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CHECKLIST

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A checklist of South Dakota bumble bees (Hymenoptera, Apidae)

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Abstract

Several bumble bee species (*Bombus* Latreille) are declining and efforts to conserve populations will be strengthened by an improved knowledge of their geographic distribution. Knowledge gaps exist, however, especially in central portions of North America. Here we report 29 species of bumble bees from South Dakota in the north-central USA, based on 130 years of records from 1891 to 2021. Specimens or observations were available for >90% of the 66 counties, though they were not distributed evenly as most records came from Pennington, Lawrence, Custer, Brookings, and Day Counties. The five most commonly collected or reported bumble bee species were *B. griseocollis* (54 counties), *B. pensylvanicus* (41 counties), *B. fervidus* (39 counties), *B. huntii* (27 counties), and *B. bimaculatus* (25 counties). Twenty species were recorded from 10 or fewer counties. Despite differences in occurrence, 66% of the *Bombus* species in South Dakota were collected or observed since 2020, including six of the nine species of conservation concern (*B. fraternus*, *B. pensylvanicus*, *B. fervidus*, *B. occidentalis*, *B. terricola*, and *B. morrisoni*). However, the critically endangered *B. affinis*, *B. variabilis*, and *B. suckleyi* have not been collected or observed for over 50 years. While this checklist is the first for South Dakota bumble bees in nearly 100 years, data are still lacking as ~55% of counties had fewer than five species reported. We suggest future efforts should focus on these under-sampled areas to fill in baseline knowledge of the wild bee fauna towards completing a more holistic view of bumble bee distributions across the Great Plains.

Keywords

Bombus, community science, conservation, faunal inventory, IUCN Red List, museum collections, natural history, pollinator

Introduction

There are more than 20,000 described species of bees (Hymenoptera: Apoidea, Anthophila) worldwide exhibiting a vast diversity of morphology, diet, and social structure (Michener 2007; Danforth et al. 2013; Engel et al. 2021). Roughly 5,200 bee species are known from North America north of Mexico (Ascher and Pickering 2020). Bee diversity is critical for ecosystem function (Genung et al. 2017; Winfree et al. 2018) and is essential for conserving many habitats by way of generalist and specialist plant-pollinator interactions (Kearns et al. 1998; Biesmeijer et al. 2006). Indeed, bees are vital pollinators of native vegetation and cultivated plants in most habitats throughout the world (Losey et al. 2006; Ollerton et al. 2011; Reilly et al. 2020) with certain groups like bumble bees (*Bombus* spp.) providing pollination services worth $963 USD per hectare on average (Kleijn et al. 2015). Important crops pollinated by bumble bees include blueberries, cranberries, cucumbers, field beans, melons, peppers, and tomatoes (Stubbs and Drummond 2001; Goulson et al. 2008; Cooley and Vallejo-Marín 2021). However, despite their economic importance, charisma, large size, and conspicuous nature, little is known about the abundance, diversity, and distribution of bumble bees across much of the Great Plains.

The status of bumble bees in a substantial portion of the Great Plains remains an open question, as the distributions of many species must be interpolated from published records for species known east of the Mississippi River and from the Rocky Mountains westward (Colla et al. 2011; Koch et al. 2012). Such data discrepancies limit the ability to infer population changes at local and landscape levels despite well-documented bumble bee declines elsewhere (Colla and Packer 2008; Grixti et al. 2009; Cameron et al. 2011; Wood et al. 2019; Hemberger et al. 2021; Novotny et al. 2021). Moreover, the International Union for Conservation of Nature (IUCN) lists five bumble bee species as critically endangered, two species as endangered, five as vulnerable, and one as near threatened in North America, suggesting that almost 30% of the 46 bumble bee species in the continental United States may be at risk (Williams et al. 2014; IUCN 2022). Bumble bees are clearly a group of conservation concern (Goulson et al. 2008; Potts et al. 2010; Colla et al. 2012; Graves et al. 2020; Mola et al. 2021) and knowledge gaps in states like South Dakota are especially apparent as comprehensive statewide pollinator surveys have not been conducted.

