

Natural Resources



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North American Forest Grouse Harvest Regulations

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North America has four grouse species considered forest grouse, as they inhabit forests for some or all parts of their life cycle (Figure 1). These species include ruffed grouse (*Bonasa umbellus*), spruce grouse (*Falci pennis canadensis*), sooty grouse

(*Dendragapus fuliginosus*), and dusky grouse (*Dendragapus obscurus*). Though some species overlap in their distribution, they have different habitat requirements and life-history traits.

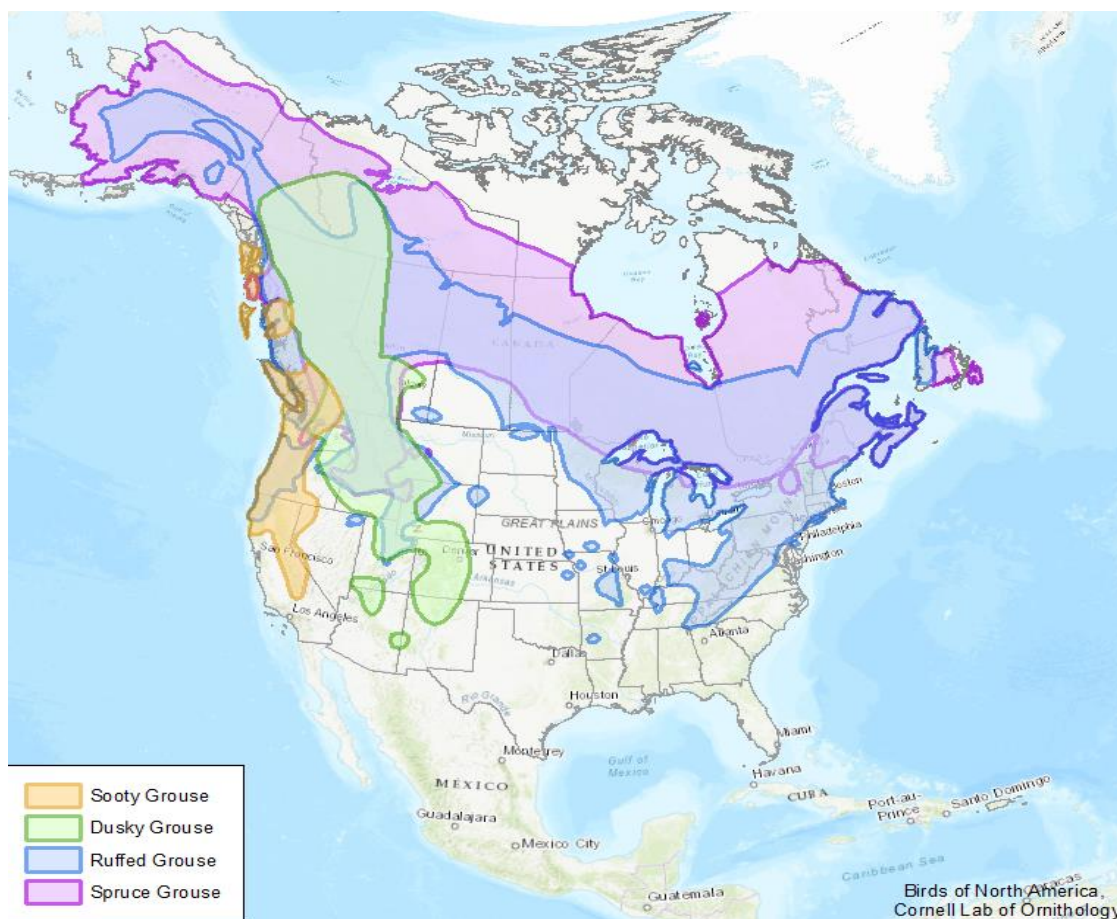


Figure 1. A map illustrating the distribution of dusky, sooty, spruce, and ruffed grouse across North America (spatial data obtained from *Birds of North America*, Cornell Lab of Ornithology, and may not represent exact current distributions).

