

# 2<sup>nd</sup> International Seminar Rearing of unionoid mussels

Clervaux, Luxembourg, Tuesday 24<sup>th</sup> November – Friday 27<sup>th</sup>  
November 2015



4<sup>th</sup> announcement

*Restoration of *Unio crassus* rivers in the Luxemburgish Ardennes  
LIFE11 NAT/LU/857*



LE GOUVERNEMENT  
DU GRAND-DUCHÉ DE LUXEMBOURG  
Ministère du Développement durable  
et des Infrastructures  
Département de l'environnement



LE GOUVERNEMENT  
DU GRAND-DUCHÉ DE LUXEMBOURG  
Ministère de l'Agriculture,  
de la Viticulture et de la  
Protection des consommateurs



CHAMBRE  
D'AGRICULTURE  
LUXEMBOURG

Dear colleagues,

It is a great pleasure to announce our 2<sup>nd</sup> international seminar about the rearing of unionoid mussels. After a first successful seminar in 2008 in Heinerscheid/Luxembourg we would like to meet again to discuss the progress in the field of freshwater mussel culture in November 2015 in Clervaux/Luxembourg.

Freshwater mussels are one of the most imperiled taxonomic groups worldwide and many species are close to becoming extinct due to the pollution, degeneration and destruction of their habitats. To save these populations on the long run, the only possible way is by habitat restoration. Habitat restoration, however, is taking time and will not be completed before many local populations have become lost. One possibility to save the genetic diversity of many of these autochthonous populations could be to artificially breed young mussels to enhance the populations and pass the time until the restoration has been completed.

The aim of this seminar is thus to bring all experts working on the rearing of unionoid mussels, as well as people interested in this subject, together and to discuss the latest progress in this field. The exchange of knowledge and experience might help to improve and elaborate the rearing methods and hence save some species and populations from becoming extinct.

The local organisation team would be glad to welcome all of you in November 2015 in the north of Luxembourg.

## **Seminar Program**

### **Tuesday, 24 November 2015**

19:30 Welcome Reception + Registration at the Centre Culturel Château, Castle Clervaux

Greeting Words from the Mayor of the City Clervaux



**Wednesday, 25 November 2015**

08:00-09:00	Registration at the Centre Culturel Château, Castle Clervaux	
09:00-09:30		Opening and Greetings
<b>Session I</b>		
09:30-10:00	Jürgen Geist	<i>Aquatic Systems Biology Unit, Technical University of Munich, Germany</i>  <b>Supportive breeding of freshwater mussels: Aspects to consider from a conservation biology viewpoint</b>
10:00-10:20	Mariana Hinzmann. et al.	<i>ICBAS- UP—Abel Salazar Biomedical Sciences Institute, University of Porto, Porto, Portugal &amp; CIIMAR—Centre of Marine and Environmental Research, University of Porto, Porto, Portugal</i>  <b>Reproductive Cycle and Glochidia Maturation of Unionidae species from North of Portugal</b>
10:20-10:40	Jouni Taskinen et al.	<i>Department of Biological and Environmental Science, University of Jyväskylä, P.O. Box 35, 40014 Univ. Jyväskylä, Finland</i>  <b>Seasonal glochidium attachment/detachment cycle of <i>Margaritifera margaritifera</i></b>
10:40-11:10	Coffee break	
11:10-11:30	Janhavi Marwaha et al.	<i>University of Bergen, Department of Biology, Thormøhlensgt. 53 A/B, 5020 Bergen, Norway</i>  <b>Prolonged time on gills benefits individual juvenile freshwater pearl mussels (<i>Margaritifera margaritifera</i>)</b>
11:30-11:50	Karel Douda	<i>Department of Zoology and Fisheries, Czech University of Life Sciences Prague, Czech Republic</i>  <b>Host-dependent vitality of juvenile <i>Unio crassus</i> and <i>Anodonta anatina</i></b>
11:50-12:10	Phil Boon	<i>Scottish Natural Heritage, Silvan House, 231 Corstorphine Road, Edinburgh, EH12 7AT, Scotland</i>  <b>How to publish in <i>Aquatic Conservation</i> – pearl mussel papers as examples of what to do and what to avoid</b>
12:10-13:30	Lunch	
<b>Session II</b>		
13:30-14:00	David Zanatta	<i>Institute for Great Lakes Research, Biology Department, Central Michigan University, Mount Pleasant, Michigan USA</i>  <b>Genetic variation, structure and the complex histories of unionid mussel populations: A North American perspective on selecting source populations for propagation and augmentation</b>
14:00-14:20	Carles Feo-Quer et al.	<i>Consorci de l'Estany, Banyoles, Spain &amp; Museo Nacional de Ciencias Naturales de Madrid-CSIC, Spain</i>  <b>Experiments to improve the survival and growth of juvenile <i>Unio mancus</i> (Unionidae) during the first months of life</b>
14:20-14:40	Chris Barnhart et al.	<i>Biology Department, Missouri State University, Springfield, MO, USA</i>  <b>Pulsed flow-through systems for the laboratory culture of early life stages of freshwater mussels</b>