South Dakota is a promising state for studying bumble bees as it is situated in the geographic center of North America. Species distribution patterns in the state reflect the classic post-Pleistocene models showing eastern species moving into eastern deglaciated areas from southern and eastern periglacial regions, and western species inhabiting the Black Hills, Rocky Mountains, and peripheral central plains forested areas then moving eastward post-glacially (Hines 2008) or with scattered relict populations. Prior to Euro-American colonization, the South Dakota landscape was dominated by diverse assemblages of native showy forbs and grasses. Settlement of the state east of the Missouri River began in the late 1850's and by the late 1870's nearly all arable land in the eastern portion of the state had been converted from tallgrass prairie to pasture grazing and cultivated land for crops (Gartner and Sieg 1996; Witt et al. 2013). The central and western

regions of the state, excepting the Black Hills, were primarily composed of shortgrass prairie prior to intensive colonization in the 1880's, but were subjected to intensive open range grazing by cattle and sheep. The Black Hills were and remain a mosaic of dense conifer forest, meadows, and fire-maintained aspen expanses and conifer savannas.

The near elimination of bison in favor of cattle and resultant overgrazing severely degraded the native vegetation and landscape. This was followed by the introduction of and subsequent invasion by exotic cool-season grasses like smooth brome (*Bromus inermis*) and Kentucky bluegrass (*Poa pratensis*) which were introduced for cattle forage and erosion control (Grant et al. 2020; Palit et al. 2021). These exotic grass species have invaded almost all remnant prairie sites of the Prairie Coteau region in the northeastern portion of the state, choking out the native grasses and forbs necessary to preserve and support native species diversity (Grant et al. 2009; Toledo et al. 2014). Substantial natural habitat loss has occurred in the state over the last 170 years due to agricultural intensification and colonization with up to 5% of grasslands in the Western Corn Belt being converted to row crop agriculture annually (Wright and Wimberly 2013). This is especially prevalent in eastern South Dakota where prairie remnant sites are at risk of conversion to cropland (Wimberly et al. 2017). More recently, the amount of undisturbed Conservation Reserve Program land, which could act as an important resource for pollinators, has likewise declined nationally since 2007.

As the landscape of South Dakota continues to change, baseline knowledge of the wild bee fauna will be essential for understanding biodiversity, species distributions, and population trajectories, as well as for focusing conservation strategies (LeBuhn et al. 2012; Kilpatrick et al. 2020). Thorough faunal inventories also aid in identifying knowledge gaps (e.g., under-sampled areas, seasons, and species), thus improving targeted sampling in future studies (Kilpatrick et al. 2020). The last comprehensive checklist of the bumble bees of South Dakota (Severin 1925) is nearly 100 years old and reported 20 species from the state. Since then, bumble bees have been sampled as part of smaller regional surveys, graduate research projects, and community science efforts in South Dakota, leading to thousands of records within institutional collections, online databases, and research publications (Andress 1971; Milliron 1971, 1973a, b; Drons 2012; Koch et al. 2015; Martens and Johnson 2021; Vilella-Arnizaut et al. 2022).

Here we present a revised list of bumble bee species by consolidating published records and observations to present a comprehensive checklist of bumble bees from South Dakota. This complements the old list from Nebraska (Laberge and Webb 1962), the recent list from Montana (Dolan et al. 2017), and broader distributions given by Williams et al. (2014) and online databases and identification tools.

Materials and methods

We compiled historical South Dakota bumble bee records from 1891 to 2021 from 23 institutional insect collections and two community-science observational databases. Records of South Dakota bumble bees at 21 of the institutions are from searches of two online databases: the Symbiota Collections of Arthropods Network (SCAN) and

the Global Biodiversity Information Facility (GBIF). Additional data were derived from offline digital records of bumble bee specimens at the Severin-McDaniel Insect Research Collection, Brookings, South Dakota, and at the North Central Agricultural Research Laboratory, Brookings, South Dakota. Williams et al. (2014) was also consulted about overall *Bombus* distributions throughout the state. Observational data were compiled from authoritatively identified records of bumble bees posted online at iNaturalist.org and BugGuide.net. Specimens were considered authoritatively identified if they possessed 'Research Grade' status on iNaturalist or were identified by a recognized bumble bee taxonomic expert. We compiled data on county and year in which individual bumble bees were collected. New bumble bee specimens from a survey on the Prairie Coteau and sampling in the Fort Pierre National Grassland were vouchered into the Severin-McDaniel Insect Research Collection and are available for further study. New specimens from surveys were identified with the bumble bee key on DiscoverLife.org, Williams et al. (2014), and comparisons with specimens authoritatively identified by Sam Droege, and John Ascher on iNaturalist.org and BugGuide.net. Bumble bee nomenclature in this paper follows Williams et al. (2014).