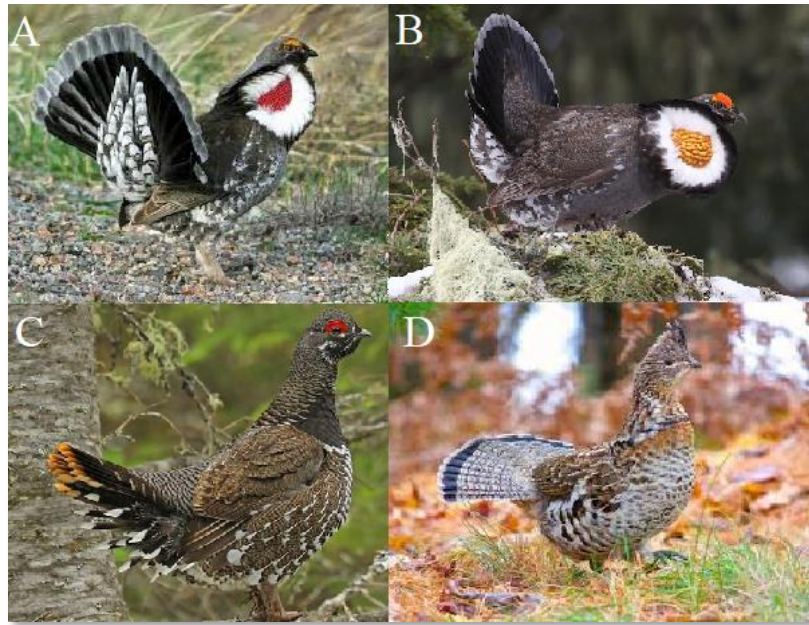


Figure 2. Male forest grouse common and scientific names (and photo credit): **(A) dusky grouse**, *Dendragapus obscurus* (ebird.org); **(B) sooty grouse**, *Dendragapus fuliginosus* (birdsna.org); **(C) spruce grouse**, *Falcapennis canadensis* (allaboutbirds.org); **(D) ruffed grouse**, *Bonasa umbellus* (flickr.com).

Description

Forest grouse share certain characteristics across species. All forest grouse differ to some degree in size and plumage between sexes, and like many bird species, males are more colorful and distinctive (Figure 2). Males compete with each other with species-specific displays, seeking the attention of females who ultimately choose their mate. Following breeding activity, male grouse do not contribute to reproduction including nesting and rearing of young. However, there are also many differences between forest grouse species.

Dusky and sooty grouse, recently determined to be separate species of blue grouse (Barrowclough et al., 2004), are actually more closely related to prairie grouse and sage-grouse (*Centrocercus* spp.) than to other forest grouse species (Figure 3). They are longer-lived compared to many other gamebirds. Clutch sizes for dusky and sooty grouse average about 6–7 eggs (Zwickel & Bendell, 2004). Male and females of both species have been known to live up to 11 years; however, the average lifespan is 3–4 years (Zwickel & Bendell, 2018). Similar to sage-grouse, female dusky and sooty grouse will nest and brood in sagebrush steppe, as well as higher subalpine forested areas (Zwickel & Bendell, 2018). They also use aspen, maple, and mahogany

communities during summer and fall. During the fall and winter, both species undergo reverse migration moving to high elevation conifer forests to forage nearly exclusively on conifer needles through the winter (Zwickel & Bendell, 2018).

Spruce grouse are more closely related to species of Eurasian grouse than their North American counterparts (Figure 3). There are two recognized subspecies of spruce grouse: Canada spruce grouse (*Falcapennis canadensis canadensis*) and Franklin’s spruce grouse (*Falcapennis c. franklinii*). Like dusky and sooty grouse, spruce grouse are longer-lived. They produce an average of 4–9 eggs and live from 5.5 to 13 years (Zwickel & Bendell, 2018). Inhabiting higher latitudes, spruce grouse use mostly higher elevation conifer—as their name implies, primarily spruce trees. Females usually nest in forested areas with overhead cover (Zwickel & Bendell, 2018). Spruce grouse select for denser coniferous forests during the winter (Zwickel & Bendell, 2018). Recent work from Schroeder et al. (2018) documented differential display behavior among subspecies in males during the breeding season.

