CONIFER-FOREST DWELLING ELATEROID BEETLES (COLEOPTERA: ELATERIDAE AND THROSCIDAE) OF WESTERN SOUTH DAKOTA AND ADJACENT AREAS

Paul J. Johnson

Insect Research Collection
Box 2207A, South Dakota State University
Brookings, SD 57007

SUMMARY

Elaterid and throscid beetles were surveyed in the Black Hills Ecoregion, specifically the Black Hills, Elk Mountains, Bear Lodge Mountains, East Short Pine Hills, Long Pine Hills, and the Cave Hills. This study was a continuation of the first explicit study on elateroid beetles of the Black Hills per se, and the first effort to sample the other montane areas of the ecoregion. Specimens were sampled using Lindgren funnel traps, pitfall traps, and various methods of hand collecting. A total of 1147 specimens representing 21 genera and 41 species were collected, processed, and their data entered into a relational database. In the Bear Lodge Mountains, 27 species were recorded for the first time, both from this mountain range and the state of Wyoming. Twelve species were detected within the ecoregion for the first time.

The beetle species sampled were correlated with recognized forest habitat types. In order of decreasing elateroid beetle diversity, forest habitat types sampled in the ecoregion are: *Populus tremuloides/Corylus cornuta* (27 elateroids), *Picea glauca/Vaccinium scoparium* (24 elateroids), *Pinus ponderosa/Juniperus communis* (21 elateroids), *Pinus ponderosa/ Arctostaphylos uva-ursi* (18 elateroids), *Pinus ponderosa/Quercus macrocarpa* (15 elateroids), *Pinus ponderosa/Symphoricarpos alba* (12 elateroids), *Pinus ponderosa/Juniperus scopulorum* (12 elateroids), *Pinus ponderosa/Carex heliophila* (11 elateroids), riparian woodlands (11 elateroids). Habitats dominated by *Picea glauca* are not discussed in this report as they were sampled separately during a previous study, but the diversity data is compared. Beetle abundance roughly correlated with habitat type, with the moister and more physiognomically and taxonomic diverse habitats supporting the highest abundance numbers of most species. The greatest diversity and abundance of elateroids was found at the edges of mesic meadows where meadows met spruce, aspen, and pine forests, with all of these generalized habitats interdigitating along ill-defined ecotonal margins.

PROJECT DESCRIPTION AND BACKGROUND

During 1997 the Small Grants Program of the Wildlife Division, Department of Game, Fish and Parks, supported a portion of a study on the conifer forest restricted elaterid and throscid (elateroid) beetles in the Black Hills ecoregion and selected outlying forested ridges and mesas. Previous studies were directed at sampling the mesic northern Black Hills habitat types dominated by spruce (*Picea glauca*) and selected ponderosa pine (*Pinus ponderosa*) sites. The study phase reported here investigated a wide range of forested habitats in the Elk Mountains range of the southern Black Hills, the Bear Lodge Mountains, Wyoming, the isolated East Short Pine forest on Moreau Peak, Harding County, South Dakota, and the Long Pine forest, Carter County, Montana. A brief visit was also made to the Cave Hills, Harding County.

Recent surveys of elateroid beetles in the central and northern Black Hills (Johnson 1995) discovered species never previously reported or confirmed from the region or South Dakota, or Wyoming. Continued documentation of these beetles is enhancing understanding of the biodiversity, ecology, biogeography and paleoecology of the Black Hills ecoregion.

Adequate surveys on terrestrial and non-butterfly insects in the Black Hills ecoregion are lacking. As noted during an ecoregional planning conference in Rapid City on 19 February 1998, sponsored by The Nature Conservancy, the greatest limiting factor in evaluating the ecological needs, geographic distribution, and level of threat to invertebrate species, is the lack of basic

occurrence records. This lack of basic biodiversity information presently restricts informed management decisions regarding natural resource use, as well as conservation of species and habitats.

The combination of a need for better terrestrial invertebrate documentation and recent discovery of numerous elateroid beetle species not previously recorded from the Black Hills ecoregion indicates that new biodiversity studies are needed. Consequently, the elateroid beetles were chosen as an exemplary group for further study because of the developing database from earlier studies, their tendency to express habitat specificity, and the evidence that additional species remained to be discovered in the region.

Study objectives are reiterated in the results discussion.

Project Methods

Field acquisition of elaterid and throscid beetles requires a multifaceted approach to maximize species diversity. Experience shows that a combination of passive traps and active sampling is necessary, as recovery of the different species varies with the methods employed. Some species require direct sampling by hand under loose bark, sweeping of vegetation, or other active methods.

Trapping schemes were directed towards sampling forest habitat types. These habitat types were selected following their description by Hoffman and Alexander (1985). Forest habitat series sampled were those representing habitat types dominated by ponderosa pine (*Pinus ponderosa*), aspen (*Populus tremuloides*), and bur oak (*Quercus macrocarpa*). White spruce (*Picea glauca*) habitat types were not included as they were sampled in a separate study in 1995-1996. Ten habitat types were sampled repeatedly by traps and hand collecting in separate areas of the ecoregion.

Traps used for effective passive and long-term sampling at selected sites are Lindgren funnels, flight intercept panels, and pitfalls. Lindgren funnels are a nested series of black plastic funnels that direct specimens into a container of preservative (propylene glycol). These funnel sets mimic a tree bole and are attractive to tree resting species. Flight intercept traps interrupt the flight path of beetles, causing them to fall into pans of preservative. Pitfalls are open-mouth containers set into and flush with the ground to capture crawling species.

Thirty-eight Lindgren funnel traps were set to sample elateroid beetles in the 10 most common forest habitat types identified in the Black Hills ecoregion. Traps were left for 3.5-4 weeks and reset for a second 3.5-4 week trapping period. Thirty-five traps provided samples through two 4 week sampling periods. Four traps were removed from their original sites at the end of the first sampling period due to a lack of captures which were probably due to the xeric nature of the sites. These traps were reset on Elk Mountain to provide a denser sampling effort at this latter site during the second sampling period. One trap was vandalized, being destroyed by shotgun fire, with complete loss of specimens and the trap. Three other traps had their contents lost due to vandalism where someone removed them and dumped the catch containers and contents during one or both trapping periods. All the traps were hidden from view by their distance or position from tourists and most travellors, suggesting that allottment leasors may have been responsible for the vandalism.

Several flight intercept traps were experimentally set to assess their future use, but they

were not successful in this study. Although they are usually effective for sampling elateroid beetles flight intercept traps are inherently sensitive to disturbance and are not durable when contacted by livestock or large wildlife. Damage was excessive and use of flight intercepts was terminated. Their future use will require unused grazing allottments or establishment of fenced exclosures.

Pitfall traps were set to sample ground dwelling species. Pitfalls were set at several sites thought to be potential habitats for certain edaphic species.

Active sampling by sweeping, beating, and gleaning of vegetation dislodges flower and foliage visiting species into a net or onto a fabric square. A number of species are subcortical or are either only or best collected under loose bark of decaying logs, stumps, and snags during early season periods. Such species were recovered by searching in these latter microhabitats.

SURVEY RESULTS

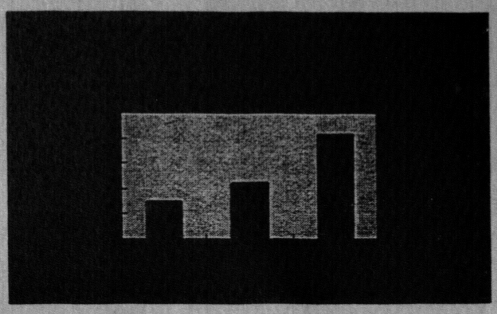
Objective 1 - *Detect species of elaterid and throscid beetles through trapping and active sampling.*

Throughout the survey area described above, 35 Lindgren funnel traps and 35 pitfall traps successfully sampled the fauna during the entire season. Active sampling by sweeping, beating, gleaning, and searching was done at all trap setting sites and randomly selected sites representative of forest habitat types not sampled between trap sites. A total of 879 target specimens were collected in 1902 trap-days for the Lindgren funnels. An additional 246 target specimens were collected by other methods. These 1147 specimens represented 21 genera and 41 species. Although no genera were added from previously compiled lists, there were 12 species newly recorded for the survey area. Of these new records, 27 species were recorded from Wyoming for the first time.

Appendix A gives a list of each species recovered. Appendix B gives a database table sorted by species. Appendix C is a database table with the species sorted by habitat type.

Objective 2 - *Closely estimate or assess the absolute biodiversity of elaterid and throscid beetles in the study area.*

Kirk and Balsbaugh (1975) recorded 15 species of click and throscid beetle from sites in the Black Hills. Johnson (1995) recorded 22 species from the Black Hills Experimental Forest, a central site in the ecoregion. This report records 41 species from the Black Hills. No species are geographically unique, but were found throughout the Black Hills ecoregion.



Extrapolation for the potential total number of species from the curve at left is difficult as additional sampling periods are necessary to detect a leveling of the curve based on additions of species. However, the primary habitat types in the Black Hills were sampled using standardized methods. Additional

captures would require the use of alternative trapping methods in specialized habitats. Overall, there may be upwards of 45 or more species in the Black Hills ecoregion. If this might be so then they would be species of specialized habitat or habits that would not have been sampled by this survey. The only significant habitat not sampled in this survey was low-elevation riparian sites, outside of the coniferous forest zones. Alternative sampling methods could include greater use of pitfall traps, or flight intercept traps. Unfortunately, the latter method, as noted above, is highly susceptible to livestock damage without inordinate additional costs for trap protection.

Objective 3 - *Document the occurrence of each species with voucher specimens.*

All specimens recovered in this survey are held in the Severin-McDaniel Insect Research Collection, South Dakota State University. Each specimen is individually labeled with locality, trap, habitat data, and identified to species. These specimens are available for study by researchers. The data for all specimens are recorded in a relational database and available in electronic form.

Objective 4 - *Acquire specimens to support related research projects on the taxonomy and ecology of the species involved.*

The survey permitted the acquisition of material important to taxonomic and systematic studies of click and throscid beetles. Macro and micro-habitat information on each species was obtained for each species. Some of these new records are already being published (Johnson 1998), while others are under preparation.

Taxonomic aspects of the Black Hills ecoregional elateroid fauna are being addressed. Two species that may be undescribed forms, here indicated as *Hadromorphus* nr. *glaucus* and *Limonius* nr *ursinus*, are presently being evaluated for their taxonomic distinctiveness. Whether or not these two forms are ultimately regarded as new species, the survey has contributed significantly to the understanding of elateroid beetle distributions in the ecoregion. Faunistic relationships to the Rocky Mountains, boreal forests of Canada, and eastern forests can now be studied appropriately. Material acquired during this study is being used to develop a monograph on the elateroid beetles of the ecoregion that will include keys to the species, habitat descriptions, and a biogeographic evaluation of the ecoregion.

Ecologically, habitats for the beetles were evaluated using U.S. Forest Service habitat type concepts. Throughout all habitat types (h.t.), the diversity of elateroid species evidently reflects relative moisture levels and canopy cover, and the diversity of tree ages, stand densities, and volume and age classes of dead and decaying wood. Larvae are the most sensitive to habitat conditions and their microhabitat selections are critical for indicating habitat specificity. Since the larvae of most of the elateroid beetles species in the Black Hills are directly associated with dead and dying conifers, the greater the diversity of age classes for both living and dead trees, the greater the diversity of beetle species. Adult elateroid beetles feed and rest at flowers and on foliage. They tend to fly in open corridors between trees or along edges. Regardless of habitat specificity, adults are most common along edges and in ecotones.

The greatest click beetle species diversity in the Black Hills on this survey was in the aspen parklands mixed with spruce and mesic pine habitats, especially those bordering mesic meadows. Twenty-seven (27) elateroid species are recorded from the *Populus tremuloides/ Corylus cornuta* (*Potr/Coco*) habitat type, including the only throscid from the survey, *Pactopus horni*. All of the sites visited abutted extensive spruce (*Picea glauca*) or pine (*Pinus ponderosa*) forests, and meadowlands. Internally, each site that contained the greatest elateroid diversity was savanna-like on shallow slopes and typically had scattered sapling spruce, while the more closed sites in steeper stream bottoms often had birch (*Betula occidentalis*) in the overstory. Many of the elateroid species found this h.t. are those found in spruce dominated savanna-like habitats or that form edges and ecotones to montane meadows, including the edaphic *Selatosomus cruciatus*, *Pseudanostirus triundulatus*, *P. propolus*, *Ampedus pullus*, and *Agriotes limosus*. Open meadow edaphic species, such as *Selatosomus aeripennis*, *Limonius* nr *ursinus*, *Hypnoidus bicolor*, and *Hadromorphus* nr *glaucus* species encroach into the ecotonal or edge areas of these h.t's, but are best regarded as accidental occurrences. This is the habitat which would be that for *Ctenicera kendalli*, a boreal forest species historically recorded from the northern Black Hills, but contemporary records remain lacking.

