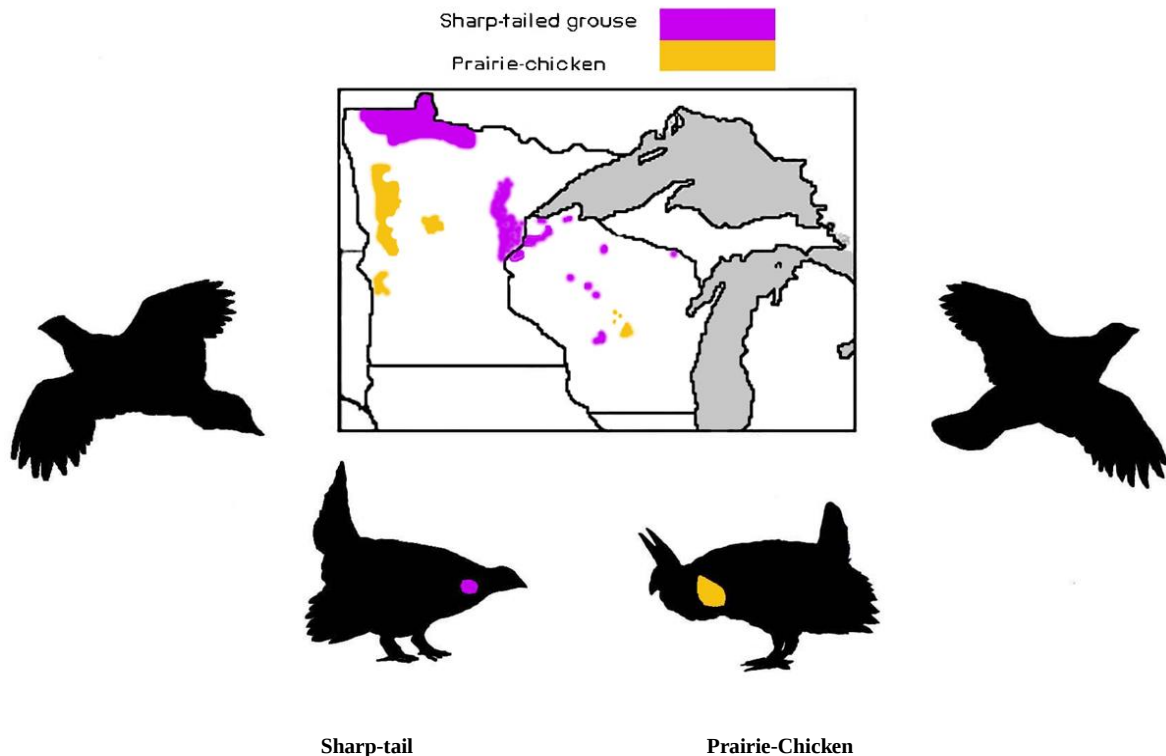
Wisconsin Wildlife Fast Facts

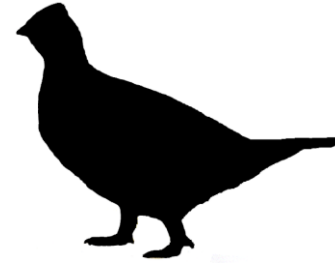
Compiled from various sources by Christian W. Cold, WDNR Ladysmith

Of all upland game birds, none have figured more historically in the settlement and expansion of North America than the prairie grouse. They were abundant, accessible and good eating. These attributes would nearly doom them to extinction, had we not hesitated to reconsider their future at a time when America was fueling its expansion with an insatiable appetite for "bush meat". We are fortunate that these birds continue to delight our senses and palates today, as living reminders of a time and place where America was young and wild. Lets take a closer look at our original wild fowl.

Prairie Grouse

The sharp-tailed grouse and the greater prairie-chicken





Sharp-tailed Grouse *Tympanuchus phasianellus*

(drumming)

(pheasant)

Synonyms:

Bur oak grouse, prairie chicken of the northwest, spike-tail, pin-tailed grouse, pin-tail, white grouse, white-belly, black-foot, fire grouse, sprig-tailed grouse, sharp-tail, sharpie, A-gusk' (Chippewa).

