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Papers from IAA 15 are now available to members on CD. See [page 13](#) for more information on obtaining your copy of the symposium proceedings.

UPDATE: Giant Tasmanian “Lobster” (*Astacopsis gouldi*) Habitat Still Vulnerable!



▲ LARGE SPECIMEN OF *ASTACOPSIS GOULDI* FOUND: This photo depicts “Ivan” the 4.55kg (10.0 lb) specimen mentioned in the cover story. Photo ©2006 by Todd Walsh.

As this update is published, the Federal Government is considering the Recovery Plan for *Astacopsis gouldi* that has been signed off by the Tasmanian Government. The Tasmanian Government has not accepted the recommendation of the majority of the Recovery Team to implement 30m buffers on smaller streams in the range of *A. gouldi*. A habitat assessment plan has been put forward instead.

The Government and Forest Industry will use this system, which will take away the need to implement 30m buffers on many smaller waterways. Headwaters are particularly impacted with this form of assessment and I fear that the majority of headwaters will

now be under threat from land clearing and siltation.

Any Class 4 stream above 250m elevation will not get a 30m buffer.

Here is how the Habitat Assessment works:

1. UNSUITABLE HABITAT

- all stream reaches > 400m elevation within catchments known or likely to contain *A. gouldi* as in current range boundary GIS layer (based on current known records and expert opinion). **No change to current prescriptions, Class 4 streams get 10m machinery exclusion zone.**

(Continued on page 3)





Francesca Gherardi,
IAA President

Presidents Corner

Dear IAA members:

This is my last President's corner. My mandate will finish this summer and I am very happy knowing that the board is made up of excellent people that will continue to manage the responsibilities of the society after me. Specifically, **Catherine Souty-Grosset**, our President-elect, is one of the most determinate and effective people I have ever met. She has been able to lead the CRAYNET consortium toward an exceptional success for three years with her hard and devoted work. She is also a very pleasant and sincere friend, who was able to give me help in the most difficult times. And we had some along the way.

I also hope that the Society will nominate **Jim Fetzner** as the new secretary-treasurer. As you all know, it is thanks to him that we have our beautiful webpage. He is also the editor of Crayfish News in its re-styled electronic version. For those who had no chance to read his articles and never met him, I will say only a few words to describe Jim's capabilities as an officer of our Society. Since 2004, Dr. James (Jim) W. Fetzner has been a visiting assistant curator in the section of invertebrate zool-

ogy at the Carnegie Museum of Natural History (Pittsburg, PA, USA). His research interests span from crustacean phylogenetics and systematics to conservation biology and bioinformatics. In 2001, he obtained his PhD in Zoology at Brigham Young University in Provo (UT, USA), with a thesis on "Molecular population genetics and phylogeography of the golden crayfish (*Orconectes luteus*) inferred from mitochondrial 16S gene sequences and hypervariable microsatellite loci". His involvement with crayfish is well documented by the long list of outstanding publications, some of them coauthored with our Past President, **Keith Crandall**.

So, after the end of my term I am sure you will be in very good hands.

Best wishes to you all. ♪

See you soon,
Francesca Gherardi
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The International Association of Astacology (IAA), founded in Hintertal, Austria in 1972, is dedicated to the study, conservation, and wise utilisation of freshwater crayfish. Any individual or firm interested in furthering the study of astacology is eligible for membership. Service to members include a quarterly newsletter, membership directory, bi-annual international symposia and publication of the journal Freshwater Crayfish.

Secretariat:

The International Association of Astacology has a permanent secretariat managed by **Bill Daniels**. Address: IAA Secretariat, Room 123, Swingle Hall, Department of Fisheries and Allied Aquacultures, Auburn University, AL 36849-5419, USA.

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Statements and opinions expressed in Crayfish News are not necessarily those of the International Association of Astacology

This issue edited by James W. Fetzner Jr.



(Continued from page 1)

This excludes almost all headwaters from getting 30m buffers.

2. HIGH SUITABILITY (i.e., relatively undisturbed low-land perennial streams with coarse substrates) **30m streamside reserves on class 4 streams**

- stream classes 1 & 2 and 3, and stream class 4 in geomorphic contact zones (exact definition to be provided); with:
 - a. < **250m elevation**; and
 - b. drainage section average slope < 10%; and
 - c. geomorphic mosaics that represent optimal meso-habitat (i.e., boulders & coarse substrates - exact classes to be provided) and snags; and
 - d. riparian forest in relatively good condition (i.e. drainage section CFEV ripveg index >0.8)

This means almost no Class 4 streams get larger buffers, therefore preserving the status quo, which is certainly what Forestry wants.