A wide range of click beetles provide the greater diversity in the *Potr/Coco* h.t. Many subcortical species are present with *Ampedus melsheimeri*, *A. apicatus, A. pullus*, and *A. nigricans* being more abundant than in other h.t's. The edaphic meadow and savanna species *Selatosomus cruciatus*, *Agriotes fucosus*, *A. limosus*, and *A. stabilis*, *Limonius aeger*, and *Pseudanostirus triundulatus* were also abundant in this h.t., although most of these are also found abundantly in the spruce and more mesic pine sites, too. These latter species tend to be more common in mesic savanna or other mesic and open understory biotopes. *Potr/Coco* habitats often blend with the *Pinus ponderosa/Juniperus communis* (*Pipo/Juco*) h.t. at higher elevations in the Black Hills and Bear Lodge Mountains. Where these h.t's mix they could be referred to as a transitional *Potr/Coco-Pipo/Juco* h.t. These h.t's also tend to occur on more mesic and deeper soil sites.

Based on previous surveys, the *Picea glauca/Vaccinium scoparium* (*Pigl/Vasc*) h.t. is the second most diverse forest habitat in the Black Hills with 24 recorded species. All of the elateroid species of this habitat type are shared in total in the *Potr/Coco* h.t. Many of the species are also found in the following habitat types, but in lesser abundance and at more mesic sites.

The *Pinus ponderosa/Juniperus communis (Pipo/Juco)* h.t. ranks third in click beetle diversity with 21 species. This h.t. is among the colder and more mesic h.t's the *Pipo/Syal* as it is found at higher elevations. The tendency for this h.t. to occur on steeper and shallow soiled sites likely reduces click beetle diversity. Those species recorded from the *Pipo/Juco* h.t. have larvae that are subcortical (*Ampedus occidentalis, A. apicatus*) or inhabit deep forest duff (*Selatosomus cruciatus*, *Pseudanostirus triundulatus*, *Melanotus similis*).

The *Pinus ponderosa/Arctostaphylos uva-ursi* (*Pipo/Aruv*) h.t. of middle elevations is the fourth most diverse association for elateroid beetles with 18 species. To further the impression of an intermixed and closely related vegetational associations, the elateroid beetles are also a blend. Though the majority of species are subcortical (*Ampedus* species) as is true throughout the ecoregion, the edaphic *Agriotes limosus*, *A. stabilis*, *Limonius aeger*, and *Actenicerомorphus stricklandi* were present, but in relatively low numbers.

The *Pinus ponderosa/Quercus macrocarpa* (*Pipo/Quma*) h.t. has the fifth most diverse elateroid fauna with 15 species. This is a lower elevation association found in the northern portion of the Black Hills and is widespread in the Bear Lodge Mountains. Much like the previous *Potr/Coco-Pipo/Juco* and *Pipo/Aruv* h.t's, the *Pipo/Quma* h.t. is a transitional community with regards the elateroid beetles. There is a blend of subcortical *Ampedus* species and *Melanotus castanipes*, and edaphic *Agriotes* and *Limonius* species, as well as mesic savanna species as *Pseudanostirus triundulatus* and *P. propolus*, and the cool-mesic forest species *Selatosomus cruciatus* and *Ctenicera resplendens*. The savanna species were the lowest in occurrence, reflecting the reduced grassy groundstory.

Another transitional association is a mixing of the *Potr/Coco* and *Pipo/Quma* h.t's. This association is the fourth most diverse for elateroid beetles with 13 species recorded, but all in low abundance. The *Potr/Coco-Pipo/Quma* association is a transitional mixture found in the northern Black Hills and scattered in the Bear Lodge Mountains. By the elateroid beetles it is better characterized with the subcortical *Ampedus apicatus*, *A. molestus*, and *A. pullus*. The edaphic *Selatosomus cruciatus*, *Limonius aeger*, and *Pseudanostirus triundulatus* are abundant species. A single *Aeolus mellillus* is recorded from the *Pipo/Quma* h.t., but this is a grassland species that is probably accidental from an adjacent habitat.

The *Pinus ponderosa/Symphoricarpos alba* (*Pipo/Syal*) h.t. is the most geographically extensive forest habitat type in the Black Hills ecoregion, but only ranks sixth in overall diversity. Twelve (12) species were recorded from this h.t., with most species in low abundance. The highest abundances were found in the more mesic sites of this h.t. Most of the species have larvae associated with moister microsites and are either subcortical (e.g., *Ampedus occidentalis, A. molestus*) or in deep forest duff (*Pseudanostirus triundulatus, P. propolus*). One species, *Hadromorphus* sp. nr. *glaucus*, is a meadow/grassland species and likely enters the *Pipo/Syal* from adjacent habitats.

A third Black Hills h.t. also ranked sixth in click beetle diversity, the *Quercus macrocarpa/Symphoricarpos occidentalis* (*Quma/Syoc*) h.t. This h.t. has 12 click beetle species recorded from it, but no more than four specimens of a given species was recovered. The species list shows a variety of subcortical and savanna species at low densities. This pattern of diversity may suggest that the *Quma/Syoc* h.t. is not inherently important for click beetles in the Black Hills, but possesses click beetle diversity on sites where a proportionately greater amount of *Pipo* is present.

The least diverse forested habitat types in the Black Hills are the *Pinus ponderosa/Carex heliophila* (*Pipo/Cahe*) and the undefined riparian woodlands. This habitat has only11 species recorded from it. None of the species in each habitat are remarkable, but rather each habitat has a complex of species that is clearly shared with other habitat types. The *Pipo/Cahe* habitat type tends to be one of the most xeric forest types in the Black Hills, with little understory. Moist decaying wood microhabitats are restricted to larger stumps, snags, and logs in protected sites. The species of this h.t. are either restricted to larger diameter decaying wood (*Alaus melanops, Ampedus apicatus, Melanotus castanipes*) or are grassland/dry meadow species encroaching from immediately surrounding habitats (*Melanotus similis*). This is the only h.t. from which *Ampedus atripennis* is recorded, a species indicative of faunal relationships to the southern Rocky Mountain ponderosa pine forests.

In contrast, the riparian woodlands are mesic, but are also occupied by a mixed assortment of click beetle species. As with the *Pipo/Cahe* h.t., there are no species unique to the riparian woodlands and the species present are in common with adjacent habitats, both forested and grassland. The only specimens of *Ampedus areolatus* from the survery were collected from an oak in a riparian corridor, but this species is also known from pines. *Agriotes fucosus* and *A. stabilis* are common species in adjacent mesic meadows and edges. Additional click beetle species may be present in the lower elevation riparian corridors as they leave the Black Hills for open prairie environments, but these would be species associated with moist streamside microsites rather than having a forest association.

References

Hamilton, G.R. and R.R. Alexander. 1987. Forest vegetation of the Black Hills National Forest of South Dakota and Wyoming: a habitat type classification. US Dept Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station Research Paper RM-276, Fort Collins.

Johnson, P.J. 1995. Results of a survey for Elateridae beetles in the Black Hills Experimental Forest in 1995. Unpublished Report to the U.S.D.A. Forest Service, Rocky Mountain Range and Experiment Station, Ft. Collins, Colorado.

Johnson, P.J. 1998 (1997). Records of Throscidae from Black Hills. Prairie Naturalist, in press.

ELATERID AND THROSCID BEETLES OF THE BLACK HILLS ECOREGION
1997 SURVEY RESULTS
(21 genera, 41 species)

ELATERIDAE

Actenicerомorphus stricklandi (Brown)
Aeolus mellillus (Say)
Agriotes fucosus (LeConte)
Agriotes limosus (LeConte)
Agriotes stabilis (LeConte)
Alaus melanops LeConte
Ampedus apicatus (Say)
Ampedus areolatus (Say)
Ampedus atripennis (Horn)
Ampedus luctuosus (LeConte)
Ampedus melsheimeri (Leng)
Ampedus molestus (LeConte)
Ampedus nigricans Germar
Ampedus occidentalis Lane
Ampedus pullus Germar
Cardiophorus convexus (Say)
Cardiophorus tenebrosus LeConte
Ctenicera monticola Horn
Ctenicera resplendens (Eschscholtz)
Dalopius mirabilis Brown
Danosoma brevicornis (LeConte)
Danosoma obtecta (Say)
Drasterius debilis (LeConte)
Hadromorphus nr. *glaucus* Brown
Hypnoidus bicolor (Eschscholtz)
Limonius aeger LeConte
Limonius pectoralis LeConte
Limonius nr *ursinus* Van Dyke
Megapenthes stigmosus LeConte
Melanotus castanipes (Paykull)
Melanotus similis (Kirby)
Neohypdonus tumescens (LeConte)
Oxygonus obesus (Say)
Prosternon mediana (Germar)
Pseudanostirus nigricollis (Bland)
Pseudanostirus propolus (LeConte)
Pseudanostirus triundulatus (Bland)
Selatosomus aeripennis (Kirby)
Selatosomus cruciatus L.
Selatosomus destructor (Brown)

THROSCIDAE

Pactopus horni LeConte

Genus	Species	Author	State	County	Location	Forest Community
Acteniceromorphus	stricklandi	(Brown)	WY	Crook	Cement Ridge, 441929N1040349W, 6250 ft.	Pipo/Aruv
Acteniceromorphus	stricklandi	(Brown)	WY	Crook	Bear Lodge Mtns., 443010N1042525W, 5740 ft.	Potr/Coco-Pipo/Juco
Acteniceromorphus	stricklandi	(Brown)	WY	Crook	Cement Ridge, 441929N1040449W, 6230 ft.	Potr/Coco
Acteniceromorphus	stricklandi	(Brown)	WY	Crook	Cement Ridge, 442029N1040401W, 6470 ft.	Pipo/Juco
Aeolus	mellillus	(Say)	SD	Lawrence	442540N1035505W, 5100 ft., Black Hills	Pipo/Quma
Agriotes	fucosus	(LeConte)	WY	Crook	Spring Creek, 442603N1040920W, 4250 ft.	Quma/Syoc
Agriotes	fucosus	(LeConte)	WY	Crook	Bear Lodge Mtns., 442701N1040831W, 3960 ft.	Potr/Coco
Agriotes	fucosus	(LeConte)	SD	Lawrence	442540N1035505W, 5100 ft., Black Hills	Potr/Coco-Pipo/Quma
Agriotes	fucosus	(LeConte)	SD	Custer	434304N1033243W, 5240 ft., Black Hills	Potr/Coco
Agriotes	fucosus	(LeConte)	SD	Custer	434232N1033425W, 5600 ft., Black Hills	Potr/Coco
Agriotes	fucosus	(LeConte)	WY	Crook	Spring Creek, 442701N1040831W, 3960 ft.	riparian-Pipo/Quma
Agriotes	limosus	(LeConte)	SD	Lawrence	442540N1035505W, 5100 ft., Black Hills	Pipo/Quma
Agriotes	limosus	(LeConte)	WY	Crook	Bear Lodge Mtns., 442701N1040831W, 3960 ft.	Potr/Coco
Agriotes	limosus	(LeConte)	SD	Custer	434153N1033153W, 5540 ft., Black Hills	Pipo/Aruv
Agriotes	limosus	(LeConte)	SD	Custer	434304N1033243W, 5240 ft., Black Hills	Potr/Coco
Agriotes	limosus	(LeConte)	SD	Custer	434304N1033243W, 5240 ft., Black Hills	Pipo/Aruv
Agriotes	limosus	(LeConte)	SD	Custer	434050N1033227W, 5400 ft., Black Hills	Potr/Coco
Agriotes	limosus	(LeConte)	WY	Crook	Cement Ridge, 441929N1040349W, 6250 ft.	Pipo/Aruv
Agriotes	limosus	(LeConte)	WY	Crook	Bear Lodge Mtns., 443010N1042525W, 5740 ft.	Potr/Coco-Pipo/Juco
Agriotes	limosus	(LeConte)	WY	Crook	Bear Lodge Mtns., 443507N1042324W, 5160 ft.	Pipo/Quma
Agriotes	limosus	(LeConte)	SD	Pennington	near Castle Creek Camp, T2N R3E sec. 33 NESE	Pipo/Juco
Agriotes	limosus	(LeConte)	WY	Crook	Sand Creek, 442529N1040950W, 4380 ft.	Pipo/Quma
Agriotes	limosus	(LeConte)	MT	Carter	Long Pine Hills, 453751N1041047W, 4050 ft.	Pipo/Syal
Agriotes	limosus	LeConte	SD	Custer	Glen Erin road, Black Hills, 434304N1033243W, 5240 ft.	Potr/Coco
Agriotes	limosus	(LeConte)	WY	Crook	Bear Lodge Mtns., 443507N1042324W, 5160 ft.	Pipo/Quma
Agriotes	limosus	(LeConte)	WY	Crook	Warren Peak, 442850N1042711W, 6280 ft.	Pipo/Juco
Agriotes	stabilis	(LeConte)	SD	Custer	434153N1033153W, 5540 ft., Black Hills	Pipo/Aruv
Agriotes	stabilis	(LeConte)	MT	Carter	Long Pine Hills, Plum Creek road, T2S R61E sec. 36 SESESE	Pipo/Quma
Agriotes	stabilis	(LeConte)	SD	Lawrence	442540N1035505W, 5100 ft., Black Hills	Pipo/Quma
Agriotes	stabilis	(LeConte)	WY	Crook	Bear Lodge Mtns., 442701N1040831W, 3960 ft.	Potr/Coco
Agriotes	stabilis	(LeConte)	SD	Custer	434050N1033227W, 5400 ft., Black Hills	Pipo/Aruv
Agriotes	stabilis	(LeConte)	WY	Crook	Spring Creek, 442603N1040920W, 4250 ft.	Quma/Syoc
Agriotes	stabilis	(LeConte)	WY	Crook	Spring Creek, 442701N1040831W, 3960 ft.	riparian-Pipo/Quma
Agriotes	stabilis	(LeConte)	WY	Crook	Sand Creek, 442529N1040950W, 4380 ft.	Pipo/Quma
Agriotes	stabilis	(LeConte)	SD	Custer	434304N1033243W, 5240 ft., Black Hills	Potr/Coco
Agriotes	stabilis	(LeConte)	SD	Lawrence	442540N1035505W, 5100 ft., Black Hills	Potr/Coco-Pipo/Quma
Alaus	melanops	LeConte	WY	Weston	434121N1040349W, 5100 ft., Elk Mts	Pipo/Juco
Alaus	melanops	LeConte	SD	Custer	434304N1033243W, 5240 ft., Black Hills	Pipo/Aruv
Alaus	melanops	LeConte	SD	Custer	434134N1040356W, 5230 ft., Elk Mts	Pipo/Juco
Alaus	melanops	LeConte	WY	Weston	434212N1040330W, 5390 ft., Elk Mts	Pipo/Juco
Alaus	melanops	LeConte	WY	Weston	434121N1040349W, 5100 ft., Elk Mts	Pipo/Juco
Alaus	melanops	LeConte	SD	Custer	432749N1035251W, 4679 ft., Black Hills	Pipo/Cahe
Ampedus	apicatus	(Say)	SD	Custer	434304N1033243W, 5240 ft., Black Hills	Potr/Coco