Compared to other North American forest grouse, ruffed grouse are the most distantly related

(Figure 3). Ruffed grouse tend to have larger clutch sizes, lower adult survival, and shorter life spans. The average clutch size is 9–14 and the lifespan is about 1–4 years (Sharp, 1963). Plumage characteristics can vary from gray to red-brown phases across their distribution. Being widely distributed, ruffed grouse will use different vegetation types depending on where they are

located; however, they are associated with aspen forests in most areas of their distribution. A mix of young and old forest in close proximity is important to meet all parts of their life cycle (Rusch et al., 2000). During the winter months, ruffed grouse diet becomes more specialized and they predominantly feed on woody plant buds, such as aspen.

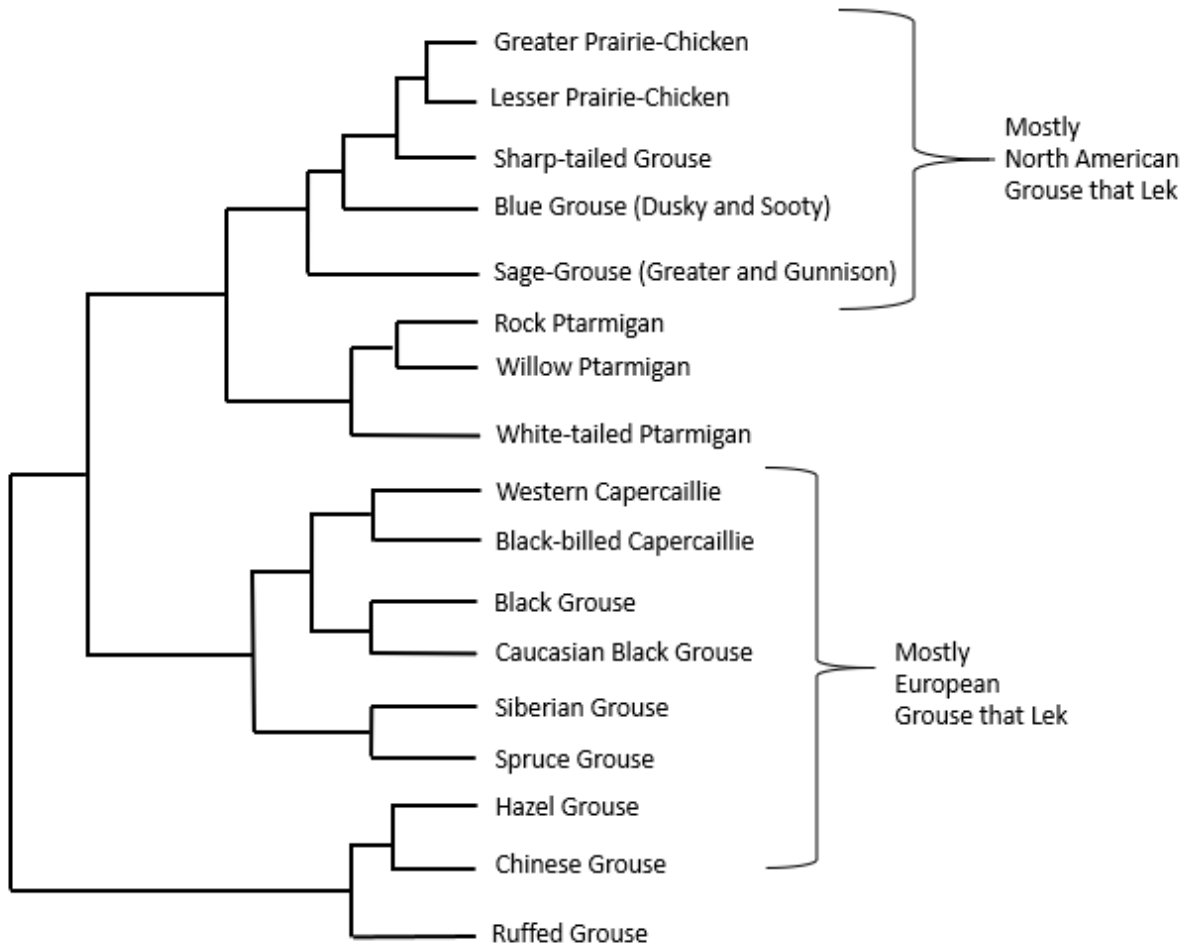


Figure 3. Taxonomy of grouse species (adapted from Spaulding 2007). Leks are display grounds where males gather in close proximity to attract and compete for females during the breeding period.

History of Hunting in North America

During European settlement of North America, subsistence and market hunting were common for many wildlife species, although likely not forest grouse. In the mid to late 1800s, significant population declines of susceptible wildlife species occurred, largely due to market hunting. By the early 1900s, conservationists who primarily hunted for sport, rallied together to create laws that governed the taking of wildlife (Trefethen, 1975).

At this time, these laws were primarily applied on a state-by-state basis and the first forest grouse harvest regulations were established. Although many regulation changes occurred over time, all forest grouse species in North America are currently hunted, with hunter participation variable depending on the species and location.

By the mid-1900s, research led to the first understanding of population dynamics for some wildlife species, including concepts related to the

