



**Newsletter of the
SOUTHWEST ASSOCIATION OF FRESHWATER
INVERTEBRATE TAXONOMISTS**

Greetings SAFIT members,

Have a job opening that you want to announce, or are looking for a job? Let SAFIT know in the Newsletter! Looking for specimens of a certain species or a literature reference? Need material for research or comparative purposes? Let your colleagues know in the SAFIT Newsletter! Want a workshop on a particular group of organisms? Have books or reprints to share, trade, or sell? Looking for a collecting partner? Put it here in the SAFIT Newsletter! All appropriate requests, queries, advertisements and announcements will be considered, and are free to the SAFIT membership.

Pictured above is an adult *Kathroperla takhoma* Stark and Surdick, 1987. *Kathroperla* and closely related *Paraperla* emerge early in the spring. The nymphs spend much of their time in hyporheic habitats so they aren't commonly found in stream samples. I often find exuviae under bridges, on riparian trees, etc., but living nymphs have been few and far between. I collected the *Kathroperla* in the photo on 11 May 2008 in one of the Clear Creek tribs along CA Hwy 36 in Trinity Co. This was the first time I ever encountered adults for this genus and I wound up seeing more than a dozen that day. I've since caught other *Kathroperla* nymphs and adults, as well as *Paraperla*. Long time readers may remember the Emergence photo used for many issues of the newsletter in which a *Moselia infuscata* (Claassen, 1923) adult checks out a couple stonefly exuviae, including a *Pteronarcys* and *Kathroperla*. I took that photo the same day as the one above.

Thanks!
Brady Richards, Editor

ANNOUNCEMENTS AND NOTICES

The notices, announcements and advertisements in this section do not reflect SAFIT or SAFIT's views, opinions or policy, and do not constitute an endorsement of an advertiser's abilities, skills, or products.

SAFIT Presents:



**A Workshop on the
Taxonomy of Western Aquatic Mites
18-19 May 2016**

**Hosted by CSULB Stream Ecology and Assessment Laboratory
California State University, Long Beach
Hall of Science Room 75**

The Southwestern Association of Freshwater Invertebrate Taxonomists (SAFIT) is sponsoring a two-day workshop providing comprehensive instruction on the taxonomy, identification, and natural history of western aquatic mites. The course instructor is:

Dr. Heather Proctor, Professor of Biology, University of Alberta, Edmonton, Canada. Dr. Proctor's main research includes the ecology, evolution, systematics and behavior of mites (Arachnida: Acari). Within this fascinating and diverse subclass there are three groups in which she is most interested: aquatic mites, soil mites, and feather mites. Her theoretical research areas include the community ecology of freshwater and soil invertebrates, determinants of biodiversity, co-evolution of hosts and symbionts, and both macro- and microevolutionary aspects of sexual selection.

Attendees will receive a complete introduction to the biology and taxonomy of the aquatic Acari of western North America as well as training in the proper preparation of specimens for study. Attendees will also receive identification manuals and supporting materials prepared by the instructor for this workshop, including new keys and figures.

Additionally, feel free to bring problematic specimens from any freshwater invertebrate group as there will be many specialists attending the workshop who would be willing to assist on identification.

The workshop will be held on the California State University campus in Long Beach in the new Hall of Science building. Special thanks to Dr. Dessie Underwood, the CSULB Stream Ecology and Assessment Laboratory (CSULB-SEAL), and CSULB Department of Biological Sciences for hosting this SAFIT event. Also, special thanks to SWAMP and SWRCB for their funding support.

Location: California State University, Long Beach
Hall of Science Room 075
1250 Bellflower Blvd.
Long Beach, CA 90840

Cost to Attend: SAFIT Members: \$300
Non-members: \$400

You must be an active member of SAFIT for 2016 at the time of registration to register for the workshop at the reduced fee

If you are interested in attending, please contact Wendy Willis wendy@aquabio.org. We have room for 50 participants in this workshop and these seats will be filled on a first come first serve basis. We will accept participants up to the day of the workshop or until all seats are filled. To ensure your place in this workshop, please send registration payments by **April 29th, 2016**. You may register online using PayPal (preferred method) on the SAFIT website (<http://safit.org/event.php>) or by sending your registration form and payment to:

Wendy Willis
Aquatic Bioassay and Consulting
Laboratories, Inc.
29 North Olive Street
Ventura, CA 93001

Please make checks/money orders payable to “SAFIT” in US dollars

If you have any questions about this workshop please contact Wendy Willis at wendy@aquabio.org.