Genus	Species	Author	State	County	Location	Forest Community
Ampedus	apicatus	(Say)	SD	Custer	434304N1033243W, 5240 ft., Black Hills	Pipo/Aruv
Ampedus	apicatus	(Say)	SD	Custer	434050N1033227W, 5400 ft., Black Hills	Potr/Coco
Ampedus	apicatus	(Say)	SD	Custer	434232N1033425W, 5600 ft., Black Hills	Pipo/Juco
Ampedus	apicatus	(Say)	SD	Lawrence	442540N1035505W, 5100 ft., Black Hills	Potr/Coco-Pipo/Quma
Ampedus	apicatus	(Say)	WY	Weston	434121N1040349W, 5100 ft., Elk Mts	Pipo/Juco
Ampedus	apicatus	(Say)	SD	Custer	Pilger Mtn, T6S R1E sec 29 NWSE	Pipo/Jusc
Ampedus	apicatus	(Say)	SD	Custer	Pilger Mtn, T6S R1E sec 29 NWSE	Pipo/Juco
Ampedus	apicatus	(Say)	WY	Crook	Sand Creek, 442529N1040950W, 4380 ft.	Pipo/Quma
Ampedus	apicatus	(Say)	WY	Crook	Spring Creek, 442603N1040920W, 4250 ft.	Quma/Syoc
Ampedus	apicatus	(Say)	SD	Custer	434134N1040356W, 5230 ft., Elk Mts	Pipo/Juco
Ampedus	apicatus	(Say)	WY	Crook	Bear Lodge Mtns., 443647N1042128W, 4950 ft.	Potr/Coco-Pipo/Quma
Ampedus	apicatus	(Say)	WY	Crook	Bear Lodge Mtns., 443010N1042525W, 5740 ft.	Potr/Coco-Pipo/Juco
Ampedus	apicatus	(Say)	SD	Lawrence	442540N1035505W, 5100 ft., Black Hills	Pipo/Quma
Ampedus	apicatus	(Say)	WY	Weston	434121N1040349W, 5100 ft., Elk Mts.	Pipo/Juco
Ampedus	apicatus	(Say)	WY	Weston	434134N1040356W, 5230 ft., Elk Mts	Pipo/Juco
Ampedus	apicatus	(Say)	SD	Custer	434212N1040330W, 5390 ft., Elk Mts	Pipo/Juco
Ampedus	apicatus	(Say)	WY	Weston	434212N1040330W, 5390 ft., Elk Mts	Pipo/Juco
Ampedus	apicatus	(Say)	SD	Custer	434313N1040249W, 5662 ft., Elk Mts	Pipo/Juco
Ampedus	apicatus	(Say)	WY	Crook	Warren Peak, 442850N1042711W, 6280 ft.	Pipo/Juco
Ampedus	apicatus	(Say)	WY	Carter	Ekalaka Park, T1N, R58E sec. 33 NENE	Potr/Coco-Pipo/Juco
Ampedus	apicatus	(Say)	WY	Crook	Spring Creek, 442701N1040831W, 3960 ft.	riparian-Pipo/Quma
Ampedus	apicatus	(Say)	WY	Crook	Bear Lodge Mtns., 442701N1040831W, 3960 ft.	Potr/Coco
Ampedus	apicatus	(Say)	SD	Lawrence	S. Fork Spearfish Creek, T4N R1E sec. 9 NENW	Pigl/Vasc
Ampedus	areolatus	(Say)	WY	Crook	Sand Creek, T51N R61W sec 10 SENW	riparian-Pipo-Quma
Ampedus	atripennis	Horn	WY	Weston	434121N1040349W, 5100 ft., Elk Mts	Pipo/Juco
Ampedus	atripennis	Horn	SD	Fall River	Robinson Flats, T7S R2E sec. 10 SESESE, Elk Mts	Pipo/Cahe
Ampedus	luctuosus	(LeConte)	MT	Carter	Long Pine Hills, 454053N1041242W, 3910 ft.	Pipo/Syal
Ampedus	luctuosus	(LeConte)	WY	Crook	Bear Lodge Mtns., 443010N1042525W, 5740 ft.	Potr/Coco-Pipo/Juco
Ampedus	luctuosus	(LeConte)	SD	Custer	434304N1033243W, 5240 ft., Black Hills	Pipo/Aruv
Ampedus	luctuosus	(LeConte)	SD	Custer	434304N1033243W, 5240 ft., Black Hills	Potr/Coco
Ampedus	luctuosus	(LeConte)	WY	Crook	Warren Peak, 442850N1042711W, 6280 ft.	Pipo/Juco
Ampedus	luctuosus	(LeConte)	WY	Crook	Cement Ridge, 441929N1040349W, 6250 ft.	Pipo/Aruv
Ampedus	luctuosus	(LeConte)	SD	Custer	Pilger Mtn, T6S R1E sec 29 NWSE	Pipo/Juco
Ampedus	luctuosus	(LeConte)	WY	Crook	Cook Lake, Bear Lodge Mtns, T53N R63W sec. 10 SWSE	Pipo/Aruv
Ampedus	luctuosus	(LeConte)	WY	Crook	Bear Lodge Mtns., 442701N1040831W, 3960 ft.	Potr/Coco
Ampedus	melsheimeri	(Leng)	SD	Custer	434050N1033227W, 5400 ft., Black Hills	Potr/Coco
Ampedus	melsheimeri	(Leng)	SD	Lawrence	442540N1035505W, 5100 ft., Black Hills	Potr/Coco-Pipo/Quma
Ampedus	melsheimeri	(Leng)	SD	Custer	434304N1033243W, 5240 ft., Black Hills	Pipo/Aruv
Ampedus	melsheimeri	(Leng)	SD	Custer	434113N1033224W, 5560 ft., Black Hills	Potr/Coco
Ampedus	melsheimeri	(Leng)	SD	Custer	434050N1033227W, 5400 ft., Black Hills	Pipo/Aruv
Ampedus	molestus	(LeConte)	SD	Harding	E. Short Pine Hills, 452155N103430W, 3900 ft.	Pipo/Syal
Ampedus	molestus	(LeConte)	WY	Crook	Spring Creek, 442603N1040920W, 4250 ft.	Quma/Syoc
Ampedus	molestus	(LeConte)	WY	Weston	434121N1040349W, 5100 ft., Elk Mts	Pipo/Juco

Genus	Species	Author	State	County	Location	Forest Community
Ampedus	molestus	(LeConte)	MT	Carter	Long Pine Hills, 453751N1041047W, 4050 ft.	Pipo/Syal
Ampedus	molestus	(LeConte)	MT	Carter	Long Pine Hills, 454053N1041242W, 3910 ft.	Pipo/Syal
Ampedus	molestus	(LeConte)	WY	Crook	Sand Creek, 442529N1040950W, 4380 ft.	Pipo/Quma
Ampedus	molestus	(LeConte)	WY	Crook	Spring Creek, 442701N1040831W, 3960 ft.	riparian-Pipo/Quma
Ampedus	molestus	(LeConte)	WY	Crook	Bear Lodge Mtns., 443010N1042525W, 5740 ft.	Potr/Coco-Pipo/Juco
Ampedus	molestus	(LeConte)	SD	Lawrence	442540N1035505W, 5100 ft., Black Hills	Potr/Coco-Pipo/Quma
Ampedus	molestus	(LeConte)	SD	Harding	E. Short Pine Hills, 452155N103430W, 3900 ft.	Pipo/Jusc
Ampedus	molestus	(LeConte)	SD	Custer	434304N1033243W, 5240 ft., Black Hills	Potr/Coco
Ampedus	molestus	(LeConte)	SD	Lawrence	442540N1035505W, 5100 ft., Black Hills	Pipo/Quma
Ampedus	molestus	(LeConte)	WY	Weston	434121N1040349W, 5100 ft., Elk Mts	Pipo/Juco
Ampedus	nigricans	(Germar)	WY	Crook	Cement Ridge, 441929N1040449W, 6230 ft.	Potr/Coco
Ampedus	nigricans	(Germar)	MT	Carter	Long Pine Hills, 454053N1041242W, 3910 ft.	Pipo/Syal
Ampedus	nigricans	(Germar)	WY	Crook	Cement Ridge, 442029N1040401W, 6470 ft.	Pipo/Juco
Ampedus	nigricans	(Germar)	SD	Custer	434232N1033425W, 5600 ft., Black Hills	Potr/Coco
Ampedus	nigricans	(Germar)	WY	Crook	Bear Lodge Mtns., 443010N1042525W, 5740 ft.	Potr/Coco-Pipo/Juco
Ampedus	nigricans	(Germar)	SD	Custer	434050N1033227W, 5400 ft., Black Hills	Potr/Coco
Ampedus	nigricans	(Germar)	WY	Crook	Bear Lodge Mtns., 442701N1040831W, 3960 ft.	Potr/Coco
Ampedus	nigricans	(Germar)	WY	Crook	Bear Lodge Mtns., 443647N1042128W, 4950 ft.	Potr/Coco-Pipo/Quma
Ampedus	nigricans	(Germar)	SD	Custer	434304N1033243W, 5240 ft., Black Hills	Potr/Coco
Ampedus	nigricans	(Germar)	WY	Crook	Cement Ridge, 442029N1040401W, 6470 ft.	Pipo/Juco
Ampedus	nigricans	(Germar)	WY	Crook	Cement Ridge, 441929N1040349W, 6250 ft.	Pipo/Aruv
Ampedus	nigricans	(Germar)	WY	Crook	Cement Ridge, 441929N1040349W, 6250 ft.	Pipo/Aruv
Ampedus	occidentalis	Lane	WY	Crook	Warren Peak, 442850N1042711W, 6280 ft.	Pipo/Juco
Ampedus	occidentalis	Lane	WY	Weston	434121N1040349W, 5100 ft., Elk Mts	Pipo/Cahe
Ampedus	occidentalis	Lane	WY	Crook	Bear Lodge Mtns., 443010N1042525W, 5740 ft.	Potr/Coco-Pipo/Juco
Ampedus	occidentalis	Lane	WY	Crook	Bear Lodge Mtns., 443647N1042128W, 4950 ft.	Potr/Coco-Pipo/Quma
Ampedus	occidentalis	Lane	MT	Carter	Long Pine Hills, 454053N1041242W, 3910 ft.	Pipo/Syal
Ampedus	occidentalis	Lane	MT	Carter	Long Pine Hills, 453751N1041047W, 4050 ft.	Pipo/Syal
Ampedus	occidentalis	Lane	SD	Harding	E. Short Pine Hills, 452238N1034301W, 4050 ft.	Pipo/Syal
Ampedus	occidentalis	Lane	SD	Harding	E. Short Pine Hills, 452155N103430W, 3900 ft.	Pipo/Syal
Ampedus	pullus	(Germar)	WY	Crook	Bear Lodge Mtns., 442701N1040831W, 3960 ft.	Potr/Coco
Ampedus	pullus	(Germar)	WY	Crook	Warren Peak, 442850N1042711W, 6280 ft.	Pipo/Juco
Ampedus	pullus	(Germar)	WY	Crook	Bear Lodge Mtns., 443507N1042324W, 5160 ft.	Pipo/Quma
Ampedus	pullus	(Germar)	WY	Weston	434121N1040349W, 5100 ft., Elk Mts	Pipo/Juco
Ampedus	pullus	(Germar)	SD	Custer	434304N1033243W, 5240 ft., Black Hills	Pipo/Aruv
Ampedus	pullus	(Germar)	WY	Crook	Bear Lodge Mtns., 443647N1042128W, 4950 ft.	Potr/Coco-Pipo/Quma
Ampedus	pullus	(Germar)	WY	Crook	Spring Creek, 442603N1040920W, 4250 ft.	Quma/Syoc
Ampedus	pullus	(Germar)	SD	Custer	434304N1033243W, 5240 ft., Black Hills	Potr/Coco
Ampedus	pullus	(Germar)	SD	Lawrence	442540N1035505W, 5100 ft., Black Hills	Pipo/Quma
Ampedus	pullus	(Germar)	WY	Crook	Sand Creek, 442529N1040950W, 4380 ft.	Pipo/Quma
Ampedus	pullus	(Germar)	SD	Lawrence	442540N1035505W, 5100 ft., Black Hills	Potr/Coco-Pipo/Quma
Ampedus	pullus	(Germar)	WY	Crook	Bear Lodge Mtns., 443010N1042525W, 5740 ft.	Potr/Coco-Pipo/Juco
Ampedus	pullus	(Germar)	SD	Custer	434113N1033224W, 5560 ft., Black Hills	Potr/Coco

