

Invertebrates

[BRET'S] BLUE BUTTERFLY

Euphilotes bernardino inyomontana

Evaluation Species

Family Lycaenidae



John Lane (*Euphilotes bernardino*)

Description: Wings delicate, 9.5 - 12 mm (to 0.47 in.) wingspan. Males light cyanic blue with a narrow black wing border and weak checkered fringe. Females dark brown on upper side, extending to a bold terminal line; hindwings have a broad orange aurora. Underside of both sexes light gray to white, lacking the distinct black spots of other blues. Larval host plants include various buckwheats (*Eriogonum* sp.). Flight season from February to late August.

Diet: Buckwheat (*Eriogonum* sp.) is thought to be nectar source.

Habitat: Montane communities with buckwheat associations.

Range: Kern and Inyo counties, California; range probably extends into Esmeralda, Eureka, Mineral, Nye, and White Pine counties, Nevada. This subspecies of blues may accidentally occur in the Spring Mountains, Clark County, Nevada.

Comments: The species *Euphilotes battoides*, as listed in the MSHCP, is part of a complex of five species. The single specimen of blues found in the Spring Mountains, Clark County Nevada, was thought to be a new species. However, it was later identified as *Euphilotes bernardino inyomontana*.

CAROLE'S SILVERSPOT BUTTERFLY

Speyeria carolae
Family Nymphalidae

Covered Species



George T. Austin, Nevada State Museum

Description: Wings tawny-red to brown with variable black pattern, 53 - 69 mm (2.1 - 2.7 in.) wingspan. Body with greatly reduced front legs; underside color ranges from brown-purple to pale yellow-brown. Larval host plant is believed to be the endemic Charleston violet (*Viola purpurea* var. *charlestonensis*). Flight season from June to October, with peak activity in July.

Diet: Nectar species observed include thistle (*Cirsium* sp.), desert wallflower (*Erysimum asperum*), spreading dogbane (*Apocynum androsaemifolium*), mountain rose (*Rosa woodsii*), Charleston Mountain angelica (*Angelica scabrida*), pincushion (*Chaenactis* sp.), and lupine (*Lupinus* sp.).

Habitat: Bristlecone pine community, also in mixed conifer, pinyon-juniper, and sagebrush communities. Elevations: 2,000 - 3,200 m (6,560 - 10,500 ft), but typically below 2,300 m (7,500 ft).

Range: Endemic to the Spring Mountains. Kyle Canyon; also known from Mount Stirling, Mount Potosi, and Lovell Wash.

Comments: The MSHCP lists this species as *Speyeria zerene carolae*. Currently known as *Speyeria carolae*; it is the only full taxonomic species of butterfly endemic to the Spring Mountains.

DARK BLUE BUTTERFLY

Euphilotes ancilla purpura

Covered Species

Family Lycaenidae



Rick Cech (Euphilotes enoptes)

Description: Wings delicate, 19 - 28 mm (0.75 - 1.10 in.) wingspan. Males blue in color with checkered wing fringes; females typically brown, may be spotted. Adults found in the vicinity of the host plant, sulphur flower buckwheat (*Eriogonum umbellatum*), which is also the larval host plant. Flight season from June to late July, males appearing one month before females; this variety appears to have two flights per year coinciding with flowering of its host plant.

Diet: Adult food consists of nectar of sulphur flower buckwheat; larvae (caterpillars) eat flowers and fruit of the same host plant. Male dark blue butterfly may be found near springs to obtain dissolved nutrients from mud.

Habitat: Stream banks, springs, and seeps, primarily in mixed conifer and pinyon-juniper communities; also uses sagebrush and wet areas near high elevation springs. Elevations: 1,500 - 2,500 m (4,920 - 8,200 ft).

Range: Endemic to the Spring Mountains, Clark County, Nevada. Known only from few areas, including Willow Creek and Cold Creek, Kyle Canyon, Carpenter Canyon, Mount Stirling, Coal Springs, and Lovell Canyon.

Comments: The MSHCP lists the old nomenclature, *Euphilotes enoptes purpurea*. Also, the common name more often used is Spring Mountains Dark Blue.

MACNEILL'S DESERT SOOTYWING

Hesperopsis graciellae

Family Hesperiiidae

Evaluation Species



David Powell



David Powell

Description: Wingspan 20 - 32 mm (0.8 - 1.3 in.), forewing mottled gray pattern with short row of dark bars near outer margin; wing fringes checkered. Hindwing may have pale spots. Underside and upperside black. Larval host plants include quailbush (*Atriplex lentiformis*), and other members of the goosefoot family. Flight season from April to September.