Class 4 Streams will mostly fall into the Medium or the Low Suitability or Unsuitable Habitat

3. MEDIUM SUITABILITY

- stream classes 1, 2 & 3, and class 4 streams in geomorphic contact zones, (i.e., perennial streams):
 - with 250-400m elevation; and
 - that meet all the slope, mosaic and riparian forest rule conditions for High Suitability (b-d above); or
- stream reaches < 250 m elevation that:
 - only meet one of the slope or mosaic conditions for High Suitability (b-c above) and
 - have riparian vegetation in good condition (i.e. of CFEV ripveg index > 0.8); or they meet both mosaic and slope conditions for High Suitability (b-c above) and riparian vegetation is not in good condition (i.e., CFEV ripveg index < 0.8).

No change to current prescriptions, Class 4 streams get 10m machinery exclusion zone.

4. LOW SUITABILITY

- stream classes 1, 2 & 3, and class 4 streams in geomorphic contact zones, that have poor condition riparian forest (i.e., CFEV ripveg index < 0.2); or
- all remaining class 4 streams (i.e., not in geomorphic contact zones); or

- all remaining streams of 250 – 400 m elevation (i.e., those that fail one or more of the High Suitability rule conditions for mosaics, slope or riparian vegetation). **No change to current prescriptions, Class 4 streams get 10m machinery exclusion zone.**

Classification of Water Class (Forestry Tasmania).

- Class 1. Rivers, lakes, artificial storages (other than farm dams) and tidal waters (1) - generally those named on 1:100,000 topographical series maps.
- Class 2. Creeks, streams and other watercourses from the point where their catchment exceeds 100 ha.
- Class 3. Watercourses carrying running water most of the year between the points where their catchment is from 50 to 100 ha.
- Class 4. All other watercourses carrying water for part or all of the year for most years.

No less than 2 Federal Ministers have called on the State Government to implement 30m buffers on all class 4 streams, the ball is now in their court. It is by no means certain that they themselves will implement what they have asked of the State government. That unfortunately is politics.

On a much more positive note, I recently captured a large specimen. I've sent the pictures through so we can all see that there are still massive specimens out there in the wild. Its important to note that this specimen was captured downstream from protected headwaters and was captured above 250 m altitude. Weight 4.550 kg (10.01 LB), CPL 218 mm, claw 215 mm, total length 750 mm. ♀

Editor's Note: An online petition was started in June 2005 to help save this unique crayfish. If you would like to sign the petition, please see <http://iz.carnegiemnh.org/crayfish/IAA/petition.asp>

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"Ivan" in the wild. Photo ©2006 by Todd Walsh.



One More Record of *Cherax quadricarinatus* in Mexico

The introduction of *Cherax quadricarinatus* into Mexico means a potentially serious problem of crayfish plague, which greatly outweighs any positive aspects related to the culture and commercialization of this species. Although its introduction in the northern part of the country was initially controlled, the species has already colonized natural water bodies to the detriment of native aquatic species including; vegetation, fishes, crayfishes and other invertebrates. Similar damage has been seen in the central and more recently in the southeastern portions of the country (Yucatán Peninsula).

An example of this is what is happening in Morelos State, where about 4 years ago *C. quadricarinatus* was introduced for culture in multiple locations of both Yautepec and Tlaltizapan. An important part of the economy of the state is the large influence of both national and foreign visitors. Since weather in the region is warm, the rivers and public swimming pools in the northeastern and southeastern parts of the state are some of the main attractions. The promises of increased tourism and economic growth were the main justifications used by farmers to culture *Cherax*, even though there was no previous experience in Yautepec culturing this species. Interestingly, farmers have also used improvised pools (where people actually swim) inside the Santa Isabel public swimming pool in Tlaltizapan. However, neither controlled culture nor commercialization of the species ended up being fruitful.

Some time later, a torrential rainfall in that region resulted in flooding of the Yautepec River, which mainly affected the bordering regions of Yautepec, Temilpa Viejo and Tlaltizapan. The pools where the culture of *Cherax* was improvised ended up overflowing into the nearby rivers, and particularly into an irrigation canal which connects four different regions (Tlaltizapan, Zacatepec, Tequesquitengo and Tehuixtla). This allowed the species to disperse throughout a total of five tributaries of the Amacuzac River, including Tequesquitengo Lake, all the way to the southeastern limits of Morelos State.

The consequences of this release are quite terrible. The extraordinary ability of *C. quadricarinatus* to adapt to a new environment has permitted its reproductive success in the wild, with adults often reaching large sizes (about 30 cm). This adaptive ability has aided its relatively fast dispersal throughout the Amacuzac River. This species is adversely affecting many native species of the region, counting among them aquatic vegetation, fishes, one freshwater crab species and presumably a native crayfish species of

the genus *Cambarellus*. Although the invasion of *Cherax* into tributaries of the Amacuzac River has promoted local fishing and both commercial and self-consumption, these can only partially control the spread of the population, but unfortunately not to the extent to avoid its spreading into the Balsas River. This river is an important hydrological region that connects eight states in central Mexico (Morelos, Guerrero, Oaxaca, Puebla, Tlaxcala, Mexico, Michoacán and Jalisco), implying that there is a huge potential for damage to native species in the entire region.