Results and discussion

We report 29 *Bombus* species in South Dakota based on a total of 9,202 records composed of 8,509 specimens from institutional collections and 693 community science observational records. Specimen records dated from 1891 to 2021, while observational records ranged from 2002 to 2021. All 29 bumble bee species were included among the institutional records, whereas only 19 species were recorded by observation (Figs 1, 2a). By comparison, South Dakota has more *Bombus* species than the surrounding states of Iowa (14 spp.), Minnesota (24 spp.), Montana (28 spp.), Nebraska (20 spp), North Dakota (23 spp.), and Wyoming (24 spp.) (Colla et al. 2011; Koch et al. 2012; Williams et al. 2014; Dolan et al. 2017; Hartman et al. 2019; Bell and Tronstad 2021; Pei et al. 2022; Xerces Bumble Bee Atlas projects for IA, ND, NE, MN).

Spatial patterns and sampling biases

Specimens and observations of bumble bee species were recorded from 60 of the 66 counties in South Dakota, though they were not distributed evenly (Fig. 1). Most records were skewed toward Pennington, Lawrence, Custer, Brookings, and Day Counties. Those five counties had the most bumble bee records in the state due to tourist attractions (Black Hills National Forest, Custer State Park, Badlands National Park, and state recreation areas), the state land grant institution, and dedicated sampling efforts. Observations occurred primarily in or near population centers with the majority coming from the Black Hills counties of Pennington, Custer, Fall River, and Lawrence in western South Dakota (Fig. 1). In contrast, 36 of the 66 counties (54.5%) had fewer than five bumble bee species reported. Because most of these counties are in more remote regions of the state, we attribute their lower species richness to under-