Description:

A stout, chicken-like, ground-dwelling bird with a round body, short legs, strong bill, short-rounded wings and pointed tail (elongated central feathers).

Cryptic colors: dorsal is heavily barred w/ dark brown, black & buff.

Upper wing has oval & round white dots.

Breast & belly "scaled and spotted" with white & dark brown crescents.

Male has pink-purple, walnut-sized inflatable sacks on neck & yellow comb above eye.

Legs are finely-feathered to the base of the toes.

Length: 16-20"

Wingspread: 25"

Weight: to 2 1/2 pounds

Of seven recognized subspecies, one is extinct.

Our bird (WI & MN) is the **Prairie sharp-tailed grouse** *T.p. campestris*.

Range:

Typically, found farther north than the prairie-chicken.

Historically, Alaska south through western Canada, east to Hudson Bay, south to Illinois and west to northeast California and Nevada.

Today, extirpated in Kansas, Illinois, California, Oklahoma, Iowa, Nevada, New Mexico, and Oregon.

Status:

Wisconsin: A very localized hunted species of special concern.

Perhaps 3500 to 4000 birds w/ largest concentration on farm/forest edge.

Crex Meadows has one of the most stable (managed) populations, with approx.

40 males scattered among 5-7 leks (2008).

Minnesota: Locally common in north (esp. NW). Local in east (N of Twin Cities).

Habitat:

A bird of the forest/grass transition.

Prairie and associated brush lands (prime habitat).

Pine barrens, sedge meadows, open bogs (muskeg), abandoned farm fields.

Open burned areas in coniferous forests and large clearcuts.

Seasonally- More open in summer.....more shrubby in winter.

Average distance between breeding & winter habitat is 3-4 miles.

Origin:

Believed to have evolved from the same ancestral stock as ptarmigan, which in turn descended from primitive ancestors of the lower Miocene epoch (>12 MYA).

Following the last glacial maximum of the late Pleistocene (10-12,000 YA),

Tympanuchus grouse entered a period of rapid diversification (divergence and adaptive radiation) and range expansion, as they followed the receding glacial front northward into newly-exposed (and unoccupied) habitats.

Scientists believe that the sexually-selective traits of individual males on leks was the driving influence in determining the developing diversification (speciation) among the Tympanuchus lines, rather than the development of differences attained while they were in separate glacial refugia (geographical isolation).

Historical:

The Western Great Lakes population initially increased with the onset of small scale agriculture (around 1840) and probably reached its peak during the late settlement period (early 1900's). It was considered abundant in Wisconsin (practically statewide) in oak openings, cutovers and agricultural areas.

As brush lands were cleared and farms expanded, it began to decline and prairie-chickens arrived to occupy the open land. By 1852 it was considered rare in SE Wisconsin, and considered gone by 1856. Sharp-tails seldom reached the eastern markets because their decline preceded the construction of railways. They eventually reclaimed their domain from the declining prairie chickens as the cutovers regenerated, marshes were drained and grew back in brush, and marginal lands were withdrawn from cultivation.

Behavior:

Niche - A ground and low shrub gleaner and browser.

Feeds before sunrise and again at sunset.

During summer forages mostly on the ground in open grass & shrubs.

Hard winters: Confines foraging to hardwood draws, riparian areas & brushland.

While not migratory, may make short moves (<2 mi.) to reach cover in bad weather.

Most movements occur from late November to early January (to winter cover).
Snow depth is the primary factor which determines the timing of most movements.

Diet:

Spring - Green shoots, new leaves, flowers, & waste grain.

Summer - Insects: ants, crickets, grasshoppers, moths, caterpillars & beetles (essential for chick development). Some leaves and flowers.

Fall - Seeds, berries, catkins, leaves and waste grain.

Winter - Primarily buds (esp. paper birch, aspen, alder, willow & cherry), catkins, seeds & grains, and desiccated fruit.

Important plants include wild rose, dandelion, chokeberry, knotweed, serviceberry (Juneberry), hawthorn, sweet & white clover, cranberry and grasses (seeds & vegetation)

Commercial grains (corn, oats & wheat) and alfalfa are also utilized..

Important herbaceous plant foods include buttercup, dandelion, clover, goldenrod, hawkweed, rose, corn, gromwell, smartweed, alfalfa, goatsbeard, wheat, common yarrow, salsify, creeping barberry, bluegrass, juniper, oats, buckwheat and brome.