Genus	Species	Author	State	County	Location	Forest Community
Ampedus	pullus	(Germar)	SD	Custer	434050N1033227W, 5400 ft., Black Hills	Potr/Coco
Ampedus	pullus	(Germar)	WY	Crook	Cement Ridge, 441929N1040449W, 6230 ft.	Potr/Coco
Ampedus	pullus	(Germar)	WY	Crook	Spring Creek, 442701N1040831W, 3960 ft.	riparian-Pipo/Quma
Ampedus	pullus	(Germar)	SD	Custer	434232N1033425W, 5600 ft., Black Hills	Potr/Coco
Ampedus	pullus	(Germar)	SD	Custer	432749N1035251W, 4679 ft., Black Hills	Pipo/Cahe
Ampedus	pullus	(Germar)	WY	Crook	Bear Lodge Mtns., 443507N1042324W, 5160 ft.	Pipo/Quma
Ampedus	pullus	(Germar)	WY	Weston	434212N1040330W, 5390 ft., Elk Mts	Pipo/Juco
Ampedus	pullus	(Germar)	SD	Custer	434212N1040330W, 5390 ft., Elk Mts	Pipo/Juco
Ampedus	pullus	(Germar)	SD	Pennington	Sherwood-Kinney Divide, 435418N1040124W, 6220 ft.	Pipo/Syal
Ampedus	pullus	(Germar)	WY	Crook	Cement Ridge, 441929N1040349W, 6250 ft.	Pipo/Aruv
Cardiophorus	convexus	(Say)	WY	Weston	434121N1040349W, 5100 ft., Elk Mts.	Pipo/Juco
Cardiophorus	tenebrosus	LeConte	WY	Crook	Black Hills, Spring Creek, 442701N1040831W, 3960 ft.	riparian-Pipo/Quma
Cardiophorus	tenebrosus	LeConte	SD	Fall River	432749N1035251W, 4679 ft., Elk Mts	Pipo/Juco
Ctenicera	monticola	Horn	SD	Harding	E. Short Pine Hills, 452238N1034301W, 3900 ft.	Potr/Coco
Ctenicera	monticola	Horn	SD	Custer	Black Hills, 434304N1033243W, 5240 ft.	Potr/Coco
Ctenicera	monticola	Horn	WY	Crook	Cement Ridge, 441929N1040349W, 6250 ft.	Potr/Aruv
Ctenicera	resplendens	(Eschscholtz)	WY	Crook	Sand Creek, 442529N1040950W, 4380 ft.	Pipo/Quma
Dalopius	mirabilis	(Brown)	WY	Crook	Bear Lodge Mtns., 442701N1040831W, 3960 ft.	Potr/Coco
Dalopius	mirabilis	(Brown)	SD	Custer	434232N1033425W, 5600 ft., Black Hills	Potr/Coco
Danosoma	brevicornis	(LeConte)	SD	Harding	E. Short Pine Hills, 452238N1034301W, 4050 ft.	Pipo/Syal
Danosoma	brevicornis	(LeConte)	WY	Weston	434212N1040330W, 5390 ft., Elk Mts	Pipo/Juco
Danosoma	brevicornis	(LeConte)	SD	Custer	434324N1040313W, 5610 ft., Elk Mts	Pipo/Juco
Danosoma	brevicornis	(LeConte)	SD	Custer	434313N1040249W, 5662 ft., Elk Mts	Pipo/Juco
Danosoma	brevicornis	(LeConte)	WY	Crook	Spring Creek, 442603N1040920W, 4250 ft.	Quma/Syoc
Danosoma	obtecta	(Say)	WY	Crook	Sand Creek, 442529N1040950W, 4380 ft.	Pipo/Quma
Danosoma	obtecta	(Say)	SD	Custer	434304N1033243W, 5240 ft., Black Hills	Potr/Coco
Danosoma	obtecta	(Say)	WY	Crook	Spring Creek, 442603N1040920W, 4250 ft.	Quma/Syoc
Danosoma	obtecta	(Say)	WY	Crook	Bear Lodge Mtns., 443010N1042525W, 5740 ft.	Potr/Coco-Pipo/Juco
Danosoma	obtecta	(Say)	WY	Crook	Cement Ridge, 441929N1040349W, 6250 ft.	Pipo/Aruv
Danosoma	obtecta	(Say)	SD	Harding	E. Short Pine Hills, 452155N103430W, 3900 ft.	Pipo/Jusc
Drasterius	debilis	(LeConte)	WY	Crook	Cement Ridge, 441929N1040449W, 6230 ft.	Potr/Coco
Drasterius	debilis	(LeConte)	WY	Crook	Bear Lodge Mtns., 443010N1042525W, 5740 ft	Potr/Coco-Pipo/Juco
Hadromorphus	nr. glaucus	(Brown)	SD	Custer	434212N1040330W, 5390 ft., Elk Mts	Pipo/Juco
Hadromorphus	nr. glaucus	(Brown)	SD	Custer	434313N1040249W, 5662 ft., Elk Mts	Pipo/Juco
Hadromorphus	nr. glaucus	(Brown)	WY	Crook	Spring Creek, 442603N1040920W, 4250 ft.	Quma/Syoc
Hadromorphus	nr. glaucus	(Brown)	WY	Weston	Elk Mtn, 43101N1040336W, 4900 ft.	Pipo/Syal
Hadromorphus	nr. glaucus	(Brown)	SD	Harding	E. Short Pine Hills, 452238N1034301W, 4050 ft.	Pipo/Syal
Hadromorphus	nr. glaucus	(Brown)	SD	Harding	E. Short Pine Hills, 452155N103430W, 3900 ft.	Pipo/Syal
Hadromorphus	nr. glaucus	(Brown)	SD	Fall River	432830N1035130W, Elk Mts	Pipo/Cahe
Hadromorphus	nr. glaucus	(Brown)	MT	Carter	Long Pine Hills, 454053N1041242W, 3910 ft.	Pipo/Syal
Hypnoidus	bicolor	(Eschscholtz)	SD	Lawrence	441842N1040039W, 6132 ft, Black Hills	Pipo/Aruv
Hypnoidus	bicolor	(Eschscholtz)	SD	Lawrence	441842N1040039W, 6132 ft, Black Hills	Pipo/Aruv
Limonius	aeger	LeConte	SD	Pennington	McIntosh Fen, 440157N1035158W, 6030 ft.	Potr/Coco

Genus	Species	Author	State	County	Location	Forest Community
Limonius	aeger	LeConte	SD	Harding	E. Short Pine Hills, 452238N1034301W, 3900 ft.	Pipo/Syal
Limonius	aeger	LeConte	SD	Lawrence	442540N1035505W, 5100 ft., Black Hills	Pipo/Quma
Limonius	aeger	LeConte	SD	Pennington	near Castle Creek Camp, T2N R3E sec. 33 NESE	Pipo/Juco
Limonius	aeger	LeConte	WY	Crook	Cement Ridge, 441929N1040349W, 6250 ft.	Pipo/Aruv
Limonius	aeger	LeConte	SD	Pennington	McIntosh Fen, 440157N1035158W, 6030 ft.	Potr/Coco
Limonius	aeger	LeConte	WY	Crook	Bear Lodge Mtns., 443251N4143502W, 5020 ft.	Potr/Coco
Limonius	aeger	LeConte	SD	Custer	434304N1033243W, 5240 ft., Black Hills	Potr/Coco
Limonius	aeger	LeConte	MT	Carter	Long Pine Hills, Plum Creek road, T2S R61E sec. 36 SESESE	Pipo/Quma
Limonius	aeger	LeConte	SD	Custer	434050N1033227W, 5400 ft., Black Hills	Potr/Coco
Limonius	aeger	LeConte	SD	Lawrence	442540N1035505W, 5100 ft., Black Hills	Potr/Coco-Pipo/Quma
Limonius	nr ursinus	Van Dyke	WY	Carter	Ekalaka Park, T1N, R58E sec. 33 NENE	Pipo/Aruv
Limonius	nr ursinus	Van Dyke	SD	Custer	432749N1035251W, 4679 ft., Black Hills	Pipo/Cahe
Limonius	nr ursinus	Van Dyke	SD	Pennington	upper Castle Creek, T2N R1E sec. 35 NESE	meadow
Limonius	nr ursinus	Van Dyke	SD	Custer	Black Hills, 433614N1044030W, 4940 ft.	Pipo/Cahe
Limonius	pectoralis	LeConte	SD	Custer	Black Hills, 434304N1033243W, 5240 ft.	Potr/Coco
Megapenthes	stigmosus	LeConte	SD	Pennington	McIntosh Fen, 440157N1035158W, 6030 ft.	Potr/Coco
Megapenthes	stigmosus	LeConte	WY	Crook	Bear Lodge Mtns., 443647N1042128W, 4950 ft.	Potr/Coco-Pipo/Quma
Melanotus	castanipes	(Paykull)	SD	Custer	434232N1033425W, 5600 ft., Black Hills	Potr/Coco
Melanotus	castanipes	(Paykull)	WY	Crook	Bear Lodge Mtns., 443647N1042128W, 4950 ft.	Potr/Coco-Pipo/Quma
Melanotus	castanipes	(Paykull)	SD	Lawrence	442540N1035505W, 5100 ft., Black Hills	Potr/Coco-Pipo/Quma
Melanotus	castanipes	(Paykull)	WY	Crook	Bear Lodge Mtns., 443010N1042525W, 5740 ft.	Potr/Coco-Pipo/Juco
Melanotus	castanipes	(Paykull)	WY	Crook	Cement Ridge, 441929N1040349W, 6250 ft.	Pipo/Aruv
Melanotus	castanipes	(Paykull)	WY	Crook	Bear Lodge Mtns., 443507N1042324W, 5160 ft.	Pipo/Quma
Melanotus	castanipes	(Paykull)	SD	Custer	432749N1035251W, 4679 ft., Black Hills	Pipo/Cahe
Melanotus	castanipes	(Paykull)	SD	Custer	434050N1033227W, 5400 ft., Black Hills	Potr/Coco
Melanotus	castanipes	(Paykull)	SD	Lawrence	442540N1035505W, 5100 ft., Black Hills	Pipo/Quma
Melanotus	castanipes	(Paykull)	SD	Custer	434232N1033425W, 5600 ft., Black Hills	Potr/Coco
Melanotus	castanipes	(Paykull)	WY	Crook	Warren Peak, 442850N1042711W, 6280 ft.	Pipo/Juco
Melanotus	castanipes	(Paykull)	WY	Crook	3.5 mi. N. of Cook Lake, T53N R63W sec. 12 SENW	Pipo/Aruv
Melanotus	castanipes	(Paykull)	WY	Weston	434121N1040349W, 5100 ft., Elk Mts	Pipo/Juco
Melanotus	castanipes	(Paykull)	WY	Weston	434212N1040330W, 5390 ft., Elk Mts	Pipo/Juco
Melanotus	similis	(Kirby)	SD	Custer	434113N1033224W, 5560 ft., Black Hills	Potr/Coco
Melanotus	similis	(Kirby)	SD	Custer	434050N1033227W, 5400 ft., Black Hills	Pipo/Aruv
Melanotus	similis	(Kirby)	WY	Crook	Bear Lodge Mtns., 443010N1042525W, 5740 ft.	Potr/Coco-Pipo/Juco
Melanotus	similis	(Kirby)	SD	Custer	434153N1033153W, 5540 ft., Black Hills	Pipo/Aruv
Melanotus	similis	(Kirby)	SD	Custer	434304N1033243W, 5240 ft., Black Hills	Pipo/Aruv
Melanotus	similis	(Kirby)	WY	Crook	Bear Lodge Mtns., 442701N1040831W, 3960 ft.	Potr/Coco
Melanotus	similis	(Kirby)	WY	Weston	Elk Mtn, 43101N1040336W, 4900 ft.	Pipo/Syal
Melanotus	similis	(Kirby)	SD	Custer	432749N1035251W, 4679 ft., Black Hills	Pipo/Cahe
Melanotus	similis	(Kirby)	WY	Crook	Spring Creek, 442603N1040920W, 4250 ft.	Quma/Syoc
Melanotus	similis	(Kirby)	SD	Custer	434313N1040249W, 5662 ft., Elk Mts	Pipo/Juco
Melanotus	similis	(Kirby)	WY	Crook	Warren Peak, 442850N1042711W, 6280 ft.	Pipo/Juco
Melanotus	similis	(Kirby)	SD	Custer	434324N1040313W, 5610 ft., Elk Mts	Pipo/Juco

