

# in the drift

The NABS Newsletter



## We made it to the second issue!

### What's new?

Well, the first issue of *in the drift* was well-received, and we very much appreciated all of the complementary emails... they definitely motivated us for this second attempt. Truth is, all we do is ask NABS members to contribute newsworthy items then edit them a bit and have fun trying to figure out proper alignment in Publisher software. We think the imperfections add to the appeal, but please don't try to keep track of them all!

At any rate, big thanks go out to all of the folks that who have contributed so far. We can tell that you put a lot of heart into the content – and this vastly improves the quality of the newsletter. Noteworthy in this issue are Tim

Page, Judy Meyer, Jill Lancaster, and Pam Silver (who will provide a JNABS newsbrief each issue).

Along those lines... thus far, all contributions from other NABS members besides ourselves (Deb Finn and Julie Zimmerman) have been solicited directly. What we need now is a reponse(s) to our general cry for help.

You might notice that there is no "benthic cartoonery" section this issue. Why? Well, there are not many good benthic cartoons up for grabs out there. If anyone is an aspiring cartoonist, here's the place to try your hand. Just contact us – either by email (below) or talk to Deb directly at the meeting.

Another call for sugges-

tions: we're entertaining an idea for a summer issue column with the theme "folks with awesome benthic blogs." We now know that Meredith Wright has one of these (so there's no escaping for you, Meredith!) but are unsure of where others may be hidden. Clue us in – drop us an email if you know of one.

Clearly, all other content suggestions are welcome as well.

See you in Salt Lake City!

Contact Deb:  
[finnd@science.oregonstate.edu](mailto:finnd@science.oregonstate.edu)

Don't miss the website...

**benthos.org**

issue 2:

Spring 2008

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**Did you know... ?** (if you didn't, check the Spring Bulletin at [benthos.org](http://benthos.org)!)

(continued on p. 4...)

## Congrats 2008 award winners!

- **Hynes award:** Peter McIntyre, for his PNAS paper *Fish extinctions alter nutrient recycling in tropical freshwaters*
- **Distinguished service award:** Dave Penrose
- **Award of excellence:** Bobbi Peckarsky
- **Environmental stewardship award:** Dave Penrose



Award presentations will follow Jan Stevenson's presidential address on Sunday night at the SLC meeting.

# JNABS article spotlight: Caribbean atyid shrimp promote international collaboration and broad-scale research

Page, Cook, von Rintelen, von Rintelen, and Hughes JNABS 27: 68-83

How do 5 scientists from Australia and Germany end up working together on the distribution and phylogeny of Caribbean shrimp? Simple: take two separate histories of working on the shrimp family Atyidae, widening geographic scopes for both parties, and a fieldtrip with Cathy Pringle to Puerto Rico.



In their recent JNABS paper “Evolutionary relationships of atyid shrimps imply both ancient

Caribbean radiations and common marine dispersals,” Tim Page and coauthors (Page, Cook, and Hughes from Queensland, AUS and the von Rintelens from Berlin) use molecular genetic methods to reveal evolutionary relationships within the freshwater family Atyidae distributed among several Caribbean island and mainland streams.

Page is a strong proponent of the genetic approach to understand animal movement of ecological importance and says that for the difficult task of tracking invertebrates, it is much easier “to sample alleles as they pass through populations than to sample particular individuals that carry them.” Jane Hughes’s group at the Australian Rivers Institute has been developing molecular methods for answering questions in stream ecology for well over a decade and have used a variety of genetic markers to



***It seems that Australian collection permits specifically require beer consumption while dip-netting. Looks like hard work!***

approach a range of questions: from fine-scale movements of individual invertebrates and parentage analyses to broad-scale phylogenetics as in the current study.

Atyid shrimp genetic studies have a history nearly as long as the Hughes lab itself, and their first study of Australian representatives of the group was published in JNABS back in 1995 (vol. 14). Two years later, Hughes published a paper with Stuart Bunn in JNABS that used genetic evidence to propose the “patchy recruitment hypothesis.” It is only fitting that the latest atyid development is in JNABS 2008 (vol. 27).

Caribbean atyids have been studied for years by other NABSsters (e.g. the names Pringle, Covich, and Crowl may ring a few bells) and are known to play key ecological roles in tropical and sub-tropical streams. The Hughes lab began atyid work near home, in subtropical Queensland, while the von Rintelens original atyid genetic work was focused in Sulawesi, Indonesia. Both groups were gradually increasing the geographic scope of their work outward from the original locales in order to place the more local-scale biogeographic and phylogenetic results into a broader context. It made perfect sense to begin collaboration as the two lab groups progressed towards global-scale analyses.