effects of harvest (Errington, 1945; Anderson & Burnham, 1976). This research was focused on improving game harvest management to sustain populations into the future. Most eastern states had adopted hunting seasons for forest grouse and season lengths and bag limits were set at relatively conservative levels. As research continued to assess harvest in the mid-1900s, most of the upland game

studies showed very little impact due to harvest. As a result, regulations for most upland game species were liberalized across North America in the latter half of the 20th century. Currently, all states and provinces have hunting seasons and bag limits for forest grouse. Some states and provinces have management plans that focus on the conservation of forest grouse more directly than others.



Figure 4. Aldo Leopold in 1943 after a ruffed grouse hunt (permission from the Aldo Leopold Foundation).
“Everyone knows...that the autumn landscape in the north woods is the land, plus a red maple, plus a ruffed grouse. In terms of conventional physics, the grouse represents only a millionth of either the mass or the energy of an acre yet subtract the grouse and the whole thing is dead.” –Aldo Leopold (1953)

Current North American Forest Grouse Regulations

Currently, forest grouse harvest regulations across North America can largely be grouped into two broad regions: eastern and western. We divided the east and west regions along the Minnesota and North Dakota border in the United States and along the borders of Manitoba, Nunavut, and

Saskatchewan, Northwest Territories in Canada. We generalized regulation differences between the eastern and western regions (Tables 1, 2). The western region tends to have longer hunting seasons and higher bag and possession limits and includes aggregation (i.e., more than one species in the same bag) of forest grouse species within bag limits compared to the eastern region.

Table 1.
Combined North American Forest Grouse Hunting Regulations Between Eastern and Western Regions

States/Provinces NA Region	Number of States/Provinces in Region	Percentage of State/Province- wide Regulations	Average Season Length (days)	Mean Bag Limit (all spp. combined)	States/Provinces with Season Limits ^a
Western	19	58%	147	7	0
Eastern	25	60%	98	5	2

^aSeason limits are defined as the total number of individuals of that species one hunter can harvest per season.