Important fruits include hawthorn, chokecherry, snowberry, serviceberry (Juneberry), strawberry, dogwood berries & rose hips.

Important winter buds include tamarack, birch, aspen, chokecherry, willow, maple, & bog birch.

Food plot favorites include buckwheat, oats and flax.

Adaptations and limitations:

Requires little or no water (even in summer), other than dew and snow.

Will roost in snow drifts during bitter weather.

Flight is strong & direct - rapid bursts of flaps followed by long glides.

Attains speed of 35-40 mph.

Reproduction:

Courtship behavior (W1) begins in February (for males).

The lek (courtship arena- derived from Swedish word for "play"):

It may be as small as a car or as large as a baseball diamond.

It is a traditional site which is usually used year after year.

A new location may be sought if it is flooded or the growth gets too tall.

Lek locations are easiest to find while there is still snow cover (for contrast).

Each male has a small stage on the lek. The most virile ones occupy the central stages. With his wings extended and drooped and his tail stiff and up, he furiously pummels the ground with his feet while courting about the confines of his little stage. The whole thing looks quite "mechanical and motorized" and is usually triggered by (and in synchrony with) adjacent males. The performance is interspersed with

(desperate and shameless) bouts of cooing, cackling, tail-rattling, posturing, lunging, leaping and fluttering. During the "coo", a small, pinkish-purple skin sack is briefly inflated on each side of his neck.

When a hen arrives all bedlam breaks-loose as the males intensify their efforts. She leisurely enters the lek and begins to forage about – acting as if she's not interested in the (now-feverish) antics of the males. Eventually she selects a suitor. Copulation is brief and she immediately rouses* (ruffles & shakes her feathers) before (again, leisurely) departing from the lek.

** If you see her rouse and a male is close-by, you may have overlooked a copulation event. This is also the case with prairie chickens & other grouse.*

Video of sharp-tails on lek. : [Sharp-tailed Grouse](#)

Once the last of the hens are incubating, the males are gradually released from the grips of testosterone and begin to disperse from the lek. They will lead a solitary and sedentary existence for the remainder of the summer.

Most hens are incubating full clutches by late April in Wisconsin.

The nest:

On the ground in a shallow, scraped-out depression, lined with mosses, grasses, sedges, ferns, leaves, and breast feathers.

Usually on flat land or slight north or northeast slope (more moisture & veg).

It is located in cover that is denser than the surrounding vegetation.

It is often beneath a shrub, within a small thicket or in patch of bunchgrasses.

It is rarely in an agricultural field.

5 to 17 (ave. 12) olive-buff to pale brown, speckled eggs are incubated by the female for 23-26 days.

Downy young immediately leave the nest & follow mom to feeding areas.

She prefers to take them to areas with thick & diverse vegetation (shrubs, forbs, broadleaf plants & grasses) which support lots of insects.

Good brood cover has residual growth from the previous year (dampens predation rate).

Young can make short flights at 10-12 days.

Strong fliers at one month.

Brood begins to break-up and disperse at approx. 2 months.

Mortality & Survival:

Significant predators include coyote, red fox, mink, weasels, red-tailed hawks, goshawks, horned owls, and (to a limited degree) harriers.

Rarely, a wintering snowy owl or gyrfalcon will "depress" a local flock.

Important nest predators include red fox, skunk, bullsnake, ground squirrels, crows and ravens.

Predation rates are highest during lek and nesting periods.

Nest predation is highest just before and during day of hatch.

Predation is sometimes the highest mortality factor in some areas.

Life Span: Approximately 5 years.

Parasites & pathogens:

Prairie grouse are fortunate that they do not easily serve as host to the many parasites and pathogens which afflict waterfowl*.

Diseases include:

Avian pox – virus / insect vector / clinical signs evident esp. fall & winter.

Salmonellosis – bacteria (called fowl typhoid or paratyphoid infection)

Chlamydiosis – (infrequent) intercellular parasites, intermediate virus-bacteria

Aspergillosis – fungal (similar to pneumonia) - chronic or virulent forms.

Histomoniasis – (“blackhead”) - a protozoan transmitted by a nematode host.