Genus	Species	Author	State	County	Location	Forest Community
Melanotus	similis	(Kirby)	WY	Weston	434121N1040349W, 5100 ft., Elk Mts	Pipo/Juco
Melanotus	similis	(Kirby)	SD	Custer	434212N1040330W, 5390 ft., Elk Mts	Pipo/Juco
Melanotus	similis	(Kirby)	WY	Weston	434121N1040349W, 5100 ft., Elk Mts	Pipo/Juco
Melanotus	similis	(Kirby)	WY	Weston	434212N1040330W, 5390 ft., Elk Mts	Pipo/Juco
Neohypdonus	tumescens	(LeConte)	SD	Pennington	McIntosh Fen, 440157N1035158W, 6030 ft.	Potr/Coco
Oxygonus	obesus	(Say)	WY	Crook	Spring Creek, 442603N1040920W, 4250 ft.	Quma/Syoc
Oxygonus	obesus	(Say)	WY	Crook	Spring Creek, 442701N1040831W, 3960 ft.	riparian-Pipo/Quma
Pactopus	horni	LeConte	SD	Pennington	McIntosh Fen, 440157N1035158W, 6030 ft.	Potr/Coco
Prosternon	mediana	(Germar)	SD	Custer	434304N1033243W, 5240 ft., Black Hills	Potr/Coco
Prosternon	mediana	(Germar)	SD	Custer	434304N1033243W, 5240 ft., Black Hills	Pipo/Aruv
Prosternon	mediana	(Germar)	WY	Crook	Bear Lodge Mtns., 443010N1042525W, 5740 ft.	Potr/Coco-Pipo/Juco
Prosternon	mediana	(Germar)	SD	Custer	434313N1040249W, 5662 ft., Elk Mts	Pipo/Juco
Prosternon	mediana	(Germar)	WY	Crook	Spring Creek, 442701N1040831W, 3960 ft.	riparian-Pipo/Quma
Prosternon	mediana	(Germar)	WY	Crook	Bear Lodge Mtns., 443507N1042324W, 5160 ft.	Pipo/Quma
Prosternon	mediana	(Germar)	SD	Custer	Pilger Mtn., 432855N1035352W, 4823 ft.	Pipo/Cahe
Pseudanostirus	nigricollis	(Bland)	SD	Pennington	McIntosh Fen, 440157N1035158W, 6030 ft.	Potr/Coco
Pseudanostirus	nigricollis	(Bland)	WY	Crook	Bear Lodge Mtns., 443507N1042324W, 5160 ft.	Pipo/Quma
Pseudanostirus	nigricollis	(Bland)	WY	Crook	Spring Creek, 442701N1040831W, 3960 ft.	riparian-Pipo/Quma
Pseudanostirus	propolus	(LeConte)	WY	Crook	Cement Ridge, 442029N1040401W, 6470 ft.	Pipo/Juco
Pseudanostirus	propolus	(LeConte)	SD	Custer	434050N1033227W, 5400 ft., Black Hills	Potr/Coco
Pseudanostirus	propolus	(LeConte)	SD	Custer	432749N1035251W, 4679 ft., Black Hills	Pipo/Cahe
Pseudanostirus	propolus	(LeConte)	WY	Weston	434212N1040330W, 5390 ft., Elk Mts	Pipo/Juco
Pseudanostirus	propolus	(LeConte)	WY	Crook	Bear Lodge Mtns., 443010N1042525W, 5740 ft.	Potr/Coco-Pipo/Juco
Pseudanostirus	propolus	(LeConte)	SD	Custer	434219N1033445W, 5560 ft., Black Hills	Pipo/Aruv
Pseudanostirus	propolus	(LeConte)	WY	Weston	Elk Mtn, 43101N1040336W, 4900 ft.	Pipo/Syal
Pseudanostirus	propolus	(LeConte)	SD	Custer	432749N1035251W, 4679 ft., Black Hills	Pipo/Cahe
Pseudanostirus	propolus	(LeConte)	MT	Carter	Long Pine Hills, 454053N1041242W, 3910 ft.	Pipo/Syal
Pseudanostirus	propolus	(LeConte)	SD	Harding	E. Short Pine Hills, 452238N1034301W, 4050 ft.	Pipo/Syal
Pseudanostirus	propolus	(LeConte)	WY	Crook	Sand Creek, 442529N1040950W, 4380 ft.	Pipo/Quma
Pseudanostirus	propolus	(LeConte)	SD	Pennington	McIntosh Fen, 440157N1035158W, 6030 ft.	Potr/Coco
Pseudanostirus	propolus	(LeConte)	WY	Crook	Warren Peak, 442850N1042711W, 6280 ft.	Pipo/Juco
Pseudanostirus	propolus	(LeConte)	SD	Lawrence	442540N1035505W, 5100 ft., Black Hills	Pipo/Quma
Pseudanostirus	propolus	(LeConte)	SD	Custer	434113N1033224W, 5560 ft., Black Hills	Potr/Coco
Pseudanostirus	propolus	(LeConte)	SD	Pennington	McIntosh Fen, 440157N1035158W, 6030 ft.	Potr/Coco
Pseudanostirus	propolus	(LeConte)	WY	Crook	Bear Lodge Mtns., 442701N1040831W, 3960 ft.	Potr/Coco
Pseudanostirus	propolus	(LeConte)	SD	Pennington	near Castle Creek Camp, T2N R3E sec. 33 NESE	Pipo/Juco
Pseudanostirus	propolus	(LeConte)	WY	Weston	434134N1040356W, 5230 ft., Elk Mts	Pipo/Juco
Pseudanostirus	propolus	(LeConte)	SD	Custer	434324N1040313W, 5610 ft., Elk Mts	Pipo/Juco
Pseudanostirus	propolus	(LeConte)	WY	Crook	Spring Creek, 442701N1040831W, 3960 ft.	riparian-Pipo/Quma
Pseudanostirus	propolus	(LeConte)	SD	Custer	434304N1033243W, 5240 ft., Black Hills	Pipo/Aruv
Pseudanostirus	propolus	(LeConte)	SD	Custer	434212N1040330W, 5390 ft., Elk Mts	Pipo/Juco
Pseudanostirus	propolus	(LeConte)	SD	Fall River	432749N1035251W, 4679 ft., Elk Mts	Pipo/Juco
Pseudanostirus	triundulatus	(Bland)	WY	Crook	Bear Lodge Mtns., 443647N1042128W, 4950 ft.	Potr/Coco-Pipo/Quma

Genus	Species	Author	State	County	Location	Forest Community
Pseudanostirus	triundulatus	(Bland)	WY	Crook	Bear Lodge Mtns., 442701N1040831W, 3960 ft.	Potr/Coco
Pseudanostirus	triundulatus	(Bland)	WY	Crook	Sand Creek, 442529N1040950W, 4380 ft.	Pipo/Quma
Pseudanostirus	triundulatus	(Bland)	WY	Crook	Spring Creek, 442603N1040920W, 4250 ft.	Quma/Syoc
Pseudanostirus	triundulatus	(Bland)	WY	Crook	Spring Creek, 442701N1040831W, 3960 ft.	riparian-Pipo/Quma
Pseudanostirus	triundulatus	(Bland)	SD	Custer	434113N1033224W, 5560 ft., Black Hills	Potr/Coco
Pseudanostirus	triundulatus	(Bland)	SD	Pennington	Sherwood-Kinney Divide, 435418N1040124W, 6220 ft.	Pipo/Syal
Pseudanostirus	triundulatus	(Bland)	SD	Custer	434232N1033425W, 5600 ft., Black Hills	Potr/Coco
Pseudanostirus	triundulatus	(Bland)	SD	Custer	434212N1040330W, 5390 ft., Elk Mts	Pipo/Juco
Pseudanostirus	triundulatus	(Bland)	WY	Crook	Bear Lodge Mtns., 443010N1042525W, 5740 ft.	Potr/Coco-Pipo/Juco
Pseudanostirus	triundulatus	(Bland)	WY	Crook	Warren Peak, 442850N1042711W, 6280 ft.	Pipo/Juco
Pseudanostirus	triundulatus	(Bland)	WY	Crook	Cement Ridge, 442029N1040401W, 6470 ft.	Pipo/Juco
Pseudanostirus	triundulatus	(Bland)	SD	Custer	Pilger Mtn., 432855N1035352W, 4823 ft.	Pipo/Cahe
Pseudanostirus	triundulatus	(Bland)	WY	Weston	434134N1040356W, 5230 ft., Elk Mts	Pipo/Juco
Pseudanostirus	triundulatus	(Bland)	WY	Weston	434212N1040330W, 5390 ft., Elk Mts	Pipo/Juco
Pseudanostirus	triundulatus	(Bland)	SD	Custer	434324N1040313W, 5610 ft., Elk Mts	Pipo/Juco
Pseudanostirus	triundulatus	(Bland)	WY	Weston	Elk Mtn, 43101N1040336W, 4900 ft.	Pipo/Syal
Pseudanostirus	triundulatus	(Bland)	SD	Fall River	432830N1035130W, Elk Mts	Pipo/Cahe
Pseudanostirus	triundulatus	(Bland)	SD	Pennington	near Castle Creek Camp, T2N R3E sec. 33 NESE	Pipo/Juco
Pseudanostirus	triundulatus	(Bland)	SD	Custer	432749N1035251W, 4679 ft., Black Hills	Pipo/Cahe
Pseudanostirus	triundulatus	(Bland)	MT	Carter	Long Pine Hills, Plum Creek road, T2S R61E sec. 36 SESESE	Pipo/Quma
Pseudanostirus	triundulatus	(Bland)	SD	Custer	433614N1034039W, 4940 ft., Black Hills	Pipo/Cahe
Pseudanostirus	triundulatus	(Bland)	SD	Custer	434050N1033227W, 5400 ft., Black Hills	Potr/Coco
Pseudanostirus	triundulatus	(Bland)	SD	Custer	434313N1040249W, 5662 ft., Elk Mts	Pipo/Juco
Pseudanostirus	triundulatus	(Bland)	SD	Custer	434050N1033227W, 5400 ft., Black Hills	Pipo/Aruv
Pseudanostirus	triundulatus	(Bland)	WY	Crook	Cement Ridge, 442029N1040401W, 6470 ft.	Pipo/Juco
Pseudanostirus	triundulatus	(Bland)	SD	Lawrence	442540N1035505W, 5100 ft., Black Hills	Potr/Coco-Pipo/Quma
Pseudanostirus	triundulatus	(Bland)	WY	Crook	Cement Ridge, 441929N1040349W, 6250 ft.	Pipo/Aruv
Pseudanostirus	triundulatus	(Bland)	WY	Weston	434121N1040349W, 5100 ft., Elk Mts	Pipo/Juco
Pseudanostirus	triundulatus	(Bland)	SD	Custer	434304N1033243W, 5240 ft., Black Hills	Potr/Coco
Pseudanostirus	triundulatus	(Bland)	SD	Custer	434219N1033445W, 5560 ft., Black Hills	Pipo/Aruv
Pseudanostirus	triundulatus	(Bland)	SD	Custer	434304N1033243W, 5240 ft., Black Hills	Pipo/Aruv
Pseudanostirus	triundulatus	(Bland)	SD	Lawrence	442540N1035505W, 5100 ft., Black Hills	Pipo/Quma
Pseudanostirus	triundulatus	(Bland)	WY	Crook	Cement Ridge, 441929N1040449W, 6230 ft.	Potr/Coco
Pseudanostirus	triundulatus	(Bland)	MT	Carter	Long Pine Hills, 453901N1041214W, 3890 ft.	Pipo/Syal
Pseudanostirus	triundulatus	(Bland)	SD	Harding	E. Short Pine Hills, 452155N103430W, 3900 ft.	Pipo/Syal
Pseudanostirus	triundulatus	(Bland)	WY	Crook	Bear Lodge Mtns., 443507N1042324W, 5160 ft.	Pipo/Quma
Pseudanostirus	triundulatus	(Bland)	SD	Harding	E. Short Pine Hills, 452238N1034301W, 4050 ft.	Pipo/Syal
Pseudanostirus	triundulatus	(Bland)	MT	Carter	Long Pine Hills, 454053N1041242W, 3910 ft.	Pipo/Syal
Pseudanostirus	triundulatus	(Bland)	SD	Custer	432749N1035251W, 4679 ft., Black Hills	Pipo/Cahe
Selatosomus	aeripennis	(Kirby)	SD	Pennington	upper Castle Creek, T2N R1E sec. 35 NESE	meadow
Selatosomus	aeripennis	(Kirby)	WY	Crook	Warren Peak, 6656 ft., Bear Lodge Mtns	meadow
Selatosomus	aeripennis	(Kirby)	SD	Pennington	upper Castle Creek, T2N R1E sec. 35 NESE	meadow
Selatosomus	cruciatus	(Linnaeus)	WY	Crook	Bear Lodge Mtns., 443507N1042324W, 5160 ft.	Pipo/Quma