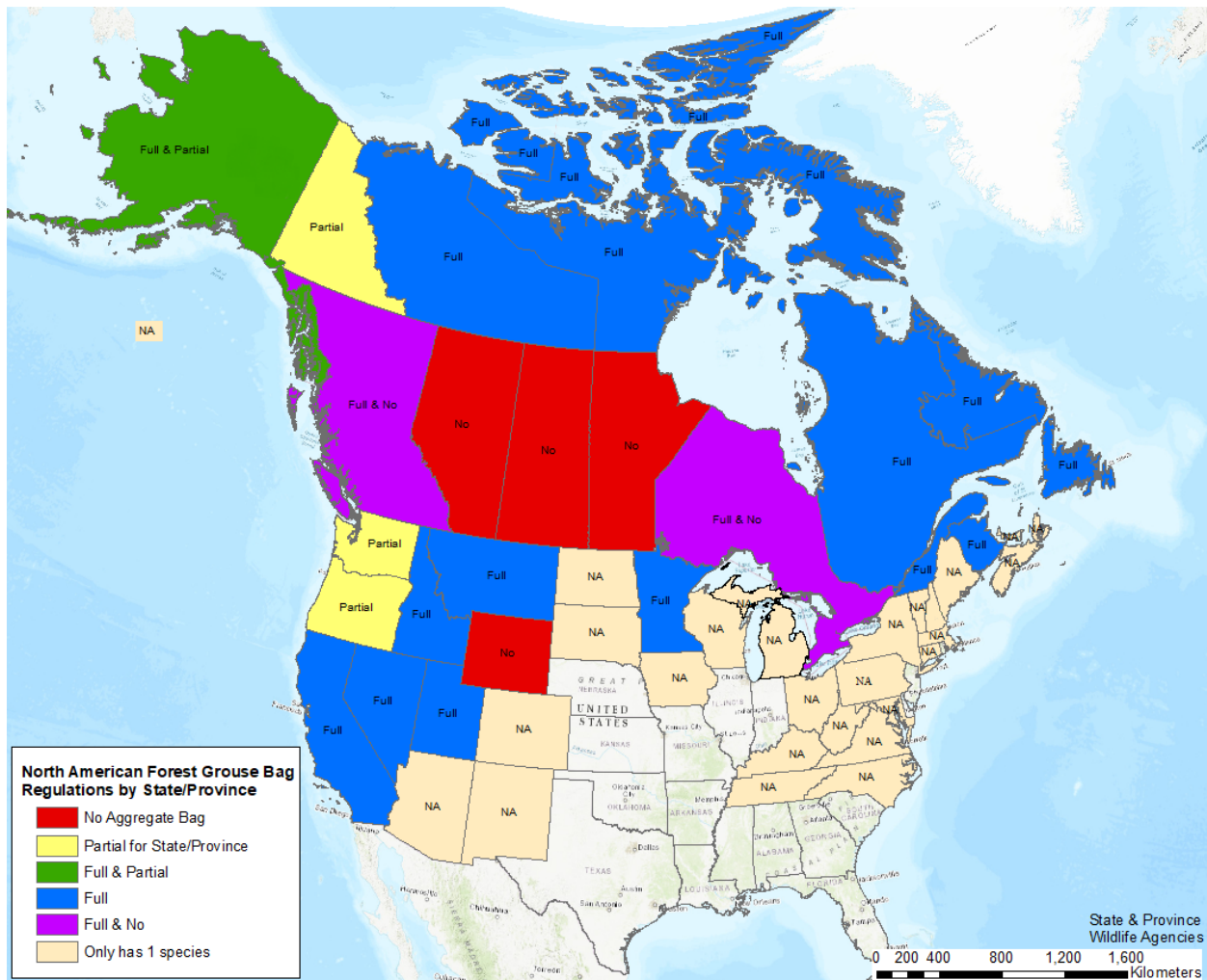


Figure 5. North American forest grouse bag limit regulations by state and province.