** Perhaps the combined factors of their mass congregating and liquid (medium) habitat provide ideal conditions for waterfowl pathogens.*

Human dimensions:

This bird has all the attributes of an ideal game bird. It flushes well, flies strongly, and its flesh is delicious.

Conservation status:

The most important limiting factor for this bird is loss of habitat through fire suppression, forest succession, lack of tree harvest and tree planting.

Preliminary DNA analysis (WI) has shown some maintenance of genetic variation (vigor) through dispersal among local populations (as of 2008).

Although Wisconsin's population appears to be somewhat cyclical, a long-term range contraction and population decline continues. Local populations are becoming more isolated.

Management:

Optimal habitat is 35% grass-legume cover, 15% small grain, 7% marsh, 16% willow (shrub-carr) and 9% lowland brush. Give fruit-bearing shrubs priority. Delay first mowing to August 1. **Management of the lek environment is critical.** It must be at least 1/8 mile in diameter and (relatively) free of any woody vegetation. The area must be flat or slightly convex and covered with grass, sedge, pasture or crop stubble.

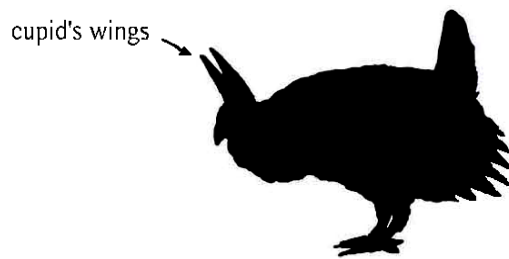
There must be no conifers over 20' tall within 1/4 mile of the lek – or over 40' tall within 1 mile of it.*

* Perhaps they have learned to associate these trees as sources of danger – ie : raptor hunting posts.

Best sharp-tail locations:

MN: Aitkin, Marshall and Kittson Counties.

WI: Crex Meadows Wildlife Area, Douglas Co. (so. of CTH S), Wood Co. W. A.



Greater Prairie-Chicken *Tympanuchus cupido*

(drummer)

(love or desire)

Synonyms:

Pinnated grouse, prairie hen, prairie grouse, moor-hen, whirring pheasant, A-gusk' (Chippewa for prairie hen - not distinguished from the sharp-tail).

Description:

At first glance, similar to a sharp-tailed grouse, but slightly larger.

A medium-sized chicken-like bird which is heavily barred with brown, rufus and buff above and below.

A patch of long, stiff feathers (pinnae) on each side of the neck (esp. on the male).

He also has a yellow eyebrow (comb) and a pair of golden skin sacks on the sides of his neck (which are invisible unless inflated).

Legs are finely-feathered to the base of toes.

Length: 18" Wingspread: 25" Weight: to 3 pounds.

Range:

US: Formerly a common resident throughout the northern Great Plains and east as far as Ohio, Kentucky and Tennessee. Today, confined to prairie states of Kansas, Nebraska, & S. Dakota with small population clusters in MN, WI, MI, ILL, MO, & OK.

WI: Formerly, a year round resident from Green Bay west to the Minnesota border, then south into Illinois. Today survives in small, scattered remnant concentrations primarily within the Sand Plains of central Wisconsin.

Status:

Wisconsin – state-threatened species (1979). Locally uncommon – limited to the central sands region.. Statewide population estimate (2006) of 1,500 birds.

Buena Vista Grasslands- 2008: 232 males at 30 leks.

Mead Wildlife Area- 2008: 45 males at 6 leks

Minnesota – hunted species of special concern.

Habitat:

Expansive tall grass prairie and associated wetland fringes.

Sometimes agricultural areas (pastured land and associated grain fields).

Occasionally brushy fields.

Origin:

(see sharp-tail origin above for addl. details)

The initial phase (of several glacial & interglacial phases) of range expansion, divergence and speciation is estimated to have commenced approx. 67,000 YA. The process culminated approx. 10,000 YA with the final northward retreat of the ice front.

Three distinct races (subspecies) emerged:

Tympanuchus cupido cupido* - scrub oak barrens of eastern seaboard.

Tympanuchus cupido attwateri - sandy coastal plains of Texas & Louisiana.