SFS Annual Meeting

The annual Society for Freshwater Science (SFS) meeting will be held May 21-26 in Sacramento, CA. Please see their website for details and registration info: <http://sfsannualmeeting.org/>

New Book Announcement:

Thorp and Covich's *Freshwater Invertebrates Volume II: Keys to Nearctic Fauna*, edited by J.H. Thorp & D.C. Rogers is now available both in print and in electronic version! It is available at: <http://store.elsevier.com/product.jsp?isbn=9780123850287&pagename=search>

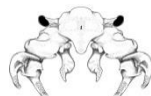
The second volume in this landmark series presents a comprehensive revision and expansion of this trusted professional reference manual and educational textbook on freshwater invertebrates that is designed for multiple uses and levels of expertise.

It includes an introductory chapter followed by 15 taxonomically specific chapters with identification keys to Nearctic freshwater invertebrates (protozoa through arthropods). Other than the second chapter's treatment of the diverse, multiphyla array of protozoa (ciliates, flagellates, and amoebas), each of the remaining 14 chapters is limited to a single phylum.

Volume II is an identification manual; the keys are greatly revised and expanded over previous editions, with (for the first time) keys to species for crayfish, as well as most crustacean groups, and most gastropods. Furthermore, whereas the previous editions only covered the USA and Canada, this volume covers the entire Nearctic region.

This volume complements Volume I's global coverage of "Ecology and General Biology," and thus, only minimal information on those topics is included here. Volume II is devoted to the identification of inland water invertebrates of the Nearctic Bioregion, including Canada, the continental United States, Mexico north of the Tropic of Cancer, Bermuda, and Greenland. Most keys terminate at the lowest defensible taxonomic level (generally genus or species), and generalized distribution data is included.

The series begins with *Volume I: Ecology and General Biology* (2015), which is designed as a companion volume for the remaining books in the series. The next installment of the series will be *Keys to Palaearctic Fauna* (Vol. III) due to come out in 2017. Volumes IV (*Keys to Nearctic Fauna*) and V (*Keys to Australian Fauna*) are currently in production. As in previous editions, the fourth edition of *Ecology and Classification of North American Freshwater Invertebrates* is designed for use by professionals in universities, government agencies, and private companies as well as by undergraduate and graduate students.



From Erick Burre and the Clean Water Team:

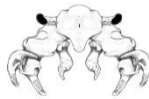
To complement the super easy super useful free Creek Watch app, the Clean Water Team has released the “[Environmental Monitoring User Manual for the Creek Watch App](#)”.

Many agencies besides the Water Boards are looking at incorporating and supporting citizen monitoring. In response to that and our many requests by Federal and State agencies and programs to share how the Clean Water team works, we have created “[The California Citizen Science, Crowdsourcing and STEM Toolkit for Agencies and Tribes Working with Surface Waters and Watersheds](#)”.

Lastly, for those interested in what the Clean Water Team has to offer entry level low or no cost monitoring, we put together this poster/handout, [Creating Pathways for Exploring and Monitoring Freshwater and Aquatic Environments](#).

The Clean Water Team organized the special session at the 2016 SFS Conference, *Community Engagement in Science*. Come and join us: Sunday, 22 May 2016; Time: 10:30 AM; Presentation Room: 304-305

Erick has organized a Prayer Breakfast that will coincide with the SFS Conference in Sacramento. Info is at www.eventbrite.com/e/freshwater-scientists-prayer-breakfast-tickets-23174012094?aff=es2



EMPLOYMENT OPPORTUNITIES

Please contact the editor if you would like to post an employment opportunity.