The next step towards the global scale was the Caribbean region. A meeting with Cathy Pringle at the Symposium on Riverine Landscapes in Sweden, with follow-ups at NABS meetings, led to a fieldtrip to Puerto Rico as part of a project to use genetic markers to examine dispersal in both shrimps and crabs (which has yielded 2 recent pubs with Ben Cook as lead author).



***Various Australian atyids recently identified as new species using genetics (photo Dave Wilson, [www.aquagreen.com.au](http://www.aquagreen.com.au))***

The highly collaborative studies on atyids have revealed a wealth of understanding about their evolutionary relationships, including unveiling a host of previously unrecognized cryptic species. The authors intend to continue studying these taxa to unravel ecological differences among the new-found species and to assess potential conservation risks associated with resource development, particularly water transfer among catchments.



***The Hughes lab (including Tim Page, the middle bald guy holding the razor, and Jane Hughes, center back row with bright red hair) raising money for Leukemia research.***

Kudos to these NABS scientists for their collaborative efforts, international scope, and promotion of cutting-edge molecular methods in stream ecology! Let’s keep an eye out for the forthcoming worldwide atyid shrimp bio- and phylogeographic analysis...

## Pam's JNABS corner



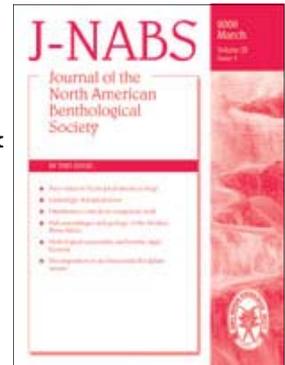
*In the first issue editor Pam Silver told us about electronic access to JNABS. In her "corner", which will appear regularly, Pam will provide additional updates and tips on how best to use the journal. This issue, Pam tells us about how JNABS is "going greener" with the new online manuscript submission and tracking system called "allentrack".*

### Benefits of online submission

- **It's green—save a tree!**
- **Reduced time to publication (by 4 mos!)**
- **Saves money (yours—postage—and for JNABS)**
- **Backs up your data and is accessible anywhere**
- **Provides authors with immediate info about manuscript status**
- **Interfaces directly with Allen Press (for copy editing, typesetting, etc.)**
- **The system remembers who you are—just register once and you're set!**

### How to access the system:

- From the NABS website, click the button for J-NABS, then "Information for Authors," and finally "Manuscript submission and tracking."
- Access directly at <http://j-nabs.allentrack.net>

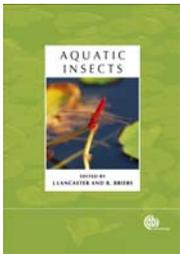


### If you have trouble...

- Pam will provide friendly and patient technical assistance (immediately if she is logged on)
- The login ID and password that you use on the NABS website will not work in AllenTrack. If you are a new user, go to the site, and click "Register here" to get started.
- If file validation takes a long time, do not assume something is wrong. Many journals use this system, and it gets very busy. Take a walk. Eat lunch. Learn patience. Then contact Pam for system persuasion.
- Contact Pam with any feedback or suggestions!

## Royal Entomological Society Symposium on aquatic insect populations results in new book

*Aquatic Insects: Challenges to Populations* was the theme of the 24th International Symposium of Royal Entomological Society, which took place in Edinburgh, UK, in July



2007. The RES symposia occur biennially and, as aquatic insects had not yet featured in any RES symposium, their time had come. Jill Lancaster (University of Edinburgh) and Rob Briers (Napier University) organised the symposium and edited the forthcoming book of proceedings (publication August 2008 by CAB International).

The title reflects the organisers' unashamed biases, but the range of topics encompasses a broad view of populations. The aim was for an integrated view of the challenges facing aquatic insects and to foster links between subject areas that can lead to deeper understanding.

It is easy and comforting to stay within the relatively narrow confines of one's own discipline or area of interest, but the greatest prospect for progress and new ideas often comes through discovering connections between apparently unrelated ideas. Thus, the topics covered by the 15 contributors includes some of the potential influences on individuals and populations (environmental stresses, parasites, cannibalism, dispersal limitations), the "cunning tricks" used by aquatic insects to overcome challenges (polarization vision, life-history strategies, osmoregulation, cold hardiness) and the consequences of those challenges at different levels of organization (distribution patterns, population structure, population genetics, evolution).