Diet: Known nectar species are saltcedar (*Tamarix* sp.), seaside heliotrope (*Heliotropium curassavicum*), and alfalfa (*Medicago sativa*).

Habitat: Desert riparian areas with flat deep soils where its larval host, quailbush (*Atriplex lentiformis*), is present; also in desert washes and alkali flats. Elevations: 411 - 609 m (1,350 - 2,000 ft).

Range: Endemic to the Colorado River drainage from southwestern Utah to northern Baja California, Mexico. The Nevada populations are the northernmost of its range, occurring in scattered colonies along the Muddy River.

MORAND'S CHECKERSPOT BUTTERFLY

Euphydryas anicia morandi

Covered Species

Family Nymphalidae



George T. Austin, Nevada State Museum

Description: Wings orange with dark “checkerspots,” 31 - 44 mm (1.22 - 1.74 in.) wingspan. Body with greatly reduced front legs. Coloration of this subspecies varies between colonies, from yellow-orange to orange to a very dark orange. Larval host plants include Indian paintbrush (*Castilleja linariifolia*) and Clokey wavyleaf paintbrush (*Castilleja martinii* var. *clokeyi*). Flight season from May through July.

Diet: Nectar sources observed include desert wallflower (*Erysimum asperum*) and dandelion (*Taraxacum officinale*).

Habitat: Meadows and avalanche chutes, within the alpine zone, bristlecone pine, mixed conifer forest, and pinyon-juniper communities. Elevations: 2,100 - 3,200 m (6,890 - 10,500 ft).

Range: Endemic to the Spring Mountains. Small populations occur above the Lee Canyon ski area and its ridges and above Kyle Canyon up to Charleston Peak. Also known from Griffith Peak to Upper Carpenter Canyon, and Harris Mountain.

Comments: This subspecies has three unique phenotypic expressions, ranging from nearly black to light orange; the larvae can also extend diapause for up to several years, enhancing survival rate.

MOUNT CHARLESTON BLUE

Icaricia shasta charlestonensis

Covered Species

Family Lycaenidae



George T. Austin, Nevada State Museum

Description: Wings delicate, 22 - 28 mm (0.86 - 1.10 in.) wingspan. Males lilac blue with a brownish border, females similar but darker in color. Larval host plant Torrey milkvetch (*Astragalus calycosus*). Flight season from July to August; with peak activity late July.

Diet: Nectar sources include Torrey milkvetch, aster (*Aster* sp.), fleabane (*Erigeron*), and goldflower (*Hymenoxys*).

Habitat: Open areas such as ridge lines, ski runs, and avalanche paths in bristlecone woodlands or mixed conifer forests that support the larval host plant, Torrey milkvetch. Elevations: above 2,000 m (6,560 ft).

Range: Endemic to the Spring Mountains. Known from the ski area in Lee Canyon; new observations include Bonanza Trail, main crest between Griffith Peak and Upper Carpenter Canyon, and North Loop Trail.

NEVADA ADMIRAL

Limenitis weidemeyerii nevadae

Covered Species

Family Nymphalidae



Description: Wings black with white-yellow bands, 56 - 78 mm (2.5 - 3.5 in.) wingspan. Body black with greatly reduced front legs. Larval host plants are principally willow (*Salix* sp.) and aspen (*Populus tremuloides*), but serviceberry (*Amelanchier utahensis*) is also used sometimes. Flight season from May to August; with peak activity late June to early July.

Diet: Variety of plant species, observations include mountain balm (*Eriodictyon angustifolium*), thistle (*Cirsium* sp.), western Virgin bower (*Clematis ligusticifolia*), and common hoarhound (*Marrubium vulgare*).

Habitat: Riparian habitats, bristlecone pine, mixed conifer forest, and pinyon-juniper communities. Elevations: 1,500 - 2,800 m (4,920 - 9,200 ft).

Range: Southern Nevada endemic. Known from the Spring Mountains (Mount Potosi, Mount Stirling), and the Sheep Range.

Comments: The correct spelling of the genus name is *Limenitis*.