Genus	Species	Author	State	County	Location	Forest Community
Selatosomus	cruciatus	(Linnaeus)	WY	Crook	Bear Lodge Mtns., 443251N4143502W, 5020 ft.	Potr/Coco
Selatosomus	cruciatus	(Linnaeus)	SD	Custer	434113N1033224W, 5560 ft., Black Hills	Potr/Coco
Selatosomus	cruciatus	(Linnaeus)	WY	Crook	Sand Creek, 442529N1040950W, 4380 ft.	Pipo/Quma
Selatosomus	cruciatus	(Linnaeus)	WY	Crook	Spring Creek, 442603N1040920W, 4250 ft.	Quma/Syoc
Selatosomus	cruciatus	(Linnaeus)	WY	Crook	Warren Peak, 442850N1042711W, 6280 ft.	Pipo/Juco
Selatosomus	cruciatus	(Linnaeus)	WY	Crook	Bear Lodge Mtns., 443647N1042128W, 4950 ft.	Potr/Coco-Pipo/Quma
Selatosomus	cruciatus	(Linnaeus)	WY	Crook	Bear Lodge Mtns., 443010N1042525W, 5740 ft	Potr/Coco-Pipo/Juco
Selatosomus	cruciatus	(Linnaeus)	WY	Crook	Cement Ridge, 442029N1040401W, 6470 ft.	Pipo/Juco
Selatosomus	cruciatus	(Linnaeus)	SD	Lawrence	442540N1035505W, 5100 ft., Black Hills	Pipo/Quma
Selatosomus	cruciatus	(Linnaeus)	SD	Pennington	McIntosh Fen, 440157N1035158W, 6030 ft.	Potr/Coco
Selatosomus	cruciatus	(Linnaeus)	WY	Crook	Cement Ridge, 442029N1040401W, 6470 ft.	Pipo/Juco
Selatosomus	cruciatus	(Linnaeus)	SD	Lawrence	442540N1035505W, 5100 ft., Black Hills	Potr/Coco-Pipo/Quma
Selatosomus	destructor	(Brown)	SD	Harding	E. Short Pine Hills, 452155N103430W, 3900 ft.	Pipo/Jusc

Forest Community	Genus	Species	# Specimens	Location
meadow	Limonius	nr ursinus	02	upper Castle Creek, T2N R1E sec. 35 NESE
meadow	Selatosomus	aeripennis	25	upper Castle Creek, T2N R1E sec. 35 NESE
meadow	Selatosomus	aeripennis	01	Warren Peak, 6656 ft., Bear Lodge Mtns
meadow	Selatosomus	aeripennis	04	upper Castle Creek, T2N R1E sec. 35 NESE
Pigl/Vasc	Ampedus	apicatus	01	S. Fork Spearfish Creek, T4N R1E sec. 9 NENW
Pipo/Aruv	Actenicerom orphus	stricklandi	02	Cement Ridge, 441929N1040349W, 6250 ft.
Pipo/Aruv	Agriotes	limosus	02	Cement Ridge, 441929N1040349W, 6250 ft.
Pipo/Aruv	Agriotes	limosus	15	434304N1033243W, 5240 ft., Black Hills
Pipo/Aruv	Agriotes	limosus	01	434153N1033153W, 5540 ft., Black Hills
Pipo/Aruv	Agriotes	stabilis	01	434153N1033153W, 5540 ft., Black Hills
Pipo/Aruv	Agriotes	stabilis	01	434050N1033227W, 5400 ft., Black Hills
Pipo/Aruv	Alaus	melanops	06	434304N1033243W, 5240 ft., Black Hills
Pipo/Aruv	Ampedus	apicatus	02	434304N1033243W, 5240 ft., Black Hills
Pipo/Aruv	Ampedus	luctuosus	01	Cement Ridge, 441929N1040349W, 6250 ft.
Pipo/Aruv	Ampedus	luctuosus	01	Cook Lake, Bear Lodge Mtns, T53N R63W sec. 10 SWSE
Pipo/Aruv	Ampedus	luctuosus	01	434304N1033243W, 5240 ft., Black Hills
Pipo/Aruv	Ampedus	melsheimeri	06	434304N1033243W, 5240 ft., Black Hills
Pipo/Aruv	Ampedus	melsheimeri	01	434050N1033227W, 5400 ft., Black Hills
Pipo/Aruv	Ampedus	nigricans	02	Cement Ridge, 441929N1040349W, 6250 ft.
Pipo/Aruv	Ampedus	nigricans	01	Cement Ridge, 441929N1040349W, 6250 ft.
Pipo/Aruv	Ampedus	pullus	04	434304N1033243W, 5240 ft., Black Hills
Pipo/Aruv	Ampedus	pullus	01	Cement Ridge, 441929N1040349W, 6250 ft.
Pipo/Aruv	Danosoma	obtecta	01	Cement Ridge, 441929N1040349W, 6250 ft.
Pipo/Aruv	Hypnoidus	bicolor	01	441842N1040039W, 6132 ft, Black Hills
Pipo/Aruv	Hypnoidus	bicolor	05	441842N1040039W, 6132 ft, Black Hills
Pipo/Aruv	Limonius	aeger	03	Cement Ridge, 441929N1040349W, 6250 ft.
Pipo/Aruv	Limonius	nr ursinus	01	Ekalaka Park, T1N, R58E sec. 33 NENE
Pipo/Aruv	Melanotus	castanipes	01	3.5 mi. N. of Cook Lake, T53N R63W sec. 12 SENW
Pipo/Aruv	Melanotus	castanipes	02	Cement Ridge, 441929N1040349W, 6250 ft.
Pipo/Aruv	Melanotus	similis	01	434050N1033227W, 5400 ft., Black Hills
Pipo/Aruv	Melanotus	similis	02	434304N1033243W, 5240 ft., Black Hills
Pipo/Aruv	Melanotus	similis	01	434153N1033153W, 5540 ft., Black Hills
Pipo/Aruv	Prosternon	mediana	01	434304N1033243W, 5240 ft., Black Hills
Pipo/Aruv	Pseudanostirus	propolus	01	434219N1033445W, 5560 ft., Black Hills
Pipo/Aruv	Pseudanostirus	propolus	01	434304N1033243W, 5240 ft., Black Hills
Pipo/Aruv	Pseudanostirus	triundulatus	04	434219N1033445W, 5560 ft., Black Hills
Pipo/Aruv	Pseudanostirus	triundulatus	11	434304N1033243W, 5240 ft., Black Hills
Pipo/Aruv	Pseudanostirus	triundulatus	21	Cement Ridge, 441929N1040349W, 6250 ft.
Pipo/Aruv	Pseudanostirus	triundulatus	02	434050N1033227W, 5400 ft., Black Hills
Pipo/Cahe	Alaus	melanops	01	432749N1035251W, 4679 ft., Black Hills
Pipo/Cahe	Ampedus	atripennis	01	Robinson Flats, T7S R2E sec. 10 SESESE, Elk Mts
Pipo/Cahe	Ampedus	occidentalis	04	434121N1040349W, 5100 ft., Elk Mts
Pipo/Cahe	Ampedus	pullus	02	432749N1035251W, 4679 ft., Black Hills

Forest Community	Genus	Species	# Specimens	Location
Pipo/Cahe	Hadromorphus	nr. glaucus	01	432830N1035130W, Elk Mts
Pipo/Cahe	Limonius	nr ursinus	01	432749N1035251W, 4679 ft., Black Hills
Pipo/Cahe	Limonius	nr ursinus	01	Black Hills, 433614N1044030W, 4940 ft.
Pipo/Cahe	Melanotus	castanipes	02	432749N1035251W, 4679 ft., Black Hills
Pipo/Cahe	Melanotus	similis	02	432749N1035251W, 4679 ft., Black Hills
Pipo/Cahe	Prosternon	mediana	01	Pilger Mtn., 432855N1035352W, 4823 ft.
Pipo/Cahe	Pseudanostirus	propolus	01	432749N1035251W, 4679 ft., Black Hills
Pipo/Cahe	Pseudanostirus	propolus	01	432749N1035251W, 4679 ft., Black Hills
Pipo/Cahe	Pseudanostirus	triundulatus	04	432749N1035251W, 4679 ft., Black Hills
Pipo/Cahe	Pseudanostirus	triundulatus	05	433614N1034039W, 4940 ft., Black Hills
Pipo/Cahe	Pseudanostirus	triundulatus	01	432830N1035130W, Elk Mts
Pipo/Cahe	Pseudanostirus	triundulatus	08	432749N1035251W, 4679 ft., Black Hills
Pipo/Cahe	Pseudanostirus	triundulatus	01	Pilger Mtn., 432855N1035352W, 4823 ft.
Pipo/Juco	Actenicerомorphus	stricklandi	01	Cement Ridge, 442029N1040401W, 6470 ft.
Pipo/Juco	Agriotes	limosus	03	Warren Peak, 442850N1042711W, 6280 ft.
Pipo/Juco	Agriotes	limosus	01	near Castle Creek Camp, T2N R3E sec. 33 NESE
Pipo/Juco	Alaus	melanops	02	434121N1040349W, 5100 ft., Elk Mts
Pipo/Juco	Alaus	melanops	01	434121N1040349W, 5100 ft., Elk Mts
Pipo/Juco	Alaus	melanops	03	434134N1040356W, 5230 ft., Elk Mts
Pipo/Juco	Alaus	melanops	01	434212N1040330W, 5390 ft., Elk Mts
Pipo/Juco	Ampedus	apicatus	01	434212N1040330W, 5390 ft., Elk Mts
Pipo/Juco	Ampedus	apicatus	01	434313N1040249W, 5662 ft., Elk Mts
Pipo/Juco	Ampedus	apicatus	01	434121N1040349W, 5100 ft., Elk Mts.
Pipo/Juco	Ampedus	apicatus	01	434134N1040356W, 5230 ft., Elk Mts
Pipo/Juco	Ampedus	apicatus	01	434212N1040330W, 5390 ft., Elk Mts
Pipo/Juco	Ampedus	apicatus	05	Warren Peak, 442850N1042711W, 6280 ft.
Pipo/Juco	Ampedus	apicatus	03	434134N1040356W, 5230 ft., Elk Mts
Pipo/Juco	Ampedus	apicatus	02	434121N1040349W, 5100 ft., Elk Mts
Pipo/Juco	Ampedus	apicatus	01	434232N1033425W, 5600 ft., Black Hills
Pipo/Juco	Ampedus	apicatus	03	Pilger Mtn, T6S R1E sec 29 NWSE
Pipo/Juco	Ampedus	atripennis	01	434121N1040349W, 5100 ft., Elk Mts
Pipo/Juco	Ampedus	luctuosus	01	Warren Peak, 442850N1042711W, 6280 ft.
Pipo/Juco	Ampedus	luctuosus	01	Pilger Mtn, T6S R1E sec 29 NWSE
Pipo/Juco	Ampedus	molestus	02	434121N1040349W, 5100 ft., Elk Mts
Pipo/Juco	Ampedus	molestus	02	434121N1040349W, 5100 ft., Elk Mts
Pipo/Juco	Ampedus	nigricans	01	Cement Ridge, 442029N1040401W, 6470 ft.
Pipo/Juco	Ampedus	nigricans	01	Cement Ridge, 442029N1040401W, 6470 ft.
Pipo/Juco	Ampedus	occidentalis	04	Warren Peak, 442850N1042711W, 6280 ft.
Pipo/Juco	Ampedus	pullus	01	Warren Peak, 442850N1042711W, 6280 ft.
Pipo/Juco	Ampedus	pullus	01	434212N1040330W, 5390 ft., Elk Mts
Pipo/Juco	Ampedus	pullus	01	434212N1040330W, 5390 ft., Elk Mts
Pipo/Juco	Ampedus	pullus	01	434121N1040349W, 5100 ft., Elk Mts
Pipo/Juco	Cardiophorus	convexus	01	434121N1040349W, 5100 ft., Elk Mts.