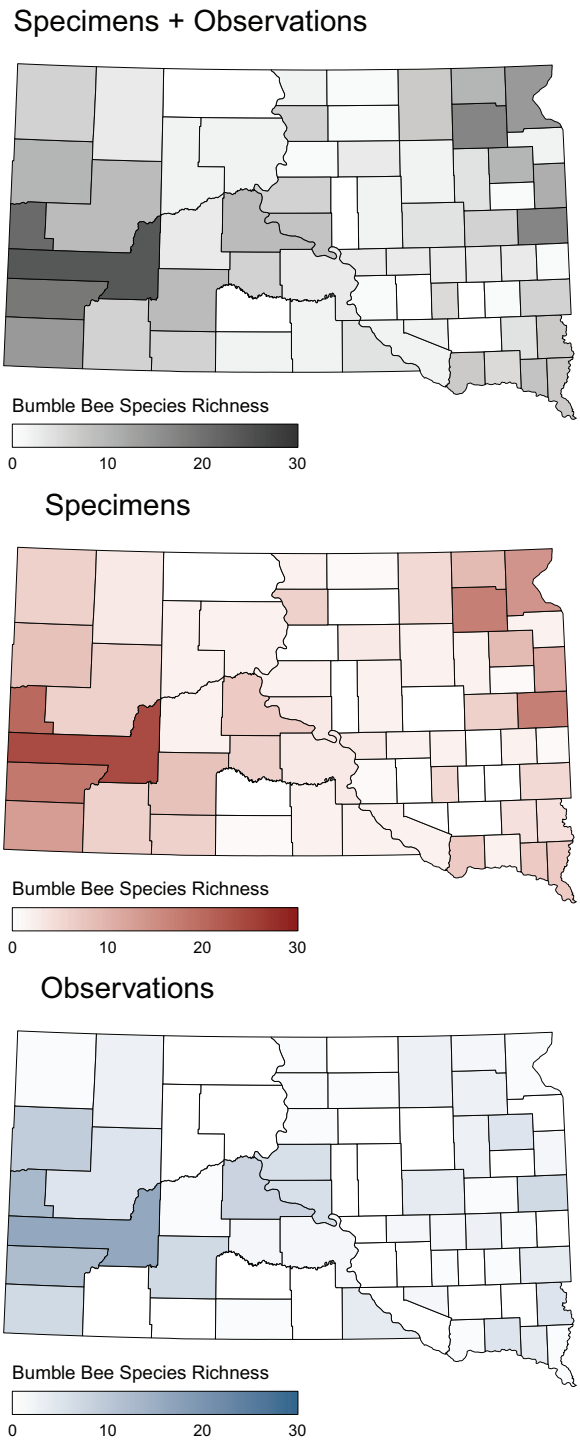

Figure 1. Geographic distribution of bumble bees (*Bombus* spp.) in South Dakota. Panels show either the combined records from specimens and observations (top/grey), just specimen records from insect collections (middle/red), or just observation records from community science databases (bottom/blue).

sampling. We anticipate these counties to have species diversity similar to adjacent and better-sampled counties though this can only be confirmed with focused sampling efforts. Because ~80% of land is privately-owned in the state, sampling *Bombus* diversity effectively in many areas will require developing relationships with private landowners.

The number of county records varied considerably among *Bombus* species. For instance, the most common and widespread bumble bee in South Dakota, *B. griseocollis*, was recorded from 54 counties. *Bombus fervidus* and *B. pensylvanicus* showed distribution patterns similar to *B. griseocollis*, with both species occurring statewide in 39 and 41 counties respectively. Conversely, 20 species were recorded from only 10 or fewer counties (Fig. 2). The majority (83%) of *Bombus* species from the state have been collected or observed after 1994 with 19 of the 29 known species being recorded since 2020, including six of the nine species of conservation concern (*B. fraternus*, *B. pensylvanicus*, *B. fervidus*, *B. occidentalis*, *B. terricola*, and *B. morrisoni*). However, five species have not been recovered since 1974 or earlier (Fig. 2b) including the three remaining species of conservation concern: *B. affinis* (critically endangered, not since 1952), *B. variabilis* (critically endangered, not since 1958), and *B. suckleyi* (critically endangered, not since 1969). In addition, *B. melanopygus*, *B. bohemicus*, and *B. citrinus* have not been reported in South Dakota since 1963, 1974, and 1994. The status of