Tympanuchus cupido pinnatus - tallgrass prairies of the Midwest & Great Plains.

* Heath Hen (extinct 1932)

Historical:

Locally common to abundant and widely distributed in the early to mid 1800's.

An initial population increase was reported and reputed to be due to the clearing of forests and establishment of grain/grass agriculture (beginning around 1840).

When telegraph lines were first installed in the Chicago area prairie chickens were frequently killed by striking the wires.

The birds became so common that early settlers considered eating them "a poor diet".

Nevertheless, a "chicken hunting culture" and commercial harvest industry quickly developed.

In 1842 the Milwaukee market sold them as "common fare" for 31 cents a pair (alive) and 25 cents/pr. dead.

Anyone who was a good shot could kill 50 – 75 birds a day.

With the construction of railways, which connected Madison with Chicago and the eastern markets the commercial industry gained a tremendous momentum.

In 1845 the Chicago market was glutted with birds which sold at \$1.25/ dozen.

In July 1848 birds (just 3/4 grown) sold for 75 cents a dozen.

In 1850, 5000 birds were forwarded by express to New York City.

One shipper sent 20,000 prairie chickens from Indiana to Detroit in six weeks time.

By 1850 prairie chickens were considered scarce in Illinois.

Wisconsin passes its first game law in 1851, which included the protection of prairie chickens from February 1 to August 1.

Nevertheless, by 1853 they had become comparatively scarce in Wisconsin ("most-noticeably so" in 1855).

Regardless, such volumes of carcasses continued to be marketed that they were being shipped east "by the chord" and the ton.

In 1856 stores throughout Madison continued to sell vast quantities of birds in January and February.

The eventual scarcity of birds in Madison markets was attributed to the fact that "since railroads reached us, the prairie chickens have all taken passage east."

By 1900 the decrease in southern birds was partly offset by an increase in meadow acreage in central Wisconsin and the expansion of suitable range in the northern cutovers.

In 1905 & 1907 new restrictive harvest laws were enacted.

In 1917 a 4 year moratorium on hunting was initiated.

A population rebound and range expansion enabled the birds to recover.

By 1920 they were being reported in virtually every county in Wisconsin.

In 1921 a short harvest season was initiated (lasted until 1955).

As late as 1929 the statewide population was estimated to be 54,000 birds.

In 1955 numbers had declined to the point that all harvest was discontinued.

In 1974 an (unsuccessful) effort was made to establish birds at Crex Meadows.

In 1979 the bird was designated a state threatened species.

Prairie chickens probably benefited (initially) from the settlement of prairies as long as the farms were small and a variety of crops were grown. Following the axe and the plow, they expanded their range north to the shores of Lake Superior. It was only when the farms expanded and converted to single grain crops (especially wheat) and the great cutover began to regenerate that they started to withdraw and decline. The combined factors of mechanized agriculture, past unregulated harvest, forest succession and recent development (urban sprawl) have now imposed indefinite limits on the continued tenure of this bird in Wisconsin.

Attempting to reverse a loss...

Following the extinction of the heath hen *T.c.cupido* on the eastern mainland, efforts were made to stock *T.c.pinnatus* there. Beginning around 1840, thousands of birds were translocated to the former bird's (vacant) range. The attempts ultimately failed, suggesting to biologists that the three races may have developed distinct adaptive strategies to the individual habitat characteristics of their respective ranges.

Movements:

Historical documents reported that the prairie-chicken would make regular, extended north and south seasonal flights – which suggests that they were once (to some extent) migratory.

Such reports were especially prevalent in the northern part of their range.

Some reports described large scattered flocks on movements spanning hundreds of miles.

Fall flights took place in October with hundreds of birds passing overhead daily.

Today, most prairie chicken movements encompass an area of approximately 5 square miles.

Habits:

Niche : A ground and low shrub gleaner.

Rises to feed before sunrise. Full crop within 2 hrs. Then inactive until evening when it feeds again, before going to roost.

In fall and winter, birds flock into roosting areas just before sunset. On alighting, each bird scatters over a large area, hollows out a form in the grass (usually facing the wind) and spends the night in cryptic silence.

Takes frequent dust baths.

Special adaptations, abilities and limitations:

While not considered a particularly strong flier (endurance-wise), this bird probably flies more than any other species of prairie grouse.