14:40-15:10	Coffee break	
15:10-15:30	Louise Lavictoire et al.	<i>University of Cumbria, Ambleside, UK &amp; Freshwater Biological Association, Windermere, UK</i>  <b>Effects of substrate size and cleaning regime on growth and survival of captive-bred juvenile freshwater pearl mussels, <i>Margaritifera margaritifera</i> (Linnaeus, 1758)</b>
15:30-15:50	Christian Scheder et al.	<i>Consultants in Aquatic Ecology and Engineering, Wels, Austria.</i>  <b>Improvement of the rearing success of freshwater pearl mussels (<i>Margaritifera margaritifera</i>) by using different cultivation systems</b>
15:50- 18:00	Poster Session with reception	

## Thursday, 26 November 2015

08:30-09:00	Registration at the Centre Culturel Château, Castle Clervaux	
<b>Session III</b>		
09:00-09:30	Chris Barnhart	<i>Biology Department, Missouri State University, Springfield, MO, USA</i>  <b>100 years of mussel propagation: What have we learned and where are we going?</b>
09:30-09:50	Christina Putz	<i>Landschaftspflegeverband Passau e.V., Germany</i>  <b>15 years of experience in semi-natural rearing of freshwater pearl mussels</b>
9:50-10:10	Michael Lange et al.	<i>Planungsbüro Landes u. Denkmalpflege Vogtland, 08525 Plauen, Germany</i>  <b>15 years of experience in rearing <i>Margaritifera</i>: practical suggestions on bioindication</b>
10:10-10:40	Coffee break	
10:40-11:00	Robert Vandr�e & Christine Schmidt.	<i>Schmidt &amp; Partner GbR, Goldkronach, Germany</i>  <b>Propagation of the Pearl Mussel <i>Margaritifera margaritifera</i> in its Natural Habitat</b>
11:00-11:20	Marie Capoulade et al.	<i>Bretagne Vivante, Brest, France</i>  <b>Saving six freshwater pearl mussel <i>Margaritifera margaritifera</i> populations in the Armorican Massif (France)</b>
11:20-11:40	Megan Bradley et al.	<i>Aquatic Wildlife Conservation Center, Virginia Department of Game and Inland Fisheries, 1724 Buller Hatchery Rd., Marion, VA 24354, USA</i>  <b>Innovations and advances in freshwater mussel propagation and recovery at the aquatic wildlife conservation center, Virginia</b>
11:40-13:30	Lunch + Poster Session	
<b>Session IV</b>		
13:30-14:00	Evelyn Moorkens	<i>Evelyn Moorkens and Associates, 53, Charleville Square, Rathfarnham, Dublin 14, Republic of Ireland.</i>  <b>Juvenile Augmentation – a short term breeding approach for <i>Margaritifera</i></b>
14:00-14:20	Ian Killeen	<i>Malacological Services, 53 Charleville Square, Rathfarnham, Dublin 14, Republic of Ireland</i>  <b>Identification of receptor sites for captive bred Freshwater Pearl Mussels (<i>Margaritifera margaritifera</i>)</b>