Forest Community	Genus	Species	# Specimens	Location
Pipo/Juco	Cardiophorus	tenebrosus	01	432749N1035251W, 4679 ft., Elk Mts
Pipo/Juco	Danosoma	brevicornis	01	434212N1040330W, 5390 ft., Elk Mts
Pipo/Juco	Danosoma	brevicornis	01	434324N1040313W, 5610 ft., Elk Mts
Pipo/Juco	Danosoma	brevicornis	01	434313N1040249W, 5662 ft., Elk Mts
Pipo/Juco	Hadromorphus	nr. glaucus	01	434212N1040330W, 5390 ft., Elk Mts
Pipo/Juco	Hadromorphus	nr. glaucus	02	434313N1040249W, 5662 ft., Elk Mts
Pipo/Juco	Limonius	aeger	01	near Castle Creek Camp, T2N R3E sec. 33 NESE
Pipo/Juco	Melanotus	castanipes	01	434212N1040330W, 5390 ft., Elk Mts
Pipo/Juco	Melanotus	castanipes	10	434121N1040349W, 5100 ft., Elk Mts
Pipo/Juco	Melanotus	castanipes	01	Warren Peak, 442850N1042711W, 6280 ft.
Pipo/Juco	Melanotus	similis	08	434212N1040330W, 5390 ft., Elk Mts
Pipo/Juco	Melanotus	similis	03	434121N1040349W, 5100 ft., Elk Mts
Pipo/Juco	Melanotus	similis	01	434324N1040313W, 5610 ft., Elk Mts
Pipo/Juco	Melanotus	similis	01	434121N1040349W, 5100 ft., Elk Mts
Pipo/Juco	Melanotus	similis	10	Warren Peak, 442850N1042711W, 6280 ft.
Pipo/Juco	Melanotus	similis	01	434313N1040249W, 5662 ft., Elk Mts
Pipo/Juco	Melanotus	similis	01	434212N1040330W, 5390 ft., Elk Mts
Pipo/Juco	Prosternon	mediana	03	434313N1040249W, 5662 ft., Elk Mts
Pipo/Juco	Pseudanostirus	propolus	01	434134N1040356W, 5230 ft., Elk Mts
Pipo/Juco	Pseudanostirus	propolus	02	434212N1040330W, 5390 ft., Elk Mts
Pipo/Juco	Pseudanostirus	propolus	01	Warren Peak, 442850N1042711W, 6280 ft.
Pipo/Juco	Pseudanostirus	propolus	01	Cement Ridge, 442029N1040401W, 6470 ft.
Pipo/Juco	Pseudanostirus	propolus	02	near Castle Creek Camp, T2N R3E sec. 33 NESE
Pipo/Juco	Pseudanostirus	propolus	01	434324N1040313W, 5610 ft., Elk Mts
Pipo/Juco	Pseudanostirus	propolus	03	434212N1040330W, 5390 ft., Elk Mts
Pipo/Juco	Pseudanostirus	propolus	01	432749N1035251W, 4679 ft., Elk Mts
Pipo/Juco	Pseudanostirus	triundulatus	01	434324N1040313W, 5610 ft., Elk Mts
Pipo/Juco	Pseudanostirus	triundulatus	20	434313N1040249W, 5662 ft., Elk Mts
Pipo/Juco	Pseudanostirus	triundulatus	05	Cement Ridge, 442029N1040401W, 6470 ft.
Pipo/Juco	Pseudanostirus	triundulatus	46	Cement Ridge, 442029N1040401W, 6470 ft.
Pipo/Juco	Pseudanostirus	triundulatus	16	Warren Peak, 442850N1042711W, 6280 ft.
Pipo/Juco	Pseudanostirus	triundulatus	01	near Castle Creek Camp, T2N R3E sec. 33 NESE
Pipo/Juco	Pseudanostirus	triundulatus	03	434134N1040356W, 5230 ft., Elk Mts
Pipo/Juco	Pseudanostirus	triundulatus	20	434212N1040330W, 5390 ft., Elk Mts
Pipo/Juco	Pseudanostirus	triundulatus	01	434121N1040349W, 5100 ft., Elk Mts
Pipo/Juco	Pseudanostirus	triundulatus	12	434212N1040330W, 5390 ft., Elk Mts
Pipo/Juco	Selatosomus	cruciatus	04	Cement Ridge, 442029N1040401W, 6470 ft.
Pipo/Juco	Selatosomus	cruciatus	12	Warren Peak, 442850N1042711W, 6280 ft.
Pipo/Juco	Selatosomus	cruciatus	01	Cement Ridge, 442029N1040401W, 6470 ft.
Pipo/Jusc	Ampedus	apicatus	02	Pilger Mtn, T6S R1E sec 29 NWSE
Pipo/Jusc	Ampedus	molestus	01	E. Short Pine Hills, 452155N103430W, 3900 ft.
Pipo/Jusc	Danosoma	obtecta	02	E. Short Pine Hills, 452155N103430W, 3900 ft.
Pipo/Jusc	Selatosomus	destructor	01	E. Short Pine Hills, 452155N103430W, 3900 ft.

Forest Community	Genus	Species	# Specimens	Location
Pipo/Quma	Aeolus	mellillus	01	442540N1035505W, 5100 ft., Black Hills
Pipo/Quma	Agriotes	limosus	04	Bear Lodge Mtns., 443507N1042324W, 5160 ft.
Pipo/Quma	Agriotes	limosus	01	Sand Creek, 442529N1040950W, 4380 ft.
Pipo/Quma	Agriotes	limosus	01	442540N1035505W, 5100 ft., Black Hills
Pipo/Quma	Agriotes	limosus	01	Bear Lodge Mtns., 443507N1042324W, 5160 ft.
Pipo/Quma	Agriotes	stabilis	03	Sand Creek, 442529N1040950W, 4380 ft.
Pipo/Quma	Agriotes	stabilis	02	Long Pine Hills, Plum Creek road, T2S R61E sec. 36 SESESE
Pipo/Quma	Agriotes	stabilis	01	442540N1035505W, 5100 ft., Black Hills
Pipo/Quma	Ampedus	apicatus	05	Sand Creek, 442529N1040950W, 4380 ft.
Pipo/Quma	Ampedus	apicatus	01	442540N1035505W, 5100 ft., Black Hills
Pipo/Quma	Ampedus	molestus	01	Sand Creek, 442529N1040950W, 4380 ft.
Pipo/Quma	Ampedus	molestus	02	442540N1035505W, 5100 ft., Black Hills
Pipo/Quma	Ampedus	pullus	07	442540N1035505W, 5100 ft., Black Hills
Pipo/Quma	Ampedus	pullus	02	Sand Creek, 442529N1040950W, 4380 ft.
Pipo/Quma	Ampedus	pullus	03	Bear Lodge Mtns., 443507N1042324W, 5160 ft.
Pipo/Quma	Ampedus	pullus	02	Bear Lodge Mtns., 443507N1042324W, 5160 ft.
Pipo/Quma	Ctenicera	resplendens	01	Sand Creek, 442529N1040950W, 4380 ft.
Pipo/Quma	Danosoma	obtecta	02	Sand Creek, 442529N1040950W, 4380 ft.
Pipo/Quma	Limonius	aeger	02	442540N1035505W, 5100 ft., Black Hills
Pipo/Quma	Limonius	aeger	03	Long Pine Hills, Plum Creek road, T2S R61E sec. 36 SESESE
Pipo/Quma	Melanotus	castanipes	05	442540N1035505W, 5100 ft., Black Hills
Pipo/Quma	Melanotus	castanipes	01	Bear Lodge Mtns., 443507N1042324W, 5160 ft.
Pipo/Quma	Prosternon	mediana	02	Bear Lodge Mtns., 443507N1042324W, 5160 ft.
Pipo/Quma	Pseudanostirus	nigricollis	01	Bear Lodge Mtns., 443507N1042324W, 5160 ft.
Pipo/Quma	Pseudanostirus	propolus	01	Sand Creek, 442529N1040950W, 4380 ft.
Pipo/Quma	Pseudanostirus	propolus	01	442540N1035505W, 5100 ft., Black Hills
Pipo/Quma	Pseudanostirus	triundulatus	05	Bear Lodge Mtns., 443507N1042324W, 5160 ft.
Pipo/Quma	Pseudanostirus	triundulatus	07	442540N1035505W, 5100 ft., Black Hills
Pipo/Quma	Pseudanostirus	triundulatus	01	Long Pine Hills, Plum Creek road, T2S R61E sec. 36 SESESE
Pipo/Quma	Pseudanostirus	triundulatus	01	Sand Creek, 442529N1040950W, 4380 ft.
Pipo/Quma	Selatosomus	cruciatus	03	Bear Lodge Mtns., 443507N1042324W, 5160 ft.
Pipo/Quma	Selatosomus	cruciatus	02	442540N1035505W, 5100 ft., Black Hills
Pipo/Quma	Selatosomus	cruciatus	07	Sand Creek, 442529N1040950W, 4380 ft.
Pipo/Syal	Agriotes	limosus	01	Long Pine Hills, 453751N1041047W, 4050 ft.
Pipo/Syal	Ampedus	luctuosus	01	Long Pine Hills, 454053N1041242W, 3910 ft.
Pipo/Syal	Ampedus	molestus	02	E. Short Pine Hills, 452155N103430W, 3900 ft.
Pipo/Syal	Ampedus	molestus	01	Long Pine Hills, 453751N1041047W, 4050 ft.
Pipo/Syal	Ampedus	molestus	01	Long Pine Hills, 454053N1041242W, 3910 ft.
Pipo/Syal	Ampedus	nigricans	01	Long Pine Hills, 454053N1041242W, 3910 ft.
Pipo/Syal	Ampedus	occidentalis	04	Long Pine Hills, 453751N1041047W, 4050 ft.
Pipo/Syal	Ampedus	occidentalis	02	E. Short Pine Hills, 452155N103430W, 3900 ft.
Pipo/Syal	Ampedus	occidentalis	01	Long Pine Hills, 454053N1041242W, 3910 ft.
Pipo/Syal	Ampedus	occidentalis	02	E. Short Pine Hills, 452238N1034301W, 4050 ft.

Forest Community	Genus	Species	# Specimens	Location
Pipo/Syal	Ampedus	pullus	02	Sherwood-Kinney Divide, 435418N1040124W, 6220 ft.
Pipo/Syal	Danosoma	brevicornis	02	E. Short Pine Hills, 452238N1034301W, 4050 ft.
Pipo/Syal	Hadromorphus	nr. glaucus	01	Elk Mtn, 43101N1040336W, 4900 ft.
Pipo/Syal	Hadromorphus	nr. glaucus	01	Long Pine Hills, 454053N1041242W, 3910 ft.
Pipo/Syal	Hadromorphus	nr. glaucus	02	E. Short Pine Hills, 452155N103430W, 3900 ft.
Pipo/Syal	Hadromorphus	nr. glaucus	01	E. Short Pine Hills, 452238N1034301W, 4050 ft.
Pipo/Syal	Limonius	aeger	01	E. Short Pine Hills, 452238N1034301W, 3900 ft.
Pipo/Syal	Melanotus	similis	01	Elk Mtn, 43101N1040336W, 4900 ft.
Pipo/Syal	Pseudanostirus	propolus	01	E. Short Pine Hills, 452238N1034301W, 4050 ft.
Pipo/Syal	Pseudanostirus	propolus	02	Long Pine Hills, 454053N1041242W, 3910 ft.
Pipo/Syal	Pseudanostirus	propolus	01	Elk Mtn, 43101N1040336W, 4900 ft.
Pipo/Syal	Pseudanostirus	triundulatus	23	Long Pine Hills, 454053N1041242W, 3910 ft.
Pipo/Syal	Pseudanostirus	triundulatus	28	Sherwood-Kinney Divide, 435418N1040124W, 6220 ft.
Pipo/Syal	Pseudanostirus	triundulatus	01	Long Pine Hills, 453901N1041214W, 3890 ft.
Pipo/Syal	Pseudanostirus	triundulatus	02	E. Short Pine Hills, 452155N103430W, 3900 ft.
Pipo/Syal	Pseudanostirus	triundulatus	08	E. Short Pine Hills, 452238N1034301W, 4050 ft.
Pipo/Syal	Pseudanostirus	triundulatus	03	Elk Mtn, 43101N1040336W, 4900 ft.
Potr/Aruv	Ctenicera	monticola	01	Cement Ridge, 441929N1040349W, 6250 ft.
Potr/Coco	Actenicerom orphus	stricklandi	01	Cement Ridge, 441929N1040449W, 6230 ft.
Potr/Coco	Agriotes	fucosus	03	434304N1033243W, 5240 ft., Black Hills
Potr/Coco	Agriotes	fucosus	01	434232N1033425W, 5600 ft., Black Hills
Potr/Coco	Agriotes	fucosus	01	Bear Lodge Mtns., 442701N1040831W, 3960 ft.
Potr/Coco	Agriotes	limosus	11	434304N1033243W, 5240 ft., Black Hills
Potr/Coco	Agriotes	limosus	06	434050N1033227W, 5400 ft., Black Hills
Potr/Coco	Agriotes	limosus	04	Bear Lodge Mtns., 442701N1040831W, 3960 ft.
Potr/Coco	Agriotes	limosus	01	Glen Erin road, Black Hills, 434304N1033243W, 5240 ft.
Potr/Coco	Agriotes	stabilis	02	434304N1033243W, 5240 ft., Black Hills
Potr/Coco	Agriotes	stabilis	01	Bear Lodge Mtns., 442701N1040831W, 3960 ft.
Potr/Coco	Ampedus	apicatus	05	434050N1033227W, 5400 ft., Black Hills
Potr/Coco	Ampedus	apicatus	12	Bear Lodge Mtns., 442701N1040831W, 3960 ft.
Potr/Coco	Ampedus	apicatus	07	434304N1033243W, 5240 ft., Black Hills
Potr/Coco	Ampedus	luctuosus	01	434304N1033243W, 5240 ft., Black Hills
Potr/Coco	Ampedus	luctuosus	01	Bear Lodge Mtns., 442701N1040831W, 3960 ft.
Potr/Coco	Ampedus	melsheimeri	01	434113N1033224W, 5560 ft., Black Hills
Potr/Coco	Ampedus	melsheimeri	02	434050N1033227W, 5400 ft., Black Hills
Potr/Coco	Ampedus	molestus	03	434304N1033243W, 5240 ft., Black Hills
Potr/Coco	Ampedus	nigricans	04	Bear Lodge Mtns., 442701N1040831W, 3960 ft.
Potr/Coco	Ampedus	nigricans	01	434050N1033227W, 5400 ft., Black Hills
Potr/Coco	Ampedus	nigricans	01	434304N1033243W, 5240 ft., Black Hills
Potr/Coco	Ampedus	nigricans	04	Cement Ridge, 441929N1040449W, 6230 ft.
Potr/Coco	Ampedus	nigricans	01	434232N1033425W, 5600 ft., Black Hills
Potr/Coco	Ampedus	pullus	19	434050N1033227W, 5400 ft., Black Hills
Potr/Coco	Ampedus	pullus	08	434232N1033425W, 5600 ft., Black Hills