MISCELLANEOUS BUG NOTES

Anecdotal notes, including distributional records in the SAFIT region, which may be interesting or helpful to SAFIT members. To make contributions or comments, contact the editor: arichards@csuchico.edu.

TOUGH CHARACTERS

Got a TOUGH CHARACTER? The more difficult diagnostic characters and key couplets for those taxa that are tricky to separate are elucidated in this column. Plenty of good grudge matches will be presented in photos, figures and descriptions. Think there are tough characters that are being missed? Submit your tough characters and get them compared with other character states right here.

FIELD & LAB

*A feature in each newsletter issue exploring an aspect of aquatic macroinvertebrates beyond sample processing that may be beneficial to members. **Contact the editor to contribute or comment.***

The California Stream Condition Index: California's standard tool for bioassessment using benthic macroinvertebrates

Raphael D. Mazor^{1,2}, Andrew C. Rehn², Peter R. Ode², & Calvin Yang³

¹ Southern California Coastal Water Research Project. Costa Mesa, CA

² Department of Fish and Wildlife. Rancho Cordova, CA

³ State Water Resources Control Board. Sacramento, CA

The California Stream Condition Index (CSCI) is a new assessment tool to measure the health of nearly all wadeable streams in California using benthic macroinvertebrates. In contrast to regional indices (such as the Indices of Biotic Integrity [IBI] for the South Coast, North Coast, or Central Valley), the CSCI can be used in all parts of the state, and a score in one region has the same meaning as a score in another region. Additionally, because it is based on predictive models that account for natural factors that may affect benthic macroinvertebrate assemblages, it can set unique expectations for each site. Therefore, the CSCI can distinguish low richness caused by pollution from low richness related to environmental constraints. The State Water Resources Control Board has recently produced a number of documents to help the bioassessment community interpret and use this index.

The importance of reference data

In order to create predictive models that set biological expectations, a large, high quality reference data set was required. Most importantly, this data set had to represent major environmental gradients that influence benthic macroinvertebrate distributions in California. To create this data set, more than 20 federal, state, and regional monitoring programs that took place between 1999 and 2011 were inventoried. Starting from a data set of nearly 2000 sites, 590 reference sites were identified using objective criteria such as minimal impacts from low levels of human activity and representativeness of key environmental gradients. Reference criteria are described in Ode et al. (2016), and the Water Board is currently developing tools to help users determine if a new site meets these criteria.



Map of 590 reference sites identified in Ode et al. (2016), and used to develop the CSCI.

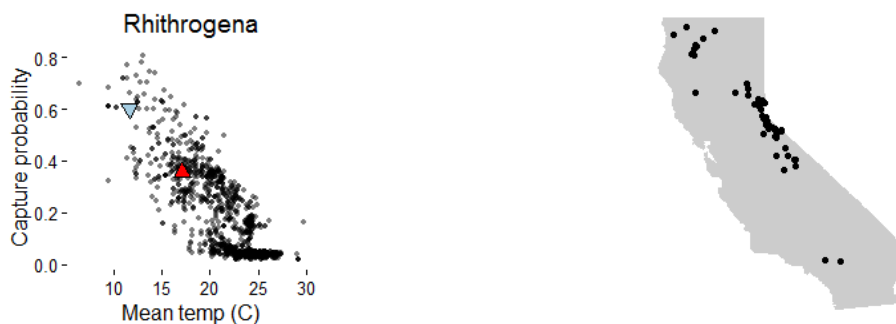
The benefits of predictive modeling

The CSCI incorporates two components that have traditionally been used separately in stream bioassessments: a multimetric index (MMI) that measures ecological structure and function, and an observed-to-expected (O/E) index that measures taxonomic completeness. Each component provides complementary and valuable information about stream condition, and the combined index had better performance than either index alone.