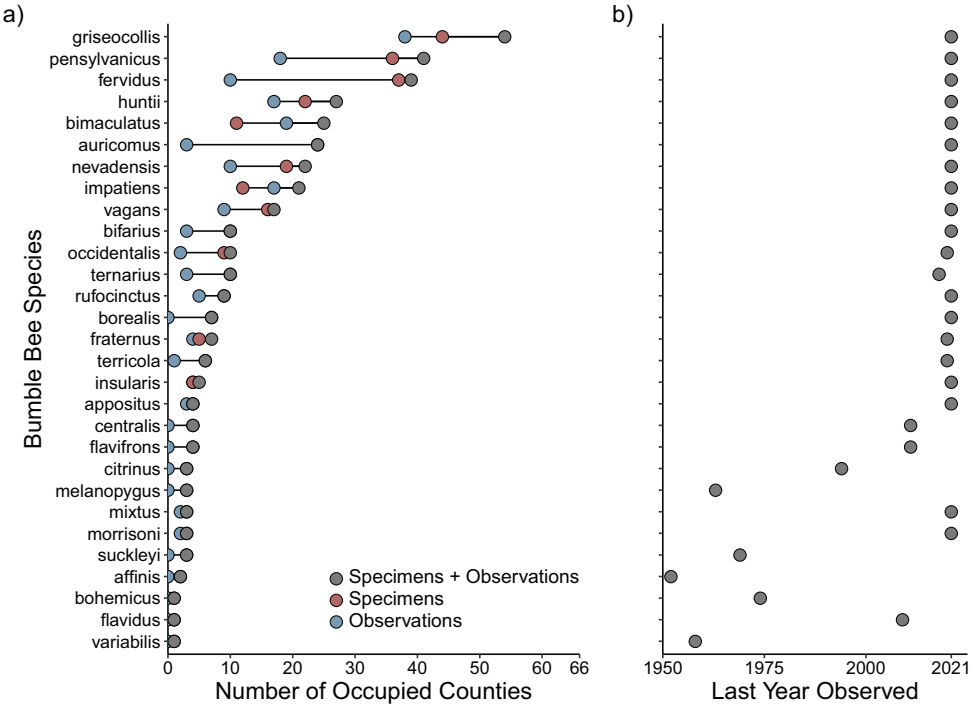

Figure 2. Number of occupied counties and last year observed for each of the 29 bumble bee species (*Bombus* spp.) in South Dakota. Panel **a** shows the number of counties (out of 66) that a bumble bee species has been either observed (blue), collected (red), or both (grey). Panel **b** shows the last year each bumble bee species was collected and/or observed in South Dakota.

B. melanopygus and *B. bohemicus* in the state today is unknown, however we anticipate *B. citrinus* to still occur in South Dakota due to its more recent sighting.

Several *Bombus* species are restricted to the western portion of the state, particularly Pennington, Lawrence, and Custer counties. This is due, in part, to the drastic landscape and elevational transitions encountered in these counties from the mixed and short-grass prairie-dominated landscape of the Great Plains and Badlands to the ponderosa pine and spruce-aspen communities of the Black Hills. *Bombus* species from the Black Hills include species from the eastern United States like *B. impatiens* and western species that are often restricted to higher elevations such as *B. appositus*, *B. mixtus*, and *B. occidentalis*. While South Dakota has extensive overlap with the *Bombus* species from neighboring states, the following species are known from the region only in Montana and Wyoming: *B. balteatus*, *B. frigidus*, *B. sitkensis*, and *B. sylvicola*. *Bombus frigidus* is also known from iNaturalist observations in northern Minnesota. These species are primarily boreal-alpine specialists and prefer elevations higher than those found in the Black Hills. While most of these species are unlikely to occur in South Dakota due to a lack of suitable high-elevation habitat, *Bombus sylvicola* is reported historically from Crook County, Wyoming near the South Dakota border and could also occur in montane meadows in the South Dakota Black Hills. *Bombus sandersoni* was collected in north central Minnesota and across the Canadian Great Plains but is not reported from South Dakota. *Bombus perplexus* was collected in Minnesota and North Dakota and, though there appear to be small areas of suitable habitat in eastern South Dakota, has not been reported from the state.

All species of cuckoo bumble bees from the United States are historically reported from South Dakota i.e. *B. bohemicus*, *B. citrinus*, *B. flavidus*, *B. insularis*, *B. suckleyi*, and *B. variabilis*. Similarly, the hosts of these bees are also present in the state including widespread species like *B. pensylvanicus*, *B. fervidus*, and *B. rufocinctus*. *Bombus flavidus* is the most recent cuckoo species reported from South Dakota and is known from a series of four specimens collected in Pennington County in 2009. Similarly, *B. bohemicus* records are from a series of seven specimens collected in 1974 from Lawrence County. Records for *B. citrinus* span from 1929 to 1994 and are centered primarily in the eastern and northeastern counties of Brookings, Marshall, and Roberts. *Bombus insularis* and *B. suckleyi* are known from more than 50 specimens each with records dating from 1924 to 2021 and 1925 to 1969 respectively. Both species are primarily from western counties (Pennington, Lawrence, Fall River, and Custer) with two aberrant records of *B. insularis* from Clay County. The final cuckoo species, *B. variabilis* is known only from a single specimen reported from Brookings County in 1958.

Species of conservation concern

Nine IUCN-listed *Bombus* species are known from South Dakota (Fig. 3), comprising approximately one-third of the total species from the state. These include the critically endangered species *Bombus affinis*, *B. suckleyi*, and *B. variabilis*, the endangered species *B. fraternus*, and the vulnerable species *B. fervidus*, *B. morrisoni*, *B. occidentalis*, *B. pensylvanicus*, and *B. terricola.* Six of the nine IUCN-listed species, including