SPRING MOUNTAINS ACASTUS CHECKERSPOT

Chlosyne acastus robusta

Covered Species

Family Nymphalidae



George T. Austin, Nevada State Museum

Description: Wings checkered dull orange to bright orange with black lines and smudges, 28 - 42 mm (1.1 - 1.65 in.) wingspan. Body with greatly reduced front legs. Although the larval host plant has not been determined, current research indicates rabbitbrush (*Chrysothamnus* spp.) may be used. Flight season from May to July.

Diet: Nectar host plants observed include Nevada sunflower (*Heliomeris [Viguiera] multiflora*).

Habitat: Primarily found in riparian areas, mixed conifer and pinyon-juniper habitat, also found in sagebrush. Its habitat requirements are poorly understood. Elevation: 1,780 - 3,050 m (5,840 - 10,000 ft).

Range: Endemic to the Spring Mountains. Primarily known from Kyle Canyon and Deer Creek; also the north side of Mount Stirling and north side of Mount Potosi.

Comments: This species was previously known as *Charidryas acastus robustus*.

SPRING MOUNTAINS COMMA SKIPPER

Hesperia colorado mojavensis

Covered Species

Family HesperIIDae



George T. Austin, Nevada State Museum

Description: Wings mottled and short, 28 - 31 mm (1.1 - 1.2 in.) wingspan. Body smooth; male a tawny (light brown) color with a dark wing border; females brownish with a darker border than males. Larval host plants of this subspecies have not been determined, but members of the species use various grasses and sedges. Flight season from May to September, with peak activity late June to early July.

Diet: The preferred nectar host plants are species of thistle (*Cirsium* sp.). Other nectar host plants include rabbitbrush (*Chrysothamnus* sp.), dandelion (*Taraxacum officinale*), and Palmer penstemon (*Penstemon palmeri*).

Habitat: Riparian areas in mixed conifer forests and pinyon-juniper communities. Males tend to congregate at sites with surface water or standing mud several weeks before the females appear. Elevations: 1,500 - 3,000 m (4,930 - 9,840 ft).

Range: Endemic to the Spring Mountains. Found throughout the range at mid-elevations, and in lesser abundance as high as 3,000 meters.

Comments: This species was formerly known as *Hesperia comma mojavensis*.

SPRING MOUNTAINS ICARIOIDES BLUE

Icaricia icarioides austinorum

Covered Species

Family Lycaenidae



George T. Austin, Nevada State Museum

Description: Wings delicate, 28 - 34 mm (1.10 - 1.34 in.) wingspan. Males light blue in color with lilac reflections, females from dark blue to brown. Host plants predominantly lupines (*Lupinus* sp.), including the principal larval host, silver lupine (*Lupinus argentus*). Flight season from May to September, with peak activity late June to early July.

Diet: Nectar host plants include sulphur flower buckwheat (*Eriogonum umbellatum*), Douglas pincushion (*Chaenactis douglasii*), cinquefoil (*Potentilla* sp.), and silver lupine. Larvae also feed on silver lupine. Species dependent on wet sites and standing mud to obtain moisture, minerals, and nutrients before the desired host plants are in bloom.

Habitat: Open stands and meadows, in bristlecone pine woodlands and mixed conifer forest habitats. Also in pinyon-juniper and sagebrush communities, and wet areas near springs. Elevations: 1,800 - 3,000 m (5,900 - 9,850 ft)

Range: Endemic to the Spring Mountains, Clark County, Nevada. The largest concentration of this species is located in the central portion of the range, particularly in Kyle Canyon. Predicted distribution is nearly everywhere in the Spring Mountains where lupines grow.

SPRING MOUNTAINS SPRINGSNAIL

Pyrgulopsis deaconi

Covered Species

Family Hydrobiidae



Jan Nachlinger

Description: A member of the aquatic snail family, 1.5 - 1.9 mm (to 0.07 in.) in length, and 1.3 - 1.7 mm (to 0.07 in.) in width. Shell sub-globose, filament of medium length, lobe short. Penial ornament a small terminal gland with a large penial gland. Ventral gland is also large. This springsnail completes its life cycle in one year.

Diet: Feeds on algae.

Habitat: Spring ecosystems with permanent flow of highly oxygenated water. The water must also be highly mineralized but relatively unpolluted.

Range: Southern Nevada endemic. Known from the Spring Mountains in Red Spring and Kiup Spring. Previously known from Willow Spring, Clark County, and from southern Nye County, now presumed extirpated.

Comments: The MSHCP includes two Evaluation Species, the Moapa pebblesnail (*Pyrgulopsis avernalis*) and the Moapa turban snail (*Pyrgulopsis carinifera*).

