



Klamath Network Featured Creature

July 2012

Golden Stoneflies (Plecoptera: Perlidae)

FIELD NOTES:

General Description: Golden Stoneflies are among the largest stoneflies to be found inhabiting the streams of our region. The only larger stoneflies may be the Salmon Fly (see the July 2009 Featured Creature). In all of North America, there are 15 genera, but in our region there are three main genera: *Doroneuria*, *Calineuria*, *Classenia* and *Hesperoperla*, often co-occurring.

Nymphs of the Perlidae family are large, up to 2 inches (or ~50mm), and are brilliantly patterned with stripes and dark markings over a yellow body. They also have abundant filamentous gills in their “armpits,” (thoracic segments), but never on their abdomen. The adults are similarly large, generally poor fliers, and have 4 large wings common to all stoneflies. True to the name, the adults are a golden brown.

Life History: Golden stoneflies have a multi-year life cycle, where they spend their nymphal stage in fast flowing, cool water for two years (or more), feeding and growing until emergence during the summer months. The adult stage can live for several weeks to a full month, before depositing their eggs in cold stream waters (in a process known as ovipositing to nerdy stream ecologists).

Diet and Ecology The Golden Stoneflies are predaceous to the extreme. Next to Megaloptera larvae (aka Hellgramites), they are the largest invertebrate predator inhabiting the local mountain streams. They feed upon mayflies, other stoneflies, caddisflies, dipterans (fly and midge larvae);



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“escabaturm rip3”

basically any unlucky invertebrates that these search and destroy predators come across.

The adult stage, unlike mayflies (see June 2010 Featured Creature), do feed as adults, typically on algae, lichen, rotting wood, or other detritus.

Habitat: Perlidae stoneflies are typically found in cobble-strewn, clean, clear, silt-free montane streams and are largely regarded as indicators of clean water.

Distribution: Perlidae Stoneflies are distributed world-wide, (except Antarctica). In Australia, they are represented by an endemic family, Austroperlidae.

Neat Facts: If you pull them out of the stream (easy to do, just turn-over enough rocks in your local stream and you’ll find them), place them in a shallow tray of water, and you’ll see them “do push-ups” just like they’re at their local gym. This is a behavioral adaptation to low amounts of oxygen – by doing push-ups, they’re increasing water circulating over their gills!

Where to see it in the Klamath

Parks: Golden stoneflies occur in all of our parks in the region, that include cold flowing water (Crater Lake NP, Lassen Volcanic NP, Whiskeytown NRA, Redwood National and State Parks, and Oregon Cave NM).

References:

Stewart, K.W. and B.P Stark. 1993. Nymphs of North American Stonefly Genera (Plecoptera) University of North Texas Press, Denton, TX.