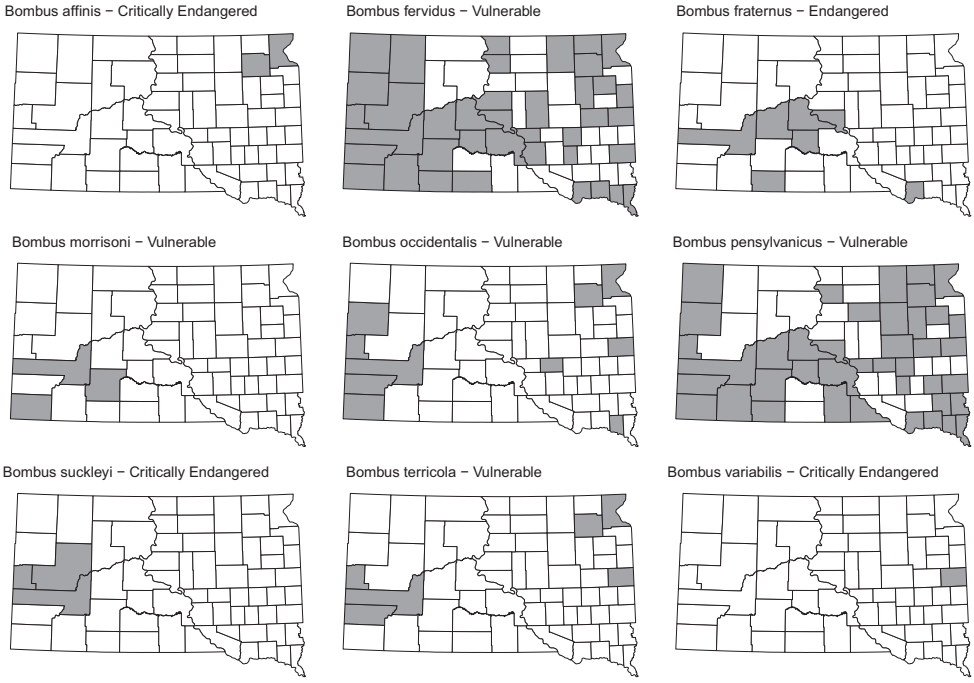

Figure 3. Geographic distribution for the nine critically endangered, endangered, and vulnerable bumble bee species in South Dakota from the International Union for Conservation of Nature (IUCN) Red List of Threatened Species.

B. fraternus, *B. fervidus*, *B. morrisoni*, *B. occidentalis*, *B. pensylvanicus*, and *B. terricola* were reported on observation-based platforms since 2020 highlighting the importance of community science in monitoring threatened species. Most of the IUCN-listed species have small geographic distributions in South Dakota with the critically endangered species *B. variabilis*, *B. affinis* and *B. suckleyi* observed in only one, two and three counties, respectively (Fig. 3). Moreover, the last records of *B. affinis*, *B. variabilis*, and *B. suckleyi* in South Dakota are from 1952, 1958, and 1969. Thus, we regard *B. affinis*, *B. suckleyi*, and *B. variabilis* as likely extirpated from South Dakota. The endangered species *B. fraternus* was reported from seven counties in the central and western parts of the state (Fig. 3). Three of the five vulnerable species, *B. morrisoni*, *B. terricola*, and *B. occidentalis*, were from occurrence records from three, six, and ten counties (Fig. 3). The remaining two vulnerable species, *B. fervidus* and *B. pensylvanicus*, were recorded from 39 and 41 counties and appear to have a nearly statewide distribution (Fig. 3).

Future work

The number of *Bombus* records from the state has slowly increased over time, with an exponential increase since the early 2000s corresponding to various pollinator research

projects. Yet we still lack records for ~10% of counties in South Dakota and fewer than five species records are available from ~55% of counties. Community science projects like the Great Plains Bumble Bee Atlas from the Xerces Society will undoubtedly help, but additional coordinated sampling efforts are needed to document *Bombus* species in under-sampled counties. Though we only anticipate reporting one or two additional new species from the state, possibly *B. perplexus* and *B. sylvicola*, adding new county records is important for understanding the distributions of species and will be necessary when considering the potential declines of these species. Moreover, future sampling efforts will need to take into consideration the vast tracts of private land and scattered small areas of public land available for surveying bumble bees in South Dakota. Establishing relationships with private landowners and communicating the importance of bumble bee species will be imperative for promoting the conservation of these charismatic and beneficial pollinators.