No Aggregate Bag = Separate species regulations; **Partial for State/Province** = Aggregate bag limit, but not for all species; **Full** = Aggregate bag limit for all species; **Full & Partial, Full & No** = Mixed regulations that include full aggregate, partial aggregate, and no aggregate bag limits; **Only has 1 species** = Single forest grouse species is hunted for individual state or province.

Western Regulations

The western region has the most diversity of forest grouse species including spruce, ruffed, dusky, and sooty grouse. Most western states and provinces have aggregate bag limits, though a few are non-

aggregate. For Alaska, bag limits are aggregate for all forest grouse species, but regulations have a limitation on the number of ruffed grouse allowed that is less than the daily aggregate bag limit, which provides an example of a partial aggregate bag

limit. Another example of a partial aggregate bag is Washington, where the bag limit does not allow more than three of any one species (Figure 5). Wyoming is the only western state that does not have an aggregate, but rather a separate, bag limit for ruffed and dusky grouse.

Regulations within western Canadian provinces vary across the region. The Yukon is the only western province that has an aggregate bag limit for two species and a non-aggregate bag for a third species. Alberta and Saskatchewan are the only provinces to separate species bag limits province-wide. British Columbia separates only one region into species-specific bag limits, and all other regions are aggregate bag limits for forest grouse. Nunavut combines spruce grouse and ruffed grouse but has a reduced bag limit for non-resident hunters. For British Columbia, Saskatchewan, and Yukon Territories, season dates usually begin in early September and run through late November or December. Some western provinces have extremely long seasons, such as the Northwest Territories, which starts the hunting season in September and ends April 30. Even longer, Alberta's season begins early September and runs until July 15. The most liberal is Nunavut's season, which is year-round.

Eastern Regulations

In the eastern region, there are only two forest grouse species available to hunt; namely, ruffed and spruce grouse. For states with large ruffed grouse populations, such as Minnesota, Wisconsin, and Michigan, they have no specific delineation between hunt areas; hunting is allowed statewide. Of all eastern states, only Minnesota allows spruce grouse hunting and has an aggregate bag with ruffed grouse. Maine and New Hampshire have aggregate bags for ruffed grouse, but bags are combined with northern bobwhite (*Colinus virginianus*). Additionally, in New Hampshire, ruffed grouse have been aggregated with chukar (*Alectoris chukar*) and gray partridge (*Perdix perdix*) for bag limits. Season dates for the eastern U.S. states' forest grouse seasons typically span either October to January/February or September to November/December.

In the eastern Canadian provinces, regulations tend to be nuanced and complex. Differences in

regulations are often applied to relatively small hunting zones or units within provinces. Most of the eastern provinces have both spruce and ruffed grouse hunting (Figure 5). Within specific units, ruffed grouse and spruce grouse are included in an aggregate bag and some separate the two into individual bags (Figure 5). Quebec, Newfoundland, New Brunswick, and a few zones in Ontario include ruffed grouse and spruce grouse in aggregate bags, whereas Manitoba, Nova Scotia, and two other zones in Ontario separate the two or only include ruffed grouse as a hunted species (Figure 5). Season dates for provinces in the east region typically begin in September and span through late December/January, with a few hunt areas open into March.

Summary

Forest grouse are a highly sought-after wildlife resource across North America, both for their intrinsic value and as game species. Their unique breeding displays and the habitat they rely on are part of North America's incredible natural heritage. Most forested landscapes in the upper latitudes of North America have potential to provide habitat for one or more forest grouse species. This includes a large variety of vegetation types including the aspen forests of the upper Midwest, the coniferous boreal forest of Canada, the Pacific coastal rain forests that extend from Alaska to California, the Intermountain Rockies as far north as the Yukon and as far south as New Mexico and Arizona, and the mixed forests of the southern Appalachians.

Across nearly the entire distribution of these forest grouse species, states and provinces have regulated harvest. Eastern states and provinces generally have shorter seasons and non-aggregated bag limits compared to western states and provinces, which tend to have more liberal season lengths, earlier start dates, and most often have aggregated bag limits for multiple forest grouse species. North American forest grouse species have different life-history strategies and yet, in many cases, harvest regulations are combined. Thus, harvest management strategies for forest grouse, especially for western states and provinces, may warrant increased evaluation to ensure appropriate harvest

management and conservation of these species into the future.