The controlled culture and commercialization of *C. quadricarinatus* in Morelos State failed due to the lack of experience in the culture of this kind of organism, and the evident ignorance about its biology, adaptive capacity, and unfavorable consequences to the endemic aquatic fauna and the trophic dynamics of the environment. The introduction of *Cherax quadricarinatus* (and associated plague) into Mexico, and particularly into Morelos State, is a consequence of bad decisions and planning that require immediate action, if not to eradicate it, to at least control it to avoid ecological damage at a grand scale. To prohibit introduction of this species into other states of the country is probably the first step. †

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Updates on the distribution of the white-clawed and the narrow-clawed crayfish in Croatia

By Ivana Maguire, Goran Klobučar, Matej Faller, Yoi-chi Machino, Mladen Kučinić and Mario Žužul

A field study was conducted in the autumn of 2004 on the water bodies belonging to the Adriatic Sea basin in the southernmost region of Croatia. Water bodies included in the research were the Ljuta River, Modro oko (limnocrenic source), Baćinska Lakes, the Cetina River and its tributaries (Ruda and Source Jezero), the Vrljika River and its tributaries, and the Prološko Blato Lake. Unexpectedly, we found no crayfish in the Ljuta River and Modro oko. These are the waters where until recently (Maguire & Gottstein, 2004) white-clawed crayfish were abundant. According to the local inhabitants, disappearances occurred during the summer of 2004, and the reason for this disappearance is unknown. *Astacus astacus* was caught in the Ruda River, while *Austropotamo-*

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bis pallipes was found in the Source Jezero. The Prološko Blato Lake was abundant with *A. pallipes*, the same as the stream in the Badnjevice Canyon. In a side canal of the Vrljika River we caught *A. pallipes* and *Austropotamobius torrentium*. This was our first finding of *A. torrentium* in water bodies belonging to the Adriatic Sea Basin, and it is more than likely the consequence of introductions made by local inhabitants. Since they have used crayfish as food for centuries, they tend to transfer different species from one water body to another, frequently from Bosnia and Herzegovina. Unfortunately, this is usually done without any records and knowledge on which species was used. As such, it is now almost impossible to reconstruct the original pattern of crayfish distributions within this region.

The field study that was conducted in the spring of 2005 on the rivers Dobra and Mrežnica showed that *Astacus leptodactylus* lives there. Until recently its presence was recorded further east, within the Sava River and the Kupa River (Maguire & Gottstein, 2004). According to the historical data (Enz, 1914; Karaman, 1961, 1962) *A. torrentium* lived in the Dobra River, while in the Kupa River Karaman (1961, 1962) described *A. astacus* and Povž et al. (1998) *A. torrentium*. Our findings support the theory that the narrow-clawed crayfish is spreading from the east to the west (and south) of Croatia. ♀

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Color Variation in *Procambarus clarkii*

Whether on purpose, or by accident, the red swamp crayfish (*Procambarus clarkii*) has been introduced, or is currently being introduced, into lakes, rivers, and streams all over the world. Many of these introductions are due to its popularity in the aquaculture industry.



The Red Swamp Crayfish, *Procambarus clarkii*, should be considered a worldwide species. Picture taken by Enrique Aniceto. Biology Department. CSUN. California.

Do not let the picture above misguide you. It is a juvenile red swamp crayfish. Why is it blue? There is not much study on crayfish "color change" in general, but most especially on color change due to different dietary regimes. The crayfish depicted in the photograph turned blue after being fed mainly on bird seeds since it was young. It is thought that crayfish need to eat "green" stuff, plants that is, to obtain and keep their coloration. Whatever it is, most crayfish keepers will notice that molt after molt, crayfish will lose their original coloration when exposed to a different environment, especially conditions like those found in laboratory aquaria. ♀

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Panama City Crayfish—Status Assessment

The Panama City Field Office (FL, USA) is working with the Florida State Fish and Wildlife Conservation Commission (FFWCC) and Bay County private landowners to protect the Panama City Crayfish, a species that exists only in a small area of Bay County, Florida. The crayfish is listed as a species of special concern and protected by the state of Florida, though not by the federal government. Land development is the primary cause of the species decline. Since much of the crayfish's natural habitat no longer exists, it is necessary to conserve the remaining habitat.

After a meeting with stakeholders it was decided that some landowners were interested in pursuing a Candidate Conservation Agreement with Assurances (CCAA). This agreement will describe best practices for conservation and protect private landowners' voluntary efforts to preserve the existing crayfish habitat. Documentation of these practices could eliminate the need to list the Panama City crayfish under the Federal Endangered Species Act.