It is impossible to cover all challenges to populations in one place, but the wide-ranging topics aim to provide a thought-provoking selection of the possibilities. The topics



*"Edinburgh, from Salisbury Crags," by William Crozier. Reproduced with permission from the National Galleries of Scotland.*

sparked plenty of lively conversation; time will tell whether the written papers spark new ideas and advances. An unexpected but unanimous plea from the symposium participants was for much more research into the basic biology of aquatic insects. This may not seem fashionable, but it is a critical foundation upon which much of our science is based and it appears to be suffering from neglect.

**Thanks to Jill Lancaster for this submission. Let's all buy the book!**

## Current US bill would remove ambiguities from Clean Water Act to restore federal protection of small waterbodies.

*Our own Judy Meyer has been working at the formidable interface between policy and science for the benefit of headwater streams and wetlands. She graciously provided details for this update.*

Historically, the US Clean Water Act (CWA) provided protection for all waters, including the small ones many NABS members like Judy are working to protect. Recent cases before the Supreme Court, however,



have resulted in a decision (see *photo caption at right*) that calls into question the jurisdiction of the CWA over any small stream or wetland that is not obviously “navigable.” In a nutshell, Agency staff now must

prove repeatedly what the scientific literature already supports: that small streams and wetlands are integrally connected with larger rivers (i.e., that the “significant nexus” is the norm).

Impacts of the decision are palpable. For example: a pipe manufacturer in Alabama previously found guilty of dumping oil, lead and zinc into a perennial headwater stream was cleared of any misconduct – on the grounds that a “significant nexus” has not been clearly demonstrated.

The Clean Water Restoration Act (CWRA) has been introduced into

both House (H.R. 2421) and Senate (S.1870) to clarify the ambiguities following the Supreme Court decisions and allows “waters of the U.S.” to include headwaters, intermittent streams and wetlands. A key part of the strategy removes the term “navigable” from the Act’s vocabulary, restoring the historic legacy of federal protection for all waterbodies.

As can be expected, the CWRA has been controversial, and there have been several congressional hearings including testimonies from all sides of the issue. These include Judy Meyer’s House of Representatives testimony in July 2007, in which she outlined the scientific evidence that small, potentially ephemeral waterbodies require protection to achieve the goals of the CWA. She argued that legislation to reaffirm the original intent of the CWA is needed to reunite the law with science.

On the other side have been those with the primary concern that the CWRA would unduly expand federal authority. Idaho’s own Larry Craig purportedly claimed it would result in “a situation where any puddle that can float a legislative brief is now in question.”

*This is a hot topic as we speak.* Both House and Senate committees continue to hold hearings on CWRA, and both are seeking suggestions for compromise, which may include reinserting the term “navigable” into the terminology. This is of some concern, as this term was an initial cause of confusion that resulted in reinterpretation of the



**The US Supreme Court. In 2006, they issued a split-decision regarding the protection of small waterbodies under the CWA: Justice Scalia (bottom row, 2nd from right) said waters must have continuous flow at least seasonally, while Justice Kennedy (bottom row, far left) provided the deciding opinion, that a “significant nexus” to a “navigable” water must exist for a water to be federally protected.**

CWA in the 2006 Supreme Court rulings.

*What role can NABS members play?* At the 2007 meeting, many signed an important letter to Congress outlining the scientific support for the CWRA. Those of us who are US citizens can continue to build support for the bill by contacting our representatives/senators. A current key issue is the potential reintroduction of the term “navigable.” A strong letter from aquatic scientists emphasizing the need to be rid of this ambiguity would be useful. In particular, a letter should emphasize (with citations) the clear nexus between more isolated, small, or ephemeral waters to those that can be

considered “navigable.”

Please go to this url for valuable and timely CWRA details:

[http://transportation.house.gov/Media/File/Full%20Committee/20080416/SSM WR\\_04-16-08.pdf](http://transportation.house.gov/Media/File/Full%20Committee/20080416/SSM_WR_04-16-08.pdf)

### **Did you know... ?** (Spring Bulletin highlights continued from p. 1)

- There is a new plenary format at NABS 2008 in Salt Lake City: the four speakers will distribute among the 8-9am slots Mon-Thurs, rather than speaking back-to-back 8am-noon on Monday. *Hmmm... so the plenary speakers are the only ones among us with an 8am talk...*
- Nominations can now be submitted for 2009 awards, including each of those listed on page 1. Send nominations to Thom Whittier at [whittier.thom@epa.gov](mailto:whittier.thom@epa.gov)
- Anyone who purchased a 4th edition (2007), first printing of “An Introduction to the Aquatic Insects of North America” by Merritt, Cummins, and Berg should see the Bulletin for important information!
- Bulletin editor Ron French will feature your aquatic ecological photo(s) on the front cover. Send them to him and show off your photography skills!