Forest grouse provide both consumptive and intrinsic values as part of our North American wildlife resources. Grouse as a group of species are sensitive to human disturbances within the natural systems they inhabit. Persistence of grouse populations into the future may provide a valuable gauge for the health of our existing ecosystems, for which all life, including our own, depends. There

remain knowledge gaps in our understanding of forest grouse ecology. We encourage future research using modern techniques to provide information that can be applied to the conservation of these species and the landscapes they inhabit.

If you are interested in learning more about forest grouse in your area, please contact your state's or province's wildlife agency. More information can also be found at www.usugrouserange.com.

Table 2.
All North American Harvest Regulations for Forest Grouse, 2018–2019 Hunting Season, Including Dusky Grouse (DUGR); Ruffed Grouse (RUGR); Sooty Grouse (SOGR); and Spruce Grouse (SPGR)

State or Province	Species	Hunt Area Type	Season Date Start	Number of Hunt Days	Bag Limit Type	Daily Bag Limit
Alaska	SOGR, SPGR, RUGR	Hunt Units	Aug. 1	288	Aggregate	5
	SOGR, SPGR, RUGR		Aug. 10	234	Partial	10
	SOGR, SPGR, RUGR		Aug. 10	264	Aggregate	15
	SOGR, SPGR, RUGR		Aug. 10	234	Aggregate	15
	SOGR, SPGR, RUGR		Aug. 10	234	Partial	15
	SOGR, SPGR, RUGR		Sept. 4	209	Partial	5
	SOGR, SPGR, RUGR		Aug. 25	219	Aggregate	15
Arizona	DUGR	Statewide	Sept. 1	70	Separate	3
California	SOGR, RUGR	Statewide	Sept. 8	30	Aggregate	2
Colorado	DUGR	Regional	Sept. 1	78	Separate	3
Idaho	DUGR, SPGR, RUGR	Regional	Aug. 30	154	Aggregate	4
	DUGR, SPGR, RUGR		Aug. 30	123	Aggregate	4
Montana	DUGR, SPGR, RUGR	Statewide	Sept. 1	122	Aggregate	3
North Dakota	RUGR	Hunt Units	Sept. 14	113	Separate	3
Nevada	SOGR, DUGR, SPGR, RUGR	Statewide	Sept. 1	121	Aggregate	3
New Mexico	DUGR	Statewide	Sept. 1	90	Separate	3
Oregon	SOGR, DUGR, RUGR	Statewide	Sept. 1	152	Separate	3
South Dakota	RUGR	Statewide	Sept. 21	106	Separate	3
Utah	DUGR, RUGR	Statewide	Sept. 1	121	Aggregate	4
Washington	SOGR, DUGR, SPGR, RUGR	Statewide	Sept. 1	121	Partial	4
Wyoming	DUGR, RUGR	Regional	Sept. 1	121	Separate	3
New York	RUGR	Regional	Sept. 20	161	Single	4
	RUGR		Oct. 1	150	Single	4
Maine	RUGR	Statewide	Oct. 1	91	Single	4
Minnesota	RUGR, SPGR	Statewide	Sept. 14	109	Aggregate	5