SOUTHEAST NEVADA SPRINGSNAIL

Pyrgulopsis turbatrix
Family Hydrobiidae

Covered Species



Clemm Clemmer

Description: A member of the aquatic snail family, medium-sized, 2.1 - 3.6 mm (to 0.14 in.) in length and 1.5 - 2.2 mm (to 0.09 in.) in width. Shell narrow-conic to turriform, filament and lobe of medium length. Penial ornament a small terminal gland with a very small (sometimes absent) penial gland. This springsnail completes its life cycle in one year.

Diet: Feeds on algae.

Habitat: Spring ecosystems with permanent flow of highly oxygenated water. The water must also be highly mineralized but relatively unpolluted.

Range: Endemic to the Spring Mountains. First collected in 1995 from Horseshutem Spring in Nye County, Nevada. In Clark County, Nevada, known to occur in Lost Creek, Willow Creek, Cold Creek, Grapevine Springs, and La Madre Spring.

Comments: The MSHCP includes two Evaluation Species of the same genus: the Moapa pebblesnail (*Pyrgulopsis avernalis*) and the Moapa turban snail (*Pyrgulopsis carinifera*).

MOJAVE GYPSUM BEE

Andrena balsamorhizae

Evaluation Species

Family Andrenidae



Jeff Knight, Nevada Division of Agriculture

Description: Individual bee species can be distinguished from each other by the hairiness of their body, by the first segment (tarsus) of the hind leg which is generally enlarged and flattened, and their wings. Length of female Mojave gypsum bee 11 - 13 mm (to 0.5 in.), wing length 4 mm (0.16 in.). Specific diagnostic features for females are red abdomen, short dense body hairs, and high vertex (top of head between eyes). Length of male bee 9 - 12 mm (to 0.47 in.), wing length 4 mm (0.16 in.), vertex high, and yellow spot in the eye. Wing membranes of both sexes are hyaline (transparent, colorless) with dark-red to reddish brown veins. Outer coverings mostly black except features described above. Flight period of Mojave gypsum bee is from March to early May.

Diet: Mojave gypsum bee collects pollen from a single plant species, the sunray (*Enceliopsis argophylla*), which is also the sole source of pollen for its offspring.

Habitat: Bees occur in various habitats, and nest on the ground (a characteristic of the Andrenidae family), or in various natural cavities. Mojave gypsum bees are restricted to the habitat of its host plant, sunray.

Range: Endemic to Clark County, Nevada, and the Arizona side of Lake Mead. Occurs in areas around Lake Mead and the Las Vegas basin where it is restricted to the gypsum soils associated with its host plant.

Comments: Mojave gypsum bee is considered a High Priority Evaluation Species. It is one of over 30 rare bee species in Clark County, Nevada, and of over 600 bee species in the Mojave Desert.

MOJAVE POPPY BEE

Perdita meconis

Family Andrenidae

Evaluation Species



Jeff Knight, Nevada Division of Agriculture

Description: Individual bee species can be distinguished from each other by the hairiness of their body, by the first segment (tarsus) of the hind legs, and their wings. Length of male bee 5 mm (0.2 in.), forewing 4 mm (0.16 in.) long. Head and part of thorax (body region which bears legs and wings) dark green, front of head pale yellow, legs black with some pale yellow stripes. Wings hyaline (transparent, colorless), veins milky white except brown subcosta (one of longitudinal veins). Terga (plates of dorsal surface on abdomen) from dark green to brown to amber-yellow. Diagnostic feature of males: apical lobes of T7 (tergum 7) thickened. Length of female bee 6.5 - 7 mm (0.27 in.), forewing to 5 mm (0.2 in.) long; coloration as in male except smaller areas of pale-yellow markings on head. Flight period from mid-April to early June.

Diet: Floral preference of the Mojave poppy bee appears to be large-flowered plants of the poppy family, *Arctomecon* and *Argemone*.

Habitat: Mojave poppy bees are restricted to the habitat of its associated plant species.

Range: Known to occur in the eastern Mojave Desert from Kelso, California, to near St. George, Utah; this species is rare and very patchily distributed.

Comments: Mojave poppy bee is considered a High Priority Evaluation Species. Medium Priority Evaluation Species of bees are listed on the following page. The photo above is a native Bee species.