Procambarus (Leonticambarus) econfinae, a Florida species of special concern.

This species will also undergo a Biological Status Assessment this year by the FFWCC. ♣

Still on time: Can we recover the white-clawed crayfish in Spain?

The Spanish populations of white-clawed crayfish have strongly declined during the last three decades. *Austropotamobius pallipes* was once widely distributed and very abundant throughout the country, excepting the acidic western areas, the highest mountain ranges and the sub-desert areas in the Southeast and River Ebro valley. At present the Iberian Peninsula is probably the most severely affected regression area of Europe, with a current trend of extinction ranging from 30% to 50% every five years (Alonso *et al.*, 2000), and only around 500-600 small populations left (Alonso, 2004).

This species complex is now protected both under national and international legislation, being included as a vulnerable species in the IUCN Red List of Threatened Animals, and requiring special conservation measures according to European Habitats Directives (92/43/EEC and 94/62/EU). In this context, recovery plans are being drafted by some regional authorities.

Knowledge of the levels and patterns of distribution of genetic variability in populations from a threatened species is critical for decisions about its conservation. One of the major roles of conservation is to preserve genetic variability in such species.

With this objective we have conducted a comprehensive study in order to assess the genetic structure of populations of *Austropotamobius pallipes* and their phylogenetic relationships throughout the en-

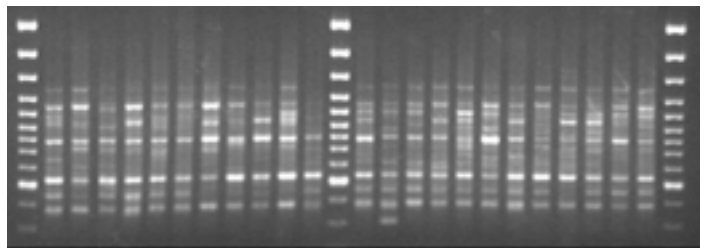


Figure 1. RAPD profiles of the *A. pallipes* analyzed with primer Ao6 (Operon). Lanes 1, 13 and 26 contain a 100 bp ladder molecular weight.

tire distribution range of the species in Spain, including all the major hydrographic basins where the species is still present, as well as the major crayfish farm currently providing individual for reintroduction programs. The Random Amplified Polymorphic DNA technique purpose (RAPD-PCR) was used for this. Reactions were performed under strict standard conditions, repeating each reaction at least twice. This resulted in consistently reproducible amplifications.

In a first approach, this survey revealed polymorphism values between 8% and 24%. The mean polymorphism for the 11 populations studied was 0.15. The lower value of polymorphism was found in an Andalusian population (8%), living in the southern limit of the actual distribution of the species, whereas a moderate variability was observed in the crayfish farm population (17%). RAPD markers showed levels of

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genetic variability to be similar and in some cases slightly higher to those found by others authors in some Spanish and other European populations of *A. pallipes* analysed by different markers (Santucci *et al.*, 1997; Grandjean *et al.*, 2000; Trontelj *et al.*, 2005)

The results from the present study indicated that RAPD-PCR constitutes a sensitive technique for detecting genetic variability in Spanish populations of the threatened white-clawed crayfish. DNA sequences targeted by the RAPD technique, mostly non-coding sequences, evolve more quickly than other ones. Finally, the results showed that we are still in time for the recovery of this threatened species in Spain. ♀

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Dr. David Gray (left in the picture) teaches Behavioral Ecology at California State University, Northridge. Last fall (2005), Dr. Gray and his graduate assistant *Enrique Aniceto* (right in the picture) took the class for a fieldtrip to Malibu Creek, California where *Procambarus clarkii* was introduced more than thirty years ago. Enrique is studying allometry and agonistic behavior in crayfish. He is looking for changes, if any, in ecological time.

(Continued from page 13)

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New Books & Multimedia

Krebse im Aquarium: Haltung und Pflege im Süßwasser

Authors: Chris Lukhaup & Reinhard Pekny

Where to Order: we@daehne.de

Language: German

ISBN: 3935175310

160 Pages, 220 pictures,

Price: 24,80 €

Ordering number : 3-935175-31-0

This book covers topics about how to keep crayfish in an aquarium and a lot of information about crayfish diseases, reproduction, and behavior, etc. 🦞

Süßwasserkrebse - Biotope und Lebensgemeinschaften im Südosten der USA

English Title: Crayfish - Biotope and Habitats in the Southeastern United States

Authors: Lutz Döring, Lutz Gohr, Friedrich Bitter (narrator)

System: DVD-Video/PAL (should be no problem on computers, on TV it will be checked soon)

Format: 16:9 wide screen, Dolby Surround 5.1, stereo

Language: German

Menus: German, English, French, Spanish

Subtitles: German, English, French, Spanish

Run time: 62 minutes plus outtakes (only German or no comment)