Both components make use of predictive models that set biological expectations based on a site's environmental setting. For example, the O/E index can determine which taxa are more likely to occur at high elevation streams in wet climates, and which taxa are more likely to occur in low elevation streams in dry regions. Because only "immutable" characteristics (i.e., those unlikely to change with increased human activity) are used to define environmental settings at reference sites, the models can tell us what to expect at a site under minimally disturbed conditions, reducing the confounding influence of natural gradients. Deviations from these predictions are interpreted as signs of degradation. Details about how these models were developed are provided in Mazon et al. (2016).

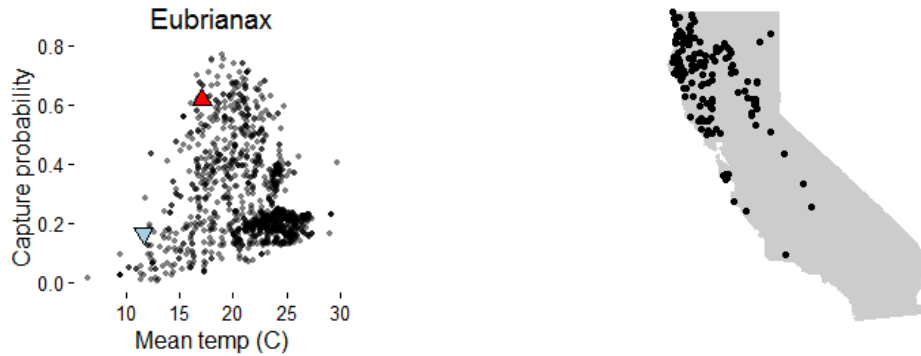
Unique biological expectations

The CSCI predicts which taxa are likely to occur at each site, based on its environmental setting. So, a site on the Winchuk River in Del Norte County might be expected to support the water penny *Eubrianax*, and its absence might reflect degradation. In contrast, this taxon is not likely to occur in the High Sierras, so a tributary to Lake Tahoe, like Eagle Creek; instead, the presence of a taxon such as *Rhithrogena* is used to assess condition here.

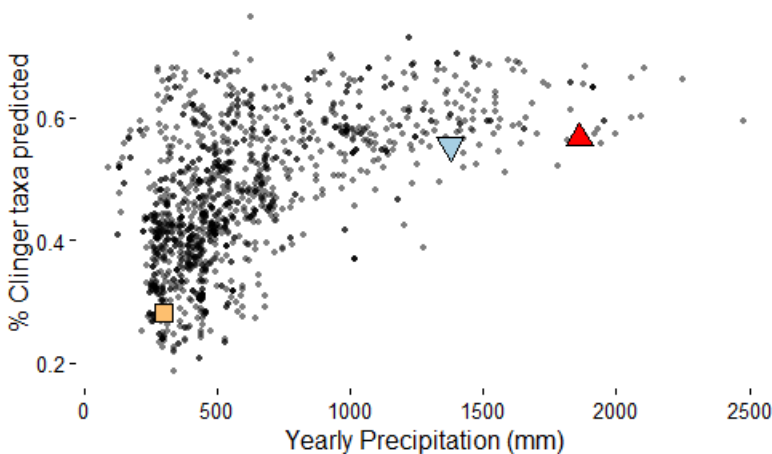


The CSCI models show a strong negative relationship between temperature and the likelihood of observing *Rhithrogena*. Therefore, it is more likely to occur at Eagle Creek in the Tahoe Basin (downward blue triangle) than in the Winchuk River near the coast (upward red triangle). As shown in the map, this taxon is most likely to occur in the coldest, high-elevation parts of the state.





In contrast to *Rhithrogena*, the CSCI models predict that *Eubrianax* prefers warmer temperatures, and are rarely found at cool, high-elevation sites. The likelihood of occurrence is higher at the Winchuk River (upward red triangle) than at Eagle Creek (downward blue triangle). Consequently, this taxon is most likely to occur in the warmer, wetter parts of the state, like the North Coast.



Not only does the CSCI predict the presence of taxa, it also predicts metric values that should occur in each environmental setting under natural conditions. For example, the percent of clinger taxa is positively related to yearly precipitation. Both the Winchuk (upward red triangle) and Eagle Creek (downward blue triangle) sites should be dominated by clinger taxa, whereas only a third of the taxa Escondido Creek near San Diego (orange square) are expected to be clingers.