Forest Community	Genus	Species	# Specimens	Location
Potr/Coco	Ampedus	pullus	01	Cement Ridge, 441929N1040449W, 6230 ft.
Potr/Coco	Ampedus	pullus	01	Bear Lodge Mtns., 442701N1040831W, 3960 ft.
Potr/Coco	Ampedus	pullus	01	434113N1033224W, 5560 ft., Black Hills
Potr/Coco	Ampedus	pullus	14	434304N1033243W, 5240 ft., Black Hills
Potr/Coco	Ctenicera	monticola	01	Black Hills, 434304N1033243W, 5240 ft.
Potr/Coco	Ctenicera	monticola	02	E. Short Pine Hills, 452238N1034301W, 3900 ft.
Potr/Coco	Dalopius	mirabilis	01	Bear Lodge Mtns., 442701N1040831W, 3960 ft.
Potr/Coco	Dalopius	mirabilis	01	434232N1033425W, 5600 ft., Black Hills
Potr/Coco	Danosoma	obtecta	02	434304N1033243W, 5240 ft., Black Hills
Potr/Coco	Drasterius	debilis	01	Cement Ridge, 441929N1040449W, 6230 ft.
Potr/Coco	Limonius	aeger	01	McIntosh Fen, 440157N1035158W, 6030 ft.
Potr/Coco	Limonius	aeger	03	434050N1033227W, 5400 ft., Black Hills
Potr/Coco	Limonius	aeger	01	Bear Lodge Mtns., 443251N4143502W, 5020 ft.
Potr/Coco	Limonius	aeger	01	434304N1033243W, 5240 ft., Black Hills
Potr/Coco	Limonius	aeger	86	McIntosh Fen, 440157N1035158W, 6030 ft.
Potr/Coco	Limonius	pectoralis	01	Black Hills, 434304N1033243W, 5240 ft.
Potr/Coco	Megapenthes	stigmosus	02	McIntosh Fen, 440157N1035158W, 6030 ft.
Potr/Coco	Melanotus	castanipes	01	434232N1033425W, 5600 ft., Black Hills
Potr/Coco	Melanotus	castanipes	02	434050N1033227W, 5400 ft., Black Hills
Potr/Coco	Melanotus	castanipes	01	434232N1033425W, 5600 ft., Black Hills
Potr/Coco	Melanotus	similis	02	434113N1033224W, 5560 ft., Black Hills
Potr/Coco	Melanotus	similis	05	Bear Lodge Mtns., 442701N1040831W, 3960 ft.
Potr/Coco	Neohypdonus	tumescens	01	McIntosh Fen, 440157N1035158W, 6030 ft.
Potr/Coco	Pactopus	horni	01	McIntosh Fen, 440157N1035158W, 6030 ft.
Potr/Coco	Prosternon	mediana	01	434304N1033243W, 5240 ft., Black Hills
Potr/Coco	Pseudanostirus	nigricollis	01	McIntosh Fen, 440157N1035158W, 6030 ft.
Potr/Coco	Pseudanostirus	propolus	01	434113N1033224W, 5560 ft., Black Hills
Potr/Coco	Pseudanostirus	propolus	02	434050N1033227W, 5400 ft., Black Hills
Potr/Coco	Pseudanostirus	propolus	01	Bear Lodge Mtns., 442701N1040831W, 3960 ft.
Potr/Coco	Pseudanostirus	propolus	06	McIntosh Fen, 440157N1035158W, 6030 ft.
Potr/Coco	Pseudanostirus	propolus	07	McIntosh Fen, 440157N1035158W, 6030 ft.
Potr/Coco	Pseudanostirus	triundulatus	01	434232N1033425W, 5600 ft., Black Hills
Potr/Coco	Pseudanostirus	triundulatus	25	Cement Ridge, 441929N1040449W, 6230 ft.
Potr/Coco	Pseudanostirus	triundulatus	06	434113N1033224W, 5560 ft., Black Hills
Potr/Coco	Pseudanostirus	triundulatus	02	Bear Lodge Mtns., 442701N1040831W, 3960 ft.
Potr/Coco	Pseudanostirus	triundulatus	03	434050N1033227W, 5400 ft., Black Hills
Potr/Coco	Pseudanostirus	triundulatus	06	434304N1033243W, 5240 ft., Black Hills
Potr/Coco	Selatosomus	cruciatus	02	434113N1033224W, 5560 ft., Black Hills
Potr/Coco	Selatosomus	cruciatus	14	Bear Lodge Mtns., 443251N4143502W, 5020 ft.
Potr/Coco	Selatosomus	cruciatus	01	McIntosh Fen, 440157N1035158W, 6030 ft.
Potr/Coco-Pipo/Juco	Acteniceromorphus	stricklandi	01	Bear Lodge Mtns., 443010N1042525W, 5740 ft.
Potr/Coco-Pipo/Juco	Agriotes	limosus	15	Bear Lodge Mtns., 443010N1042525W, 5740 ft.
Potr/Coco-Pipo/Juco	Ampedus	apicatus	01	Bear Lodge Mtns., 443010N1042525W, 5740 ft.

Forest Community	Genus	Species	# Specimens	Location
Potr/Coco-Pipo/Juco	Ampedus	apicatus	01	Ekalaka Park, T1N, R58E sec. 33 NENE
Potr/Coco-Pipo/Juco	Ampedus	luctuosus	03	Bear Lodge Mtns., 443010N1042525W, 5740 ft.
Potr/Coco-Pipo/Juco	Ampedus	molestus	02	Bear Lodge Mtns., 443010N1042525W, 5740 ft.
Potr/Coco-Pipo/Juco	Ampedus	nigricans	01	Bear Lodge Mtns., 443010N1042525W, 5740 ft.
Potr/Coco-Pipo/Juco	Ampedus	occidentalis	04	Bear Lodge Mtns., 443010N1042525W, 5740 ft.
Potr/Coco-Pipo/Juco	Ampedus	pullus	21	Bear Lodge Mtns., 443010N1042525W, 5740 ft.
Potr/Coco-Pipo/Juco	Danosoma	obtecta	02	Bear Lodge Mtns., 443010N1042525W, 5740 ft.
Potr/Coco-Pipo/Juco	Drasterius	debilis	01	Bear Lodge Mtns., 443010N1042525W, 5740 ft
Potr/Coco-Pipo/Juco	Melanotus	castanipes	02	Bear Lodge Mtns., 443010N1042525W, 5740 ft.
Potr/Coco-Pipo/Juco	Melanotus	similis	01	Bear Lodge Mtns., 443010N1042525W, 5740 ft.
Potr/Coco-Pipo/Juco	Prosternon	mediana	01	Bear Lodge Mtns., 443010N1042525W, 5740 ft.
Potr/Coco-Pipo/Juco	Pseudanostirus	propolus	03	Bear Lodge Mtns., 443010N1042525W, 5740 ft.
Potr/Coco-Pipo/Juco	Pseudanostirus	triundulatus	50	Bear Lodge Mtns., 443010N1042525W, 5740 ft.
Potr/Coco-Pipo/Juco	Selatosomus	cruciatus	63	Bear Lodge Mtns., 443010N1042525W, 5740 ft
Potr/Coco-Pipo/Quma	Agriotes	fucosus	02	442540N1035505W, 5100 ft., Black Hills
Potr/Coco-Pipo/Quma	Agriotes	stabilis	02	442540N1035505W, 5100 ft., Black Hills
Potr/Coco-Pipo/Quma	Ampedus	apicatus	01	442540N1035505W, 5100 ft., Black Hills
Potr/Coco-Pipo/Quma	Ampedus	apicatus	01	Bear Lodge Mtns., 443647N1042128W, 4950 ft.
Potr/Coco-Pipo/Quma	Ampedus	melsheimeri	01	442540N1035505W, 5100 ft., Black Hills
Potr/Coco-Pipo/Quma	Ampedus	molestus	02	442540N1035505W, 5100 ft., Black Hills
Potr/Coco-Pipo/Quma	Ampedus	nigricans	01	Bear Lodge Mtns., 443647N1042128W, 4950 ft.
Potr/Coco-Pipo/Quma	Ampedus	occidentalis	01	Bear Lodge Mtns., 443647N1042128W, 4950 ft.
Potr/Coco-Pipo/Quma	Ampedus	pullus	03	Bear Lodge Mtns., 443647N1042128W, 4950 ft.
Potr/Coco-Pipo/Quma	Ampedus	pullus	04	442540N1035505W, 5100 ft., Black Hills
Potr/Coco-Pipo/Quma	Limonius	aeger	03	442540N1035505W, 5100 ft., Black Hills
Potr/Coco-Pipo/Quma	Megapenthes	stigmosus	01	Bear Lodge Mtns., 443647N1042128W, 4950 ft.
Potr/Coco-Pipo/Quma	Melanotus	castanipes	01	442540N1035505W, 5100 ft., Black Hills
Potr/Coco-Pipo/Quma	Melanotus	castanipes	01	Bear Lodge Mtns., 443647N1042128W, 4950 ft.
Potr/Coco-Pipo/Quma	Pseudanostirus	triundulatus	01	Bear Lodge Mtns., 443647N1042128W, 4950 ft.
Potr/Coco-Pipo/Quma	Pseudanostirus	triundulatus	15	442540N1035505W, 5100 ft., Black Hills
Potr/Coco-Pipo/Quma	Selatosomus	cruciatus	05	442540N1035505W, 5100 ft., Black Hills
Potr/Coco-Pipo/Quma	Selatosomus	cruciatus	05	Bear Lodge Mtns., 443647N1042128W, 4950 ft.
Quma/Syoc	Agriotes	fucosus	01	Spring Creek, 442603N1040920W, 4250 ft.
Quma/Syoc	Agriotes	stabilis	04	Spring Creek, 442603N1040920W, 4250 ft.
Quma/Syoc	Ampedus	apicatus	01	Spring Creek, 442603N1040920W, 4250 ft.
Quma/Syoc	Ampedus	molestus	01	Spring Creek, 442603N1040920W, 4250 ft.
Quma/Syoc	Ampedus	pullus	02	Spring Creek, 442603N1040920W, 4250 ft.
Quma/Syoc	Danosoma	brevicornis	01	Spring Creek, 442603N1040920W, 4250 ft.
Quma/Syoc	Danosoma	obtecta	02	Spring Creek, 442603N1040920W, 4250 ft.
Quma/Syoc	Hadromorphus	nr. glaucus	01	Spring Creek, 442603N1040920W, 4250 ft.
Quma/Syoc	Melanotus	similis	02	Spring Creek, 442603N1040920W, 4250 ft.
Quma/Syoc	Oxygonus	obesus	02	Spring Creek, 442603N1040920W, 4250 ft.
Quma/Syoc	Pseudanostirus	triundulatus	02	Spring Creek, 442603N1040920W, 4250 ft.

Forest Community	Genus	Species	# Specimens	Location
Quma/Syoc	Selatosomus	cruciatus	03	Spring Creek, 442603N1040920W, 4250 ft.
riparian-Pipo-Quma	Ampedus	areolatus	02	Sand Creek, T51N R61W sec 10 SENW
riparian-Pipo/Quma	Agriotes	fucosus	04	Spring Creek, 442701N1040831W, 3960 ft.
riparian-Pipo/Quma	Agriotes	stabilis	03	Spring Creek, 442701N1040831W, 3960 ft.
riparian-Pipo/Quma	Ampedus	apicatus	02	Spring Creek, 442701N1040831W, 3960 ft.
riparian-Pipo/Quma	Ampedus	molestus	01	Spring Creek, 442701N1040831W, 3960 ft.
riparian-Pipo/Quma	Ampedus	pullus	02	Spring Creek, 442701N1040831W, 3960 ft.
riparian-Pipo/Quma	Cardiophorus	tenebrosus	01	Black Hills, Spring Creek, 442701N1040831W, 3960 ft.
riparian-Pipo/Quma	Oxygonus	obesus	01	Spring Creek, 442701N1040831W, 3960 ft.
riparian-Pipo/Quma	Prosternon	mediana	01	Spring Creek, 442701N1040831W, 3960 ft.
riparian-Pipo/Quma	Pseudanostirus	nigricollis	01	Spring Creek, 442701N1040831W, 3960 ft.
riparian-Pipo/Quma	Pseudanostirus	propolus	01	Spring Creek, 442701N1040831W, 3960 ft.
riparian-Pipo/Quma	Pseudanostirus	triundulatus	04	Spring Creek, 442701N1040831W, 3960 ft.