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Appendix 1

Checklist of the *Bombus* spp. of South Dakota

All records for *Bombus* species reported from South Dakota are presented here, organized alphabetically by subgenus, then species epithet. Each species record consists of the counties for which a voucher specimen or verifiable observational record had been confirmed. The year of the most recent record for each species is presented at the end of the county list.

Family Apidae
Subfamily Apinae
Tribe Bombini

Genus *Bombus* Latreille 1802

Taxonomy: Milliron (1971, 1973a, b); Mitchell (1962); Williams et al. (2008, 2014).

Subgenus *Bombias* Robertson, 1903

***Bombus* (*Bombias*) *auricomus* (Robertson, 1903)** – Bennett, Bon Homme, Brookings, Brown, Butte, Charles Mix, Clay, Codington, Custer, Day, Deuel, Jackson, Jones, Lake, Lawrence, Lincoln, Marshall, Minnehaha, Oglala Lakota, Pennington, Roberts, Stanley, Turner, Union. Last recorded 2021.

***Bombus* (*Bombias*) *nevadensis* Cresson, 1874** – Brookings, Butte, Codington, Custer, Day, Deuel, Dewey, Fall River, Harding, Hughes, Jackson, Jones, Lawrence, Marshall, Meade, Moody, Oglala Lakota, Pennington, Roberts, Stanley, Sully, Ziebach. Last recorded 2021.

Subgenus *Bombus* Latreille, 1802

***Bombus* (*Bombus*) *affinis* Cresson, 1863** – Day, Roberts. Last recorded 1952.

***Bombus* (*Bombus*) *occidentalis* Greene, 1858** – Brookings, Butte, Clay, Custer, Day, Fall River, Jerauld, Lawrence, Pennington, Roberts. Last recorded 2020.

***Bombus* (*Bombus*) *terricola* Kirby, 1837** – Brookings, Custer, Day, Lawrence, Pennington, Roberts. Last recorded 2020.

Subgenus *Cullumanobombus* Vogt, 1911

***Bombus* (*Cullumanobombus*) *fraternus* (Smith, 1854)** – Bennett, Bon Homme, Haakon, Hughes, Jones, Pennington, Stanley. Last recorded 2020.

***Bombus* (*Cullumanobombus*) *griseocollis* (De Geer, 1773)** – Beadle, Bennett, Bon Homme, Brookings, Brown, Buffalo, Butte, Charles Mix, Clark, Clay, Codington, Custer, Davison, Day, Deuel, Dewey, Douglas, Edmunds, Fall River, Faulk, Grant, Gregory, Hand, Harding, Hughes, Jackson, Jerauld, Jones, Kingsbury, Lake, Lawrence, Lincoln, Lyman, Marshall, McPherson, Meade, Miner, Minnehaha, Oglala Lakota, Pennington, Perkins, Potter, Roberts, Sanborn, Spink, Stanley, Sully, Todd, Tripp, Turner, Union, Walworth, Yankton, Ziebach. Last recorded 2021.

***Bombus* (*Cullumanobombus*) *morrisoni* Cresson, 1878** – Fall River, Jackson, Pennington. Last recorded 2021.

***Bombus* (*Cullumanobombus*) *rufocinctus* Cresson, 1863** – Brookings, Butte, Custer, Day, Fall River, Harding, Jackson, Lawrence, Pennington. Last recorded 2021.

Subgenus *Psithyrus* Lepeletier, 1833

***Bombus* (*Psithyrus*) *bohemicus* Seidl, 1837** – Lawrence. Last recorded 1974.

***Bombus* (*Psithyrus*) *citrinus* (Smith, 1854)** –Brookings, Marshall, Roberts. Last recorded 1994.

***Bombus* (*Psithyrus*) *flavidus* Eversmann, 1852** – Pennington. Last recorded 2009.

***Bombus* (*Psithyrus*) *insularis* (Smith, 1861)** – Clay, Custer, Fall River, Lawrence, Pennington. Last recorded 2021.

***Bombus* (*Psithyrus*) *suckleyi* Greene, 1860** – Lawrence, Meade, Pennington. Last recorded 1969.

***Bombus* (*Psithyrus*) *variabilis* (Cresson, 1872)** – Brookings. Last recorded 1958.

Subgenus *Pyrobombus* Dalla Torre, 1880

***Bombus* (*Pyrobombus*) *bifarius* Cresson, 1878** – Brookings, Custer, Davison, Day, Deuel, Fall River, Kingsbury, Lawrence, Meade, Pennington. Last recorded 2021.