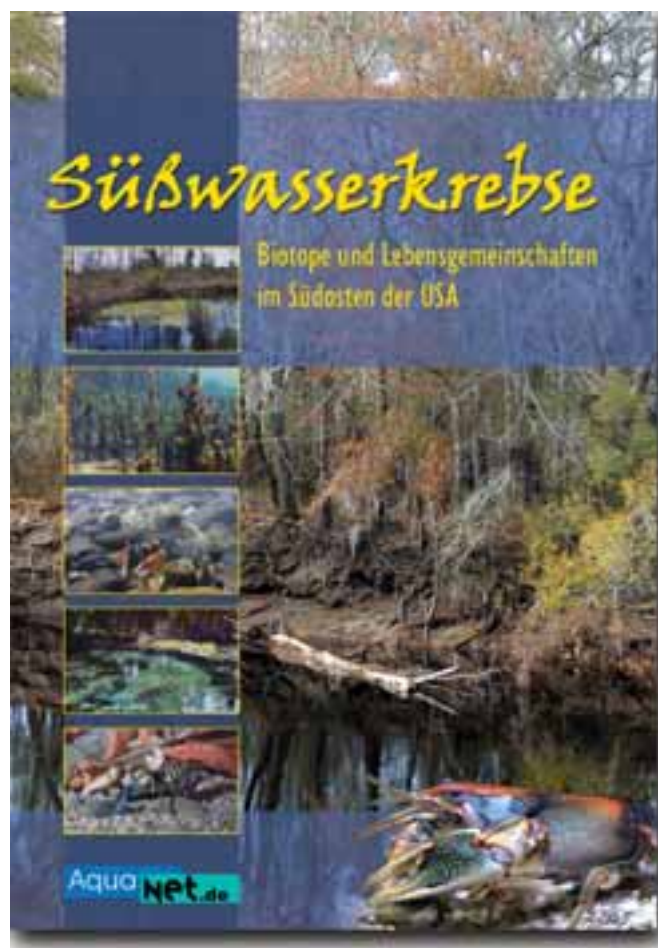
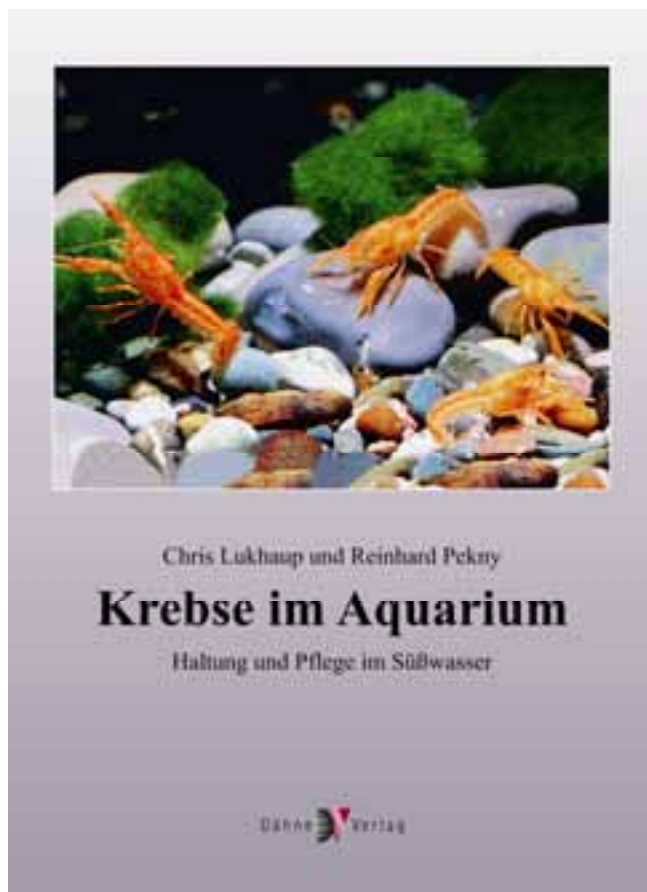
Price: 14,50 €

The DVD can be obtained via regular postal mail from Lutz Döring (ld@aquanet.de), freight rates will be calculated at time of purchase.

The video is about different water types in the southeastern US, showing several *Orconectes* and *Cambarus* species like *C. speciosus*, *C. manning*, *C. rusticiformis*, *O. durelli* etc. in their natural habitat. Sunfish, shiner and darters complete the underwater pictures of the large variety of the other species living with the crayfish.

Pictures of aquarium maintenance, fry and molting of *Cambarus reduncus* completes the video for the crayfish enthusiasts.