Flight speed approx. 35 mph.

Diet:

Seeds, waste grain, leaves, occasionally acorns.

Spring: waste grain, buds, catkins & new shoots.

Summer: leaves, flowers, berries & insects.

As with the sharp-tail, insects are essential for proper chick development.

Fall: Seeds, waste grain, insects, fruit.

Winter: Seeds, desiccated fruit, waste grain and buds (w. birch, elm, poplar & willow).

Important plants include wild pea, wild lupine, psoralea, lead plant, false indigo, prairie clover, trefoil, ragweed, sunflower, climbing false buckwheat, compass plant, prairie & curly dock, knotweed, wild rose (hips, leaves & flowers), beaked hazelnut, sumac, dogwood, spirea, jewelweed, violet, sedge, viburnum.

Hammerstrom concluded that the species is fully capable of subsisting on a diet of low nutritional value.

Favorite commercial grains include sorghum and corn.

Reproduction:

Like the sharp-tail, this bird conducts annual courtship and mating on lek arenas.

Six to ten (to 40) males gather in March while the snow is still on the ground.

The birds prefer short grass or stubble for the lek location.

The highly visual and audible display is nothing-short of spectacular:

He erects his pinnae (neck feathers), spreads his wings, fans his erect tail & inflates yellow-orange neck sacks, producing a booming sound (similar to a kettle drum).

He will posture with other males during this performance, sometimes crouching, charging (bluff lunge), sometimes leaping, fluttering and kicking. There is constant clucking, cackling and "whining".

She may appear on the lek for just a day or two, and usually mates with a male who occupies the center of the arena.

The lek is open for business from prior to sunrise to about 10:00 a.m.

It reopens in late afternoon until just before sunset when all birds go to roost.

Most breeding occurs the first 2 weeks of April (WI).

Most hens are incubating full clutches by the end of April.

Ten to twelve (to 17) brown speckled eggs are incubated for 23 - 26 days.

The young are up and about (precocial) immediately and follow mom to brood areas.

They make short flights at 2 weeks and are strong fliers by 4 weeks.

[YouTube - Prairie Chicken](#)

Life span: Five to six years.

Predators, parasites & pathogens:

The red-tailed hawk, harrier (female), and prairie falcon (in the west) are infrequent or occasional predators of prairie chickens. Horned owls (when present in chicken habitat) can be regular predators of the birds. Rarely, a snowy owl or gyrfalcon settles-in on chicken range for the winter.

The red fox is probably the #1 nest predator of adults, eggs and chicks, followed by the skunk, raccoon, fox snake, bull snake, weasels, Franklin's & other ground squirrels.

See sharp-tailed grouse for details on parasites and pathogens.

Human dimensions:

Like the sharp-tail, this bird has all the qualities of a popular game bird.

It flushes well, flies strong, and its flesh is delicious.

Conservation status and management recommendations:

Research has shown that the greater prairie-chicken requires at least 60% of its range in native grass, which must be high enough for roosting, nesting, and winter cover.

Unfortunately, many farmers can no longer afford to manage for hay and pasture when small grain crops provide greater potential returns.

Where to see them:

Wisconsin: Buena Vista Grasslands, George W. Mead WA

Minnesota: Rothsay WMA, Big Stone WMA, Tympanuchus WMA

A final word....

The wretched history of this bird's past exploitation rings a familiar tone - one similar to an epitaph for a species that is now extinct. While we are fortunate that the prairie chicken has weathered the storm of our past excesses, we must not overlook (or understate) the fact that (today,) in Wisconsin it exists only as a remnant species on scattered islands of isolation. The severe localization of our present population has rendered them susceptible to the random factors and elements of nature that will eventually determine their success (or failure) as a living icon of historical importance. Were it not for the pioneering efforts of Fredrick & Francis Hammerstrom and the dedication of our wildlife biologists who continue to hold custody of these birds, the story of the Wisconsin prairie-chicken would have been told long ago.

As of yet, it remains an unfinished manuscript and it appears that a new chapter is now being written

Organizational links:

[STCP Society of Tympanuchus Cupido Pinnatus, Ltd.](#)

[About Us](#) (The Minnesota Sharp-tailed Grouse Society)