What does a score mean?

A site in reference condition will typically have a CSCI score of 1. The two components (i.e., the MMI and O/E) will also have an average score of 1 at reference-condition sites. Scores may be higher or lower because of sampling variability and imperfect precision in the models. However, scores substantially lower than 1 are more likely to be due to biological degradation than to natural variability. Although the Water Board has not established objectives to identify degraded sites, Mazor et al. (2016) offer tentative thresholds based on the distribution of scores at reference sites. These thresholds have been used in recent ambient statewide Perennial Stream Assessment (Rehn, 2015), as well as the southern California perennial stream survey of the Stormwater Monitoring Coalition (Mazor, 2015).

Condition	CSCI score	Percentile of reference scores
Likely intact	≥ 0.92	$\geq 30^{\text{th}}$ percentile
Possibly altered	≥ 0.79	$\geq 10^{\text{th}}$ percentile
Likely altered	≥ 0.63	$\geq 1^{\text{st}}$ percentile
Very likely altered	< 0.63	$< 1^{\text{st}}$ percentile

Tentative thresholds used in Mazor et al. (2016)

Resources for the bioassessment community

Many SAFIT members will find the information they need regarding CSCI calculation in the journal articles that describe how the reference data set was created (Ode et al., 2016), or how the CSCI was developed (Mazor et al., 2016), and these articles should be cited in most reports or papers that use the index. Both articles are open access, and may be downloaded directly from the journal, *Freshwater Science*, without a membership or subscription. They are also hosted on the Water Board's web page:

Ode, P.R., A.C. Rehn, R.D. Mazor, K.C. Schiff, E.D. Stein, J.T. May, L.R. Brown, D. Herbst, D. Gillett, K. Lunde, & C.P. Hawkins. 2016. Evaluating the adequacy of a reference-site pool for ecological assessments in environmentally complex regions. *Freshwater Science* 35: 237-248.

http://www.waterboards.ca.gov/water_issues/programs/swamp/bioassessment/docs/ode_ref_site_adequacy_final.pdf

Mazor, R.D., A.C. Rehn, P.R. Ode, M. Engeln, K.C. Schiff, E.D. Stein, D.J. Gillett, D.B. Herbst, & C.P. Hawkins. 2016. Bioassessment in complex environments: Designing an index for consistent meaning in different settings. *Freshwater Science* 35: 249-271.

http://www.waterboards.ca.gov/water_issues/programs/swamp/bioassessment/docs/mazor_bioassess_csci_final.pdf

However, additional resources are available, which may be helpful for communicating with broader audiences. A technical memo summarizes both articles in a single, shorter document, and a two page fact sheet provides the most important features of the CSCI for a general audience.

Technical memo:

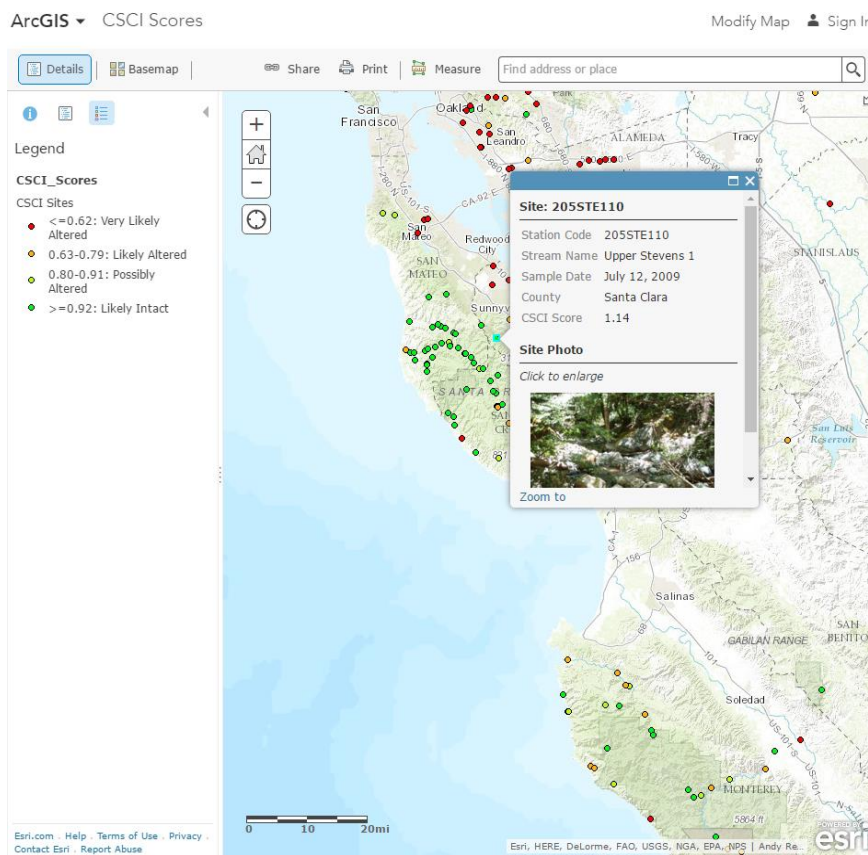
http://www.waterboards.ca.gov/water_issues/programs/swamp/bioassessment/docs/csci_tech_memo.pdf

Fact sheet:

http://www.waterboards.ca.gov/water_issues/programs/swamp/bioassessment/docs/csci_factsheet.pdf

Additionally, the Water Board has published a map with downloadable data showing CSCI scores for all sites that were evaluated as part of index development:

http://www.waterboards.ca.gov/water_issues/programs/swamp/bioassessment/csci_scores_map.shtml



CSCI scores for the 1985 sites used to develop the index may be queried and downloaded from the SWAMP website.

These and other resources may be found on SWAMP's bioassessment program webpage:

http://www.waterboards.ca.gov/water_issues/programs/swamp/bioassessment

Calculating the CSCI

Calculating the CSCI requires some knowledge of ArcGIS (to calculate environmental predictors), as well as the statistical programming language R (to run statistical models and compare observed biology to expectations) at this time. The Water Board has published interim instructions on how to use these programs to calculate CSCI scores:

http://www.waterboards.ca.gov/water_issues/programs/swamp/bioassessment/docs/csci_scoring_instruct.pdf

The Water Board is also developing an online calculator that does not require familiarity with either ArcGIS or R. Expect announcements of future developments in late 2016.

What does a production taxonomist need to know?

The CSCI was designed to use a level of taxonomic resolution similar to SAFIT Level 2, but with Chironomidae identified to subfamily (rather than genus or species). For now, this level of effort is called "SAFIT Level 2a" (to be finalized in an upcoming revision of the STE). To score data identified to Level 1, we recommend identifying midges to subfamily if archived samples are still available. The interim instructions include guidance on how to obtain a range of possible scores if re-identification is not possible.

Getting help

The Water Board offers support for those needing help to calculate or interpret CSCI scores. Please contact Calvin Yang (Calvin.Yang@waterboards.ca.gov) for any assistance. In addition, you can sign up for the CSCI users listserv to receive announcements about updates for the index.

Several trainings in calculating the CSCI have been offered by the Water Board, as well as the Stormwater Monitoring Coalition of southern California. If you are interested in arranging a training event, please contact Calvin Yang.

The role of SAFIT

SAFIT's efforts to improve and standardize taxonomic data quality was essential to creating the robust data sets required for this effort, and most of the data was produced by SAFIT taxonomists. Additionally, several SAFIT members were on the technical team that conducted the analyses, and many others provided technical guidance and "road testing" of preliminary products.

Works Cited

Ode, P.R., A.C. Rehn, R.D. Mazor, K.C. Schiff, E.D. Stein, J.T. May, L.R. Brown, D. Herbst, D. Gillett, K. Lunde, & C.P. Hawkins. 2016. Evaluating the adequacy of a reference-site pool for ecological assessments in environmentally complex regions. *Freshwater Science* 35: 237-248.