A short trailer is available at the bottom of the following website: <http://www.aquanet.de/shop/krebse-dvd-krebse.asp> 🦞



Aquaculture in the 21st Century

Anita M. Kelly and Jeffrey Silverstein, editors

643 pages

Published by: American Fisheries Society

Publication date: January 2006

Stock #540.46P; ISBN 1-888569-71-9

AFS Members: \$48.00, plus shipping and handling

List: \$69.00, plus shipping and handling

Book Summary:

Aquaculture in the 21st Century is the second volume in the Manual of Fish Culture series. This volume provides the detail and utility for the culture of aquatic organisms that made the first volume indispensable to culturists. Additionally, historical and background material are provided for each of the 26 species covered, which makes this book useful to those more generally interested in aquaculture and the development of aquaculture. The extent of the material provided makes it not only a valuable reference tool, but an excellent resource for aquaculture courses.

As aquaculture continues to expand rapidly into the marine environment, this book has included many marine species that are relative newcomers to the aquaculture stage. Additionally, groups that have come to support large aquaculture industries such as catfish and hybrid striped bass that were not covered in the first volume are covered here.

To Order:

Online: See the following website to place the item in your shopping cart.

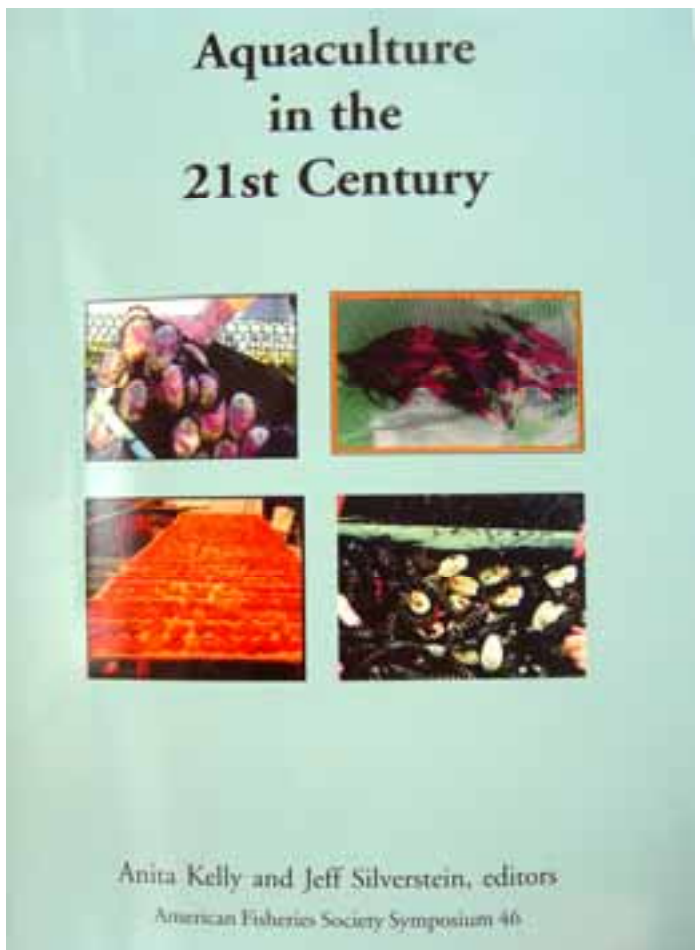
<http://www.fisheries.org/html/publications/catbooks/x54046.shtml>

Phone or Fax: Call the American Fisheries Society Publication Fulfillment at (678) 366-1411, or Fax (770) 442-9742.

Email: afspubs@pbd.com

Two chapters in this book are devoted to crayfish aquaculture and are submissions by IAA members.

The chapter entitled "*Crayfish Culture in Forage-Based Production Systems*" by **W. Ray McClain** (19 pp) provides a brief overview of the status and production methodology for the commercial industry of procambarid crayfish in the southeastern United States,



which is based largely on a forage-based strategy of production. This chapter, replete with photos, is composed of the following sections: introduction, description of species, historical overview, regulations and permitting, crayfish culture (including crayfish life cycle, production systems, population dynamics, nutrition, forage management, water management, harvesting, and diseases and predators subsections), postharvest practices and markets, and outlook.

The other crayfish chapter entitled "*Management Practices for Production of the Red Swamp Crayfish in Earthen Ponds without Planted Forages*" by **Louis R. D'Abramo** and **Cortney L. Ohs** (8 pp) establishes recommendations for the culture of crayfish without planted forages, based on recent research. This chapter contains the following sections (and subsections): historical overview (introduction, the alternative – no planted forage), culture methods (pond design, initial stocking), feeds and feeding strategies, water quality, predators (invasion of production ponds by fish, bird depredation), harvest (trap, seine), expected annual yields (substrate), processing, the future (characteristics and needs, economics), and summary of recommendations. ♣



Proposal to Make Crayfish the Official Missouri State Invertebrate

Crayfish have entered the world of politics in the U.S. state of Missouri. There is proposed legislation currently moving through the Missouri state legislature that, if enacted, will designate crayfish as the official state invertebrate.