	Species	Hunt Area Type	Season Date Start	Number of Days	Bag Limit Type	Bag Limit
Wisconsin	RUGR	Regional	Sept. 15	107	Single	5
	RUGR		Oct. 20	49	Single	2
Michigan	RUGR	Regional	Sept. 15	60	Single	5
	RUGR	Regional	Dec. 1	31	Single	3
West Virginia	RUGR	Statewide	Oct. 13	138	Single	4
Pennsylvania	RUGR	Regional	Oct. 13	42	Single	2
	RUGR		Dec. 10	15	Single	2
Vermont	RUGR	Statewide	Sept. 30	92	Single	4
Ohio	RUGR	Statewide	Oct. 13	110	Single	2
New Hampshire	RUGR	Statewide	Oct. 1	91	Single	4
Kentucky	RUGR	Statewide	Oct. 19	41	Single	2
Tennessee	RUGR	Regional	Oct. 14	137	Single	3
Virginia	RUGR	Regional	Oct. 27	105	Single	3
North Carolina	RUGR	Regional	Oct. 15	136	Single	3
Maryland	RUGR	Statewide	Oct. 6	117	Single	2
Iowa	RUGR	Regional	Oct. 6	117	Single	3
Massachusetts	RUGR	Statewide	Oct. 19	42	Single	3*
Connecticut	RUGR	Statewide	Oct. 19	42	Single	1*
Alberta	RUGR	Regional	Sept. 1	318	Separate	5
	SPGR		Sept. 1	318	Separate	5
	DUGR		Sept. 1	318	Separate	5
British Columbia	SOGR	Regional	Sept. 1	121	Separate	5
	RUGR		Sept. 1	121	Separate	5
	SOGR, DUGR, SPGR, RUGR		Sept. 1	105	Aggregate	10
	DUGR, SPGR, RUGR		Sept. 10	81	Separate	5
	DUGR, SPGR, RUGR		Sept. 1	120	Aggregate	5
	DUGR, SPGR, RUGR		Sept. 10	81	Aggregate	10
	SOGR, DUGR, SPGR, RUGR		Sept. 10	81	Aggregate	10
	SOGR, DUGR, SPGR, RUGR		Sept. 10	81	Aggregate	5
	DUGR, SPGR, RUGR		Sept. 1	75	Aggregate	10
	DUGR, SPGR, RUGR		Sept. 10	81	Aggregate	5
Saskatchewan	RUGR, SPGR	Province-wide	Sept. 15	107	Separate	10
	SPGR		Sept. 15	107	Separate	10
Northwest Territories	RUGR, SPGR, DUGR	Province-wide	Sept. 1	242	Aggregate	10

	Species	Hunt Area Type	Season Date Start	Number of Days	Bag Limit Type	Bag Limit
Yukon	RUGR, SPGR	Province-wide	Sept. 1	90	Separate	10
	DUGR		Sept. 1	90	Separate	5
Nunavut	RUGR, SPGR	Province-wide, Resident	June 1	29	Aggregate	10
	RUGR, SPGR		June 1	29	Aggregate	5
Manitoba	RUGR	Regional	Sept. 1	122	Separate	6
	SPGR	Regional	Sept. 8	115	Separate	6
Ontario	RUGR, SPGR	Hunt Units	Sept. 18	195	Aggregate	5
			Sept. 15	107	Aggregate	5
	RUGR		Sept. 25	97	Separate	5
			Sept. 25	97	Separate	2
Quebec	RUGR, SPGR	Hunt Units	Sept. 21	116	Aggregate	5
	RUGR, SPGR		Sept. 7	130	Aggregate	5
	RUGR, SPGR		Sept. 14	123	Aggregate	5
	RUGR, SPGR		Sept. 1	136	Aggregate	5
	RUGR, SPGR		Sept. 25	112	Aggregate	5
Newfoundland	RUGR, SPGR	Regional	Sept. 21	92	Aggregate	20
	RUGR, SPGR		Oct. 5	155	Aggregate	20
New Brunswick	RUGR, SPGR	Province-wide	Oct. 1	91	Aggregate	6
Nova Scotia	RUGR	Province-wide	Oct. 1	91	Single	5

*Indicates the area contains a season limit. Aggregate bag limit refers to one combined bag limit for multiple forest grouse species. Partial bag limit refers to a lower limit, within the aggregated bag limit, for one or more species. Separate bag limits refer to each species having its own bag limit. NA = Not Applicable.

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