Available from:

http://www.waterboards.ca.gov/water_issues/programs/swamp/bioassessment/docs/ode_ref_site_adequacy_final.pdf

Mazor, R.D. 2015. Bioassessment of perennial streams in Southern California: A report on the first 5 years of the Stormwater Monitoring Coalition's regional stream survey. Technical Report #844. Southern California Coastal Water Research Project. Costa Mesa, CA. Available from:

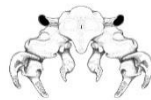
http://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/844_SoCalStrmAssess.pdf

Mazor, R.D., A.C. Rehn, P.R. Ode, M. Engeln, K.C. Schiff, E.D. Stein, D.J. Gillett, D.B. Herbst, & C.P. Hawkins. 2016. Bioassessment in complex environments: Designing an index for consistent meaning in different settings. *Freshwater Science* 35: 249-271. Available from:

http://www.waterboards.ca.gov/water_issues/programs/swamp/bioassessment/docs/mazor_bioassess_csci_final.pdf

Rehn, A.C. 2015. The Perennial Streams Assessment (PSA): An assessment of biological condition using the new California Stream Condition Index (CSCI). SWAMP Management Memo SWAMP-MM-2015-0001. Water Resources Control Board. Sacramento, CA. Available from:

http://www.waterboards.ca.gov/water_issues/programs/swamp/bioassessment/docs/psa_memo_121015.pdf



LATEST LITERATURE

If you know of any recent literature or if you yourself have published any papers of interest to the SAFIT membership, please send copies or the citations to Brady Richards (arichards@csuchico.edu) for inclusion in the next issue of the SAFIT Newsletter. Thanks!!

Asterisk (*) indicates author is a SAFIT member.

Crustacea

Soucek, D. J., E. A. Lazo-Wasem, C. A. Taylor, and K. M. Major. 2015. Description of two new species of *Hyaella* (Amphipoda: Hyaellidae) from eastern North America with a revised key to North American members of the genus. *Journal of Crustacean Biology* 35:814-829.

Plecoptera

Sproul, J. S., D. D. Houston, C. R. Nelson, R. P. Evans, K. A. Crandall, and D. K. Shiozawa. 2015. Climate oscillations, glacial refugia, and dispersal ability: factors influencing the genetic structure of the least salmonfly, *Pteronarcella badia* (Plecoptera), in Western North America. *BMC Evolutionary Biology* 15:279.

Verdone, C. J. and B. C. Kondratieff. 2016. Description of the male terminalia of two western Nearctic Perlodinae (*Pictetiella expansa* (Banks) and *Salmoperla sylvanica* Baumann & Lauck). *Illiesia* 12:1-9.

Megaloptera

*Cover, M. R., J. H. Seo, and V. H. Resh. 2015. Live history, burrowing behavior, and distribution of *Neohermes filicornis* (Megaloptera: Corydalidae), a long-lived aquatic insect in intermittent streams. *Western North American Naturalist* 75:474-490.

Liu, X. and S. L. Winterton. 2016. A new fishfly species (Megaloptera: Corydalidae: *Neohermes* Banks) discovered from North America by a systematic revision, with phylogenetic and biogeographic implications. *Plos One* 11:e0148319.
doi:0148310.0141371/journal.pone.0148319.

Wang, Y., X. Liu, and D. Yang. 2016. The complete mitochondrial genome of a fishfly, *Dysmicohermes ingens* (Chandler) (Megaloptera: Corydalidae: Chauliodinae). *Mitochondrial DNA* 27:1092-1093.

Trichoptera

Givens, D. R. 2015. *Parapsyche* species (Trichoptera: Hydropsychidae: Arctopsychinae) of western North America. *Zootaxa* 4057:451-489.

Kubiak, M., F. Beckmann, and F. Friedrich. 2015. The adult head of the annulipalpi caddisfly *Philopotamus ludificatus* McLachlan, 1878 (Philopotamidae), mouthpart homologies, and implications on the ground plan of Trichoptera. *Arthropod Systematics & Phylogeny* 73:351-384.