BEE SPECIES LIST

Evaluation Species

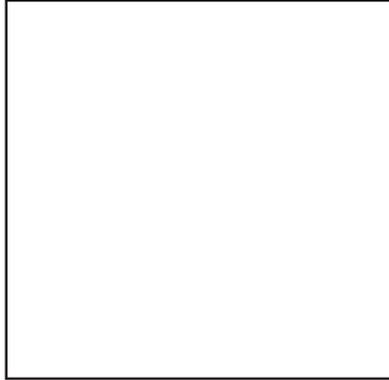
Dalea blister bee, *Ancylandrena koebelei*
Red-legged beardtongue bee, *Atoposmia rufifemur*
Virgin River globemallow bee, *Diadasia proridens*
Red-tailed blazing star bee, *Megandrena mentzeliae*
Two-tone perdita (bee), *Perdita bipicta*
Mojave twilight bee, *Perdita celadona*
Big-headed perdita (bee), *Perdita cephalotes*
Las Vegas perdita (bee), *Perdita cracens*
Virgin River perdita (bee), *Perdita crotonis caerulea*
Spurge-loving perdita (bee), *Perdita euphorbiana*
Tiquilia perdita, *Perdita exusta*
Apache plume perdita (bee), *Perdita fallugiae*
Yellow-headed perdita (bee), *Perdita flaviceps*
Moapa perdita (bee), *Perdita fulvescens*
Unadorned perdita (bee), *Perdita inornata*
Valley of Fire perdita (bee), *Perdita nevadiana*
Virgin River twilight bee, *Perdita vespertina*
Mojave Mountain perdita, *Perdita vicina*
Desert-loving perdita, *Perdita xerophila discrepans*

CRAWLING WATER BEETLE

Halplus eremicus

Family Haliplidae

Evaluation Species



No photo available at this time

Description: The crawling water beetle family is a group of inconspicuous water dwelling insects. This species is small, 3.1 - 3.6 mm (to 0.14 in.) long. Body broadly oval, head a darker yellow (vitelline), front wing (elytra) cinnamon to yellow, leathery, thickened. Hind coxal plates extremely enlarged and concealing the basal leg segment.

Diet: Algae or other plant materials.

Habitat: In or near freshwater ponds, in masses of vegetation on or near the surface of the water.

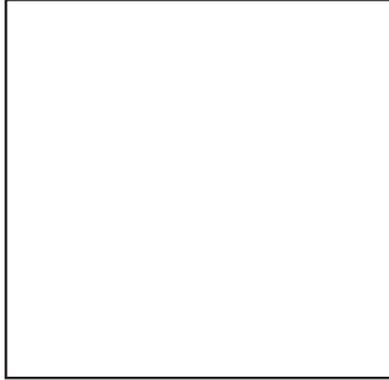
Range: Warm Springs area, Moapa, Clark County, Nevada.

GRATED TRYONIA

Tryonia clathrata

Family Hydrobiidae

Evaluation Species



No photo available at this time

Description: Grated Tryonia, a member of the Hydrobiid family, are very minute aquatic prosobranch snails. These snails are typically less than 5 mm (0.2 in.) in length, cone-shaped, and with prominent ridges running the length of the shell.

Diet: Unknown.

Habitat: Freshwater spring systems, typically occur on or in algae and detritus substrates and slow current.

Range: Known to occur in the Cardy Lamb and Muddy Spring systems; likely to occur in the Warm Springs area, all in Clark County, Nevada. May also occur in the Pahranaagat and White River valleys to the north.

Comments: The MSHCP lists other species of *Tryonia*, but little is known about them.

List of Tryonia Species

Dry Lake Bed species, *Tryonia* sp.

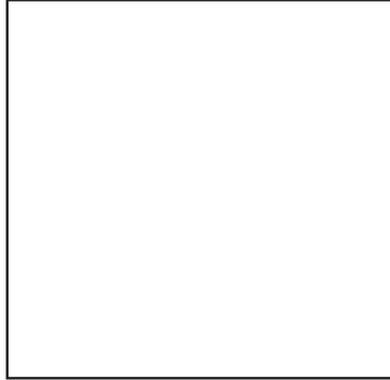
Undescribed tryonia, *Tryonia* sp.

MOAPA WARM SPRING RIFFLE BEETLE

Stenelmis moapa

Evaluation Species

Family Elmidae (Riffle beetles)



No photo available at this time

Description: Slender beetle, 3.5 mm (0.14 in.) long, 1.0 mm (0.04 in.) wide, cylindrical in shape. Head round, minutely tuberculate (wart-like), with dark stripe down the middle of the head. Back various shades of reddish-brown, legs a greenish tint. Wings undeveloped, non-functional.