A public school teacher and her 5th grade students (11 year old children) initiated the proposal as a class project to combine learning about invertebrates and the political process. The class contacted IAA member **Bob DiStefano** for technical information about crayfish when they were attempting to decide which invertebrate group to study. Bob met his IAA obligations by providing the class with strong arguments for the importance of crayfish to Missouri ecosystems and its citizens. The teacher and her class were convinced by this information, and then contacted their local political representative.

The proposed legislation is now an official "bill" and will receive an official hearing in mid-March. If the bill is signed into law, it will probably not result in any significant changes with regard to how crayfish are managed in Missouri. The "official state invertebrate" title would largely be symbolic. However, it is likely that it will result in somewhat higher visibility for our favorite creature. Bob promises to provide an update in a future edition of *Crayfish News*. 🦞

Bob DiStefano
Missouri Department of Conservation

Crawfish crop on low boil

Hurricane Rita got this year's Louisiana crawfish season off to a bad start. But the industry says recent warmer and wetter weather have put the crop on somewhat of a rebound.

More crawfish translates into lower consumer prices. It also allows producers to offer larger crawfish instead of having to meet demand by using smaller crawfish that would normally be culled for the tail-meat market.

Because of salt water pushed in by Rita, the current season originally was projected to be pretty much of a loss. But now, estimates put this season's crop at 30 percent or 40 percent off last season's catch. 🦞

£100,000 battle against alien crayfish ends in defeat

Experts have admitted defeat in the battle to eradicate one of the most destructive alien species to

have colonized Scotland. The signal crayfish (*Pacifastacus leniusculus*), a voracious and highly aggressive species, is destroying the ecology of at least a dozen rivers. Their ability to burrow into a sandy riverbank also causes dramatic acceleration of the natural erosion process.

Scottish Natural Heritage (SNH) has spent more than £100,000 trying to kill the American signal crayfish, with no significant impact on the fast-growing populations of the species. Now officials have admitted that they are close to giving up all hope of eliminating the crustacean in Scottish waters.

"You can't keep throwing money at something when it is not going to work," said Colin Bean, freshwater policy officer at the Scottish Executive's statutory adviser on the environment.

"We have tried trapping and electro-fishing and even chemical control.

"The problem is that crayfish can burrow up to two meters into the bank and if you miss any of them it only takes one or two to survive and then you are back to square one.

"It gets to the point where you start asking what else is left to do."

Signals were first brought over to Britain for their meat, as they can grow up to 11 inches bigger than native crayfish, which are seldom more than an inch in length.

In the 1970s, the first non-native crayfish were released into the wild and quickly became the dominant predatory species in many English and Scottish rivers, aided by their ability to carry a disease called crayfish plague which leaves signals unharmed but which kills their native cousins. SNH believes it can no longer fund eradication projects in rivers such as the Clyde, where anglers have managed to trap and kill more than 70,000 signals since they were first discovered there in 1999.

With each female able to lay at least 300 eggs, the signals still managed to breed faster than the fishermen can kill them.

However, Matt Mitchell, chair of the United Clyde Anglers Protective Association – which runs the project – said their efforts had stopped the crayfish spreading further. He remained convinced of the need to continue the work, even if they could not be removed completely.

"We found the first one about eight years ago and we have not stopped since. We have just tried to get rid of as many as possible and have averaged about 10,000 a year."

Part of the reason for the speedy expansion of

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signal colonies is their ability to breed prolifically and their extreme hardiness – signals have been known to freeze solid within an icy pond, only to thaw out and survive once the weather improved.

However, humans are also responsible. Many crayfish are deliberately and illegally released for later harvesting and sale to the restaurant trade.

Where they lurk

Signal crayfish have been found in the following water catchments. River/stream sites: Kirkcudbright Dee (Water of Ken), Fleet (Skyre burn) (Gatehouse of Fleet), Upper Clyde (Elvanfoot), Tweed (Ettrick Water) (Selkirk), Tay (River Earn) (Crieff), Nairn (Nairn) and two sites in Fife (near Kirkcaldy & Cupar) Pond sites: East Lothian Tyne (Haddington), North Esk (Laurencekirk). ♣

Article by VICKY COLLINS
Environment Correspondent
The Herald, UK - Mar 12, 2006

Study Discovers Crayfish Thriving

The white-clawed crayfish is Britain's only native crayfish. An endangered crayfish is now thriving in part of north-east England, two years after thousands were wiped out by mystery pollution. More than 30,000 white-clawed crayfish from the Hart Burn in Northumberland, are believed to have died in May 2004.

A survey by the Environment Agency found populations in parts of the North East are not only increasing but are of global importance. The strongest population is in the River Wansbeck, fed by the Hart Burn. The survey was carried out in Autumn 2005 by **Prof David Rogers** and looked at the native white-clawed and American signal crayfish at more than 100 sites across Northumberland and Teesdale.