Coleoptera

Drotz, M. K., T. Brodin, and A. N. Nilsson. 2015. Changing names with changed address: integrated taxonomy and species delimitation in the Holarctic *Colymbetes paykulli* Group (Coleoptera: Dytiscidae). *Plos One* 10:e0143577.
doi:0143510.0141371/journal.pone.0143577.

Chaboo, C. S. 2015. Beetles (Coleoptera) of Peru: a survey of the families. Part I. Overview. *Journal of the Kansas Entomological Society* 88:135-139.

Chaboo, C. S. and W. D. Shepard. 2015. Beetles (Coleoptera) of Peru: a survey of the families. Clambidae, Eucinetidae, Scirtidae (Scirtoidea). *Journal of the Kansas Entomological Society* 88:208-210.

Chaboo, C. S. and W. D. Shepard. 2015. Beetles (Coleoptera) of Peru: a survey of the families. Dytiscidae, Gyrinidae, Haliplidae, and Noteridae (Suborder Adephaga). *Journal of the Kansas Entomological Society* 88:146-150.

Perkins, P. D. and C. S. Chaboo. 2015. Beetles (Coleoptera) of Peru: a survey of the families. Hydraenidae. *Journal of the Kansas Entomological Society* 88:180-181.

Shepard, W. D. and C. S. Chaboo. 2015. Beetles (Coleoptera) of Peru: a survey of the families. Dryopidae, Limnichidae, Luctrochidae, Psephenidae, and Ptilodactylidae. *Journal of the Kansas Entomological Society* 88:163-166.

Shepard, W. D. and C. S. Chaboo. 2015. Beetles (Coleoptera) of Peru: a survey of the families. Elmidae. *Journal of the Kansas Entomological Society* 88:167-168.

Shepard, W. D. and C. S. Chaboo. 2015. Beetles (Coleoptera) of Peru: a survey of the families. Epimetopidae, Hydrochidae, Hydrophilidae (Hydrophiloidea). *Journal of the Kansas Entomological Society* 88:169-172.

Miscellaneous

Coleman, C. O. 2015. Taxonomy in times of the taxonomic impediment - examples from the community of experts on amphipod crustaceans. *Journal of Crustacean Biology* 35:729-740.

Liu, H.-P., P. Hovingh, and R. Hershler. 2015. Genetic evidence for recent spread of spingsnails (Hydrobiidae: *Pyrgulopsis*) across the Wasatch Divide. *Western North American Naturalist* 75:325-331.

Marchant, R. and T. R. Grant. 2015. The productivity of the macroinvertebrate prey of the platypus in the upper Shoalhaven River, New South Wales. *Marine and Freshwater Research* 66:1128-1137.

THANK YOU FOR YOUR MEMBERSHIP!

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SAFIT Newsletter Publication Guidelines

Submissions and questions about submissions should be directed to the SAFIT Newsletter Editor, at: arichards@csuchico.edu, 530.898.4792. Submissions should be Word files, 12 pt., Times New Roman font, and left justified. Please submit an announcement, as you would like it to appear in the newsletter, preferably in Word format. Images should be high quality.

Deadline for SAFIT newsletter announcements: send to editor one week before publication date.

Issue	Submission Deadline	Publication Date
I	24 March	31 March
II	23 June	30 June
III	23 September	30 September
IV	24 December	31 December

Advertisements:

- Employment Opportunity ads should be one page maximum (8.5 x 11), should list the position(s) available, basic qualifications required, and provide contact information.
- Employment Wanted ads may include a brief statement describing the position sought, basic experience, and contact information. For example: “Looking for work as phytoplankton taxonomic. Experience includes M.S. thesis from the University of Malpractice, and working on several long-term bioassessment projects for the state of East Carolina. Resume and references upon request. Please contact Martin E. Serumgaard, mserumgaard@fakeaddress.net, (555) 555-555.” Do not include *curriculum vitae* or resume, photos, or political statements.
- General Advertisements should be limited to one page (8.5 x 11) and may include a high quality logo image, and must not include political statements or other potentially offensive material.

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