Diet: Feed on aquatic plants and algae.

Habitat: Outflow streams from warm temperature springs to 31.7°C (89° F), occur in swift, shallow water on pebble, algae-covered rocks within sand-pebble areas, in aquatic vegetation and bare tree roots.

Range: Endemic to the Warm Springs area in Moapa, Clark County, Nevada.

Comments: *Stenelmis moapa* is a High Priority Evaluation Species. The Medium Priority Moapa riffle beetle (*Microcyloepus moapus moapus*) occupies similar habitat in the Warm Springs area but at shallower water depth and higher velocity water.

MOAPA WATER STRIDER

Rhagovelia becki

Evaluation Species

Family Veliidae (Broad shouldered water striders)

Jeff Knight, Nevada Division of Agriculture



Description: Small water strider, 4 mm (0.16 in.) in length, with broad shoulders, dark brown to black in color. Adults have shorter legs, and are usually wingless. Members of this genus have one-segmented tarsi (one segment at the tip of the leg) with tufts of hair that enables them to move about without breaking the surface of the water. They are gregarious and often found in large numbers.

Diet: Feed on various small insects.

Habitat: On the water surface, inhabit swift riffle reaches of the upper Muddy River and its tributaries.

Range: Endemic to the Moapa area, Clark County, Nevada.

Comments: This species is also known as Moapa Skater.

NAUCORID

Usingerina moapensis

Family Naucoridae

Evaluation Species

Jeff Knight, Nevada Division of Agriculture



Description: Naucorids are true bugs, 5 - 6 mm (0.24 in.) long, commonly called creeping water bugs. This species is brownish in color, body shape broadly oval and somewhat flattened. Diagnostic features include the greatly thickened front femora (femur of front leg) and front wing membranes without veins. Naucorids bite quite readily and painfully when picked up.

Diet: Small aquatic invertebrates.

Habitat: Quiet waters or stream outlets; found in pebble beds of stream habitat with water temperatures between 23.9 - 31.7° C (75 - 89° F).

Range: Endemic to the Warm Springs area, Clark County, Nevada.

Comments: This species is a High Priority Evaluation Species. Amargosa naucorid (*Pelocoris shoshone shoshone*), a Medium Priority species, also occurs in the Warm Springs area.

SPRING MOUNTAINS ANT

Lasius nevadensis

Family Formicidae

Evaluation Species



Jeff Knight, Nevada Division of Agriculture

Description: Small ant; total length of some members of this genus reach 4.5 mm (0.18 in.). Diagnostic features of this species include: head length of worker ants 0.9 mm (0.035 in.), female head length 1.2 mm (0.047 in.), and male head length 0.73 mm (0.028 in.). Head and posterior portion of gaster (enlarged part of abdomen behind the pedicel in ants) yellowish brown, thorax and anterior portion of gaster dull yellow. Ants generally nest in colonies; each colony consists of one or more queens (lay all the eggs), workers, and males. Mating usually occurs in a mating flight; flight season of this species was observed in July 1956.

Diet: Unknown; diet of some members of this genus is said to be honeydew from root aphids and mealybugs.

Habitat: Subterranean nests, without cover or beneath large stones. In 1956, nests were found in an unshaded area in coniferous forest. Elevation: 2,348 m (7,700 ft).

Range: Kyle Canyon in the Spring Mountains, Clark County, Nevada.

Comments: This species has only been reported in 1956. The photo above is not *L. nevadensis* but a closely related species.

WATCH LIST SPECIES

Red-legged lava bee	<i>Ashmeadiella picticus</i> sp. nov.
Flat-faced cactus bee	<i>Lithurge listrota</i>
Beck's perdita (bee)	<i>Perdita becki</i>
Rock nettle perdita (bee)	<i>Perdita eucnides eucnides</i>
Banded perdita (bee)	<i>Perdita vittata conformis</i>
Koso phacelia bee	<i>Protodufourea koso</i>
Michener's phacelia bee	<i>Xeroheriades michener</i>
Corn Creek springsnail	<i>Pyrgulopsis</i> sp.
Blue Point springsnail	<i>Pyrgulopsis</i> sp.
Undescribed Blue Point tryonia	<i>Tryonia</i> sp.