***Bombus* (*Pyrobombus*) *bimaculatus* Cresson, 1863** – Brookings, Brown, Butte, Clay, Codington, Custer, Day, Deuel, Douglas, Gregory, Hughes, Jackson, Kingsbury, Lawrence, Lincoln, Marshall, Meade, Miner, Minnehaha, Pennington, Roberts, Stanley, Sully, Turner, Yankton. Last recorded 2021.

***Bombus* (*Pyrobombus*) *centralis* Cresson, 1864** – Custer, Fall River, Lawrence, Pennington. Last recorded 2011.

***Bombus* (*Pyrobombus*) *flavifrons* Cresson, 1863** – Custer, Fall River, Lawrence, Pennington. Last recorded 2011.

***Bombus* (*Pyrobombus*) *huntii* Greene, 1860** – Beadle, Bennett, Brookings, Brown, Butte, Campbell, Clark, Codington, Custer, Day, Deuel, Fall River, Faulk, Harding, Hughes, Jackson, Lawrence, Lincoln, Meade, Oglala Lakota, Pennington, Perkins, Roberts, Stanley, Sully, Union, Walworth. Last recorded 2021.

***Bombus* (*Pyrobombus*) *impatiens* Cresson, 1863** – Beadle, Bon Homme, Brookings, Clay, Codington, Davison, Day, Deuel, Gregory, Hughes, Kingsbury, Lake, Lincoln, Marshall, Miner, Minnehaha, Pennington, Stanley, Sully, Union, Yankton. Last recorded 2021.

***Bombus* (*Pyrobombus*) *melanopygus* Nylander, 1848** – Custer, Lawrence, Pennington. Last recorded 1963.

***Bombus* (*Pyrobombus*) *mixtus* Cresson, 1878** – Custer, Lawrence, Pennington. Last recorded 2021.

***Bombus* (*Pyrobombus*) *ternarius* Say, 1837** – Brookings, Custer, Day, Fall River, Grant, Lawrence, Meade, Pennington, Roberts, Walworth. Last recorded 2018.

***Bombus* (*Pyrobombus*) *vagans* Smith, 1854** – Bon Homme, Brookings, Brown, Butte, Codington, Custer, Day, Deuel, Fall River, Hamlin, Lawrence, Lincoln, Marshall, Meade, Pennington, Roberts, Union. Last recorded 2021.

Subgenus *Subterraneobombus* Vogt, 1911

***Bombus* (*Subterraneobombus*) *appositus* Cresson, 1879** – Custer, Day, Lawrence, Pennington. Last recorded 2021.

***Bombus* (*Subterraneobombus*) *borealis* Kirby, 1837** – Brookings, Codington, Day, Deuel, Marshall, Roberts, Walworth. Last recorded 2021.

Subgenus *Thoracobombus* Dalla Torre, 1880

***Bombus* (*Thoracobombus*) *fervidus* (Fabricius, 1798)** – Bennett, Bon Homme, Brookings, Brown, Brule, Buffalo, Butte, Campbell, Clark, Clay, Codington, Custer, Davison, Day, Deuel, Fall River, Haakon, Hand, Harding, Hughes, Jackson, Jones, Kingsbury, Lawrence, Lyman, Marshall, Meade, Minnehaha, Oglala Lakota, Pennington, Perkins, Roberts, Sanborn, Stanley, Sully, Todd, Union, Walworth, Yankton. Last recorded 2021.

***Bombus* (*Thoracobombus*) *pensylvanicus* (De Geer, 1773)** – Beadle, Bennett, Bon Homme, Brookings, Brown, Buffalo, Butte, Clark, Clay, Codington, Custer, Davison, Day, Deuel, Fall River, Faulk, Gregory, Haakon, Harding, Hughes, Jackson, Jerauld, Jones, Kingsbury, Lawrence, Lincoln, Lyman, Marshall, McCook, Minnehaha, Oglala Lakota, Pennington, Roberts, Sanborn, Spink, Stanley, Tripp, Turner, Union, Walworth, Yankton. Last recorded 2021.