He said: "The results of the survey are very exciting because we found such a large population and the habitat is so good.

"These findings prove the area is of major international importance for native crayfish and should be given additional legal protection.

"The River Wansbeck provides an unusually good crayfish habitat because it has long stretches of large stones deep into the riverbed, which provide crayfish with a perfect refuge from predators."

The white-clawed crayfish is at risk from loss of habitat and pollution as well as the plague carried by its bigger cousin, the American signal crayfish. ♣

Story from BBC NEWS, Published: 2006/02/10

Meetings and Workshops

International Workshop "Chemical ecology in aquatic systems", Florence (Italy), October 16-18, 2006

An increasing interest is directed today to the understanding of the role of chemical communication in aquatic systems. It seems axiomatic that, in aquatic organisms, the use of vision may be reduced by high habitat complexity and poor light transmission, especially in turbid waters. Chemical communication may aid the location of prey, predators, food, and partners and may be used in kin recognition. Also, waterborne chemicals are important for navigation among long-distance migrating organisms, such as salmonids. Finally, the use of chemicals, e.g. sexual pheromones, may facilitate the control of the several nuisance species that have invaded natural water bodies throughout the world.

Notwithstanding the flood of studies centered on several aspects of chemical ecology, there is still a general lack of theories explaining mechanisms of action and functioning of chemical substances in the aquatic medium. The international workshop "Chemical ecology in aquatic systems" aims at assessing the state-of-the-art of our knowledge in this area, stimulate discussion, and identify future research directions and collaborations. This workshop will be held in Florence (Italy) between 16 and 18 October, 2006 under the auspices of the University of Florence. It will gather scientists from all over the world working within different disciplines that range from ethology and sensory physiology to conservation biology.

For those scientists intending to attend the Workshop and to present papers and/or posters, please contact the organizers (**Roberto Berti** or **Francesca Gherardi**) via e-mail at the address: roberto.berti@unifi.it as soon as possible before June 30, 2006. Pre-registrations would greatly help in the early planning stage. Deadline for registration and abstract submission is July 31, 2006. More information will be soon available in the website <http://www.dbag.unifi.it> (under Eventi). ♣

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*Crayfish experts from around the world will gather at the
16th Symposium of the
International Association of Astacology*

July 30th – 4th August 2006

Surfers Paradise The Gold Coast, Queensland, Australia

Sunday 30 th July	Registration, welcome barbeque and drinks The Courtyard Marriott, Surfers Paradise
Monday 31 st July	Lectures and posters The Courtyard Marriott, Surfers Paradise
Tuesday 1 st August	Lectures and posters The Courtyard Marriott, Surfers Paradise
Wednesday 2 nd August	Symposium day-trip – “The Mountain Rainforests” A very special part of the world...
Thursday 3 rd August	Lectures and posters, Symposium banquet in the evening The Courtyard Marriott, Surfers Paradise
Friday 4 th August	Lectures and the meeting finalises in the afternoon The Courtyard Marriott, Surfers Paradise

The symposium is open to everyone. For further details, to submit abstracts and register please visit the symposium website: <http://www.griffith.edu.au/conference/iaa2006/>

IAA 16 is being hosted and supported by:



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Freshwater Crayfish 15 Released !!

Note from David Rogers and Elizabeth Watson, Organizers of IAA 15. We are pleased to have completed the editing of Freshwater Crayfish 15 and have sent CD disc copies to all participants. We are not producing a printed hard copy book, but have handed the copyright of the Proceedings to the IAA and we hope that it is put on the website soon. Our thanks to everyone who participated in IAA 15; we hope that you find the Proceedings interesting and useful. The Freshwater Crayfish 15 discs were produced with the latest version of Adobe Acrobat, so members may have difficulty opening files if they do not have the latest Adobe Reader software (free from the Adobe website). Please visit <http://www.adobe.com/> to get the latest version. ♪

Online Crayfish News Archives Expanded !!

Back issues of Crayfish News, volumes 10 thru 19, are now available online in the members-only portion of the IAA website. A big **Thank You** to members **Paula Henttonen** and **Ossi V. Lindqvist** for loaning their copies of these volumes. We are still looking for volumes 1 thru 9, 18(3), 18(4), and 22(1). If you have originals of these volumes and would be willing to lend them for a short period of time for scanning, please contact member **Jim Fetzner** via e-mail at FetznerJ@CarnegieMNH.Org. ♪

PLEASE NOTE: Dues for the 2006-2008 membership period should be submitted by April 1, 2006. Payment can be made either to the IAA Secretariat or the European or Australian offices, whichever is most convenient to members. If you are planning on attending IAA 16 in Australia this August, dues must be paid before the conference to get membership rates. See the membership renewal form attached to this issue of *Crayfish News*, or visit the IAA website for more information. ♪

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