

May 7, 2012

To: Chris Lee, SCWA
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Subject: Invertebrate colonization - River Parkway Restoration Section of Putah Creek

Synopsis

Since the rewatering of the River Parkway Restoration Channel of Putah Creek, the invertebrate community has gone through two distinct changes: the first was in early spring when the blackfly (Simulidae) population averaged 270 larvae per cobble using a Quick-30 technique (Thirty cobble (3-12 inches wide are sampled). The second, and probably more significant occurrence, is the recent colonization of the riffle sites by:

1. *Glossosoma sp.* a caddisfly sensitive to temperature and flow rates
2. *Epeorus alberte* a mayfly sensitive to pollution

Discussion

The initial colonization of the new River Parkway creekbed by blackflies (Simulidae - Diptera) occurred as expected in early spring. Larval and fingerling fish feed heavily on blackfly larvae according to a plethora of studies on Oregon streams. The second and possibly more significant colonization by two caddisfly genera, specifically *Glossosma sp.*, is an important sign as they prefer cool, fast-flowing water and basically mirror the rainbow trout range in Putah Creek. Additionally, pollution sensitive mayflies - *Epeorus albertae* - were also collected in the restoration area. The section was monitored prior to the restoration. During the next year, 10 sites in the restoration area will be monitored monthly using a quick and effective technique of sampling 30 cobble in each of the ten sites. For the purposes of this report, five sites were sampled on May 2, 2012. See results in the chart on page 2 of this report.



River Parkway Restoration Section view off Winters Bike Bridge - May 2, 2012



Species

Glossosoma sp. (Tricoptera) has two overlapping generations in Putah Creek. Because they do not have gills, they tend to prefer cool, fast water. Any riparian cover in the riffle areas could increase the density of *Glossosoma* and other clean-water invertebrates



Epeorus albertae (Ephemeroptera) is sensitive to organic pollution including excessive sedimentation which eliminates interstitial spaces between cobble. The cannot survive without unlimited access to free-stone cobble.

| Invertebrate Survey Results - Quick 30 Sample - May 2, 2012 | | | | | | |
|---|-----------|--------------------|----------|-------------|------------|------------------------|
| Invertebrates | | River Parkway Site | | | | |
| Genera | Group | Neil | Crossing | Weir (Neil) | Car Bridge | Weir 2 (Perc Dam weir) |
| New Zealand Mudsnails | snail | 3 | | 5 | 3 | 2 |
| <i>Physa acuta</i> | snail | | | | 7 | 1 |
| <i>Planorbis</i> | snail | 1 | | | 1 | |
| <i>Glossosoma</i> (larvae) | caddisfly | | 20 | 3 | | |
| <i>Glossosoma</i> (pupae) | caddisfly | | 21 | 8 | | |
| <i>Hydropsyche</i> (larvae) | caddisfly | | 15 | 4 | | |
| <i>Hydropsyche</i> (pupae) | caddisfly | | 6 | 6 | | |
| <i>Amiocentrus aspilis</i> | caddisfly | | 2 | | | |
| <i>Baetis tricaudatus</i> | mayfly | 1 | 74 | 24 | 3 | 58 |
| <i>Centroptilum</i> | mayfly | 1 | | | | |
| <i>Epeorus albertae</i> | mayfly | | | 2 | | |
| <i>Tricorythodes</i> | mayfly | 1 | | 1 | | |
| Mayfly Unidentified | mayfly | | 1 | | | |
| <i>Simulium</i> | True Fly | | 137 | 42 | 7 | 21 |
| <i>Hetaerina americana</i> | damselfly | 1 | | 1 | | |
| <i>Sigara</i> (water boatmen) | Hemiptera | 95 | 1 | | 25 | 2 |
| <i>Gammarus</i> | scud | | 1 | | | |
| Nematophora | | | | 2 | | |

Survey Sites - River Parkway Restoration Section



Site 1A - Neil Section



Site 4A - Winters Car Bridge



Site 2A - Crossing Area



Site 7A - Perc Dam Weir



Site 3A - Upper Weir

Submitted 5/7/12 via e-mail.

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