14:20-14:40	Rebecca Kyle et al.	<i>Quercus</i> , School of Biological Sciences, Queen's University Belfast, Belfast, BT9 7BL, UK  <b>Development of an intermediate culture system for the release of the globally endangered freshwater pearl mussel, <i>Margaritifera margaritifera</i>.</b>
14:40-15:10	Coffee break	
15:10-15:30	Ivan Olsson et al.	WWW.UCFORLIFE.SE, Sweden  <b>Bending rivers by mussels</b>
15:30-15:50	Lea Schneider et al.	Department of Biology, Karlstad University, SE-651 88 Karlstad, Sweden  <b>Local Adaptation Studies and Conservation: The Relationship of <i>Unio crassus</i> with Two of its Sympatric and Allopatric Host Fish Species</b>
15:50-16:10	Martin Österling et al.	Department of Biology, Karlstad University, SE-651 88 Karlstad, Sweden  <b>Rearing-related activities of <i>Unio crassus</i> – which host fish species to use?</b>
16:10-16:25	WWW.UCFORLIFE.SE , Sweden  <b>Movie: The UC4LIFE-project at Fyleån</b>	
19:30	Official Seminar Dinner in Clervaux	

## Friday, 27 November 2015

<b>Session V</b>		
09:00-09:20	Katharina Stöckl	Aquatic Systems Biology Unit, Technical University of Munich, Germany  <b>New information on the habitat requirements of <i>Unio crassus</i> as a basis to optimize supportive breeding</b>
09:20-09:40	Amílcar Teixeira et al.	CIMO-ESA-IPB - Mountain Research Centre, School of Agriculture, Polytechnic Institute of Bragança, Portugal.  <b>Conservation of Threatened Fish and Mussel Populations in Northern Rivers of Portugal (Douro Basin)</b>
09:40-10:00	Quim Pou-Rovira et al.	Consorci de l'Estany, Banyoles, Catalonia; <sup>2</sup> Sorelló, Estudis al Medi Aquàtic SL, Girona, Catalonia  <b>Age, growth and demography of several populations of <i>Unio mancus</i> and <i>U. ravoisieri</i> in northeast of Catalonia</b>
10:00-10:30	Final Discussion	

11:30-15:30	Visit of the rearing station at the mill of Kalborn  Lunch at the mill.	
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## Poster Session

Wednesday, 25 November 2015 (15:50-18:00)

Thursday, 26 November 2015 (11:40-13:30)

Posters will be on display throughout the meeting

First Author	Title
Monika Mioduchowska et al.	Department of Genetics, Faculty of Biology, University of Gdańsk, Gdańsk, Poland <b>Male or female? Molecular sex identification of the thick-shelled river mussel <i>Unio crassus</i></b>
Malgorzata Ozgo et al.	Department of Evolutionary Biology, Kazimierz Wielki University, Bydgoszcz, Poland <b>Risks Associated with the Maintenance of Rivers Outside Protected Areas – the Case of <i>Unio crassus</i> in a Tributary of the Biebrza River, North-Eastern Poland</b>
Tanja Eybe et al.	natur & umwelt / Fondation Hëllef fir d'Natur L-9753 Heinerscheid, Luxembourg & University Duisburg-Essen, Fakultät für Biologie, Aquatische Ökologie, Universitätsstr. 5, D-45141 Essen, Germany <b>Rearing of the Thick-Shelled River Mussel (<i>Unio crassus</i>)</b>
Keiko Nakamura Antonacci et al.	Sociedad Aragonesa de Gestión Agroambiental (SARGA).Pablo Ruiz Picasso St, nº65-A, 3th floor, 50018, Saragossa, Spain <b>The first year of <i>Margaritifera auricularia</i> (Spengler, 1793). Breeding in captivity in Aragon, Spain</b>
Eloy Benito Reyes et al.	Freshwater Biological Association, Windermere, UK <b>Variability within Pearl Mussels populations and their lifecycle (in captivity)</b>
Louise Lavictoire et al.	University of Cumbria, Ambleside, UK & Freshwater Biological Association, Windermere, UK <b>Investigations into feeding structures of juvenile freshwater pearl mussels (<i>Margaritifera margaritifera</i>) through scanning electron microscopy</b>
Pedro Castrillo et al.	Department of Pathological Anatomy Faculty of Veterinary Medicine, University of Santiago de Compostela, Lugo, Spain <b>Morphopathological changes in gills associated with experimental glochidiosis in Atlantic salmon (<i>Salmo salar</i> L.)</b>
Santtu Väilä et al.	Department of Biological and Environmental Science, University of Jyväskylä, P.O. Box 35, 40014 Univ. Jyväskylä, Finland <b>River specific genetic diversity of <i>Margaritifera margaritifera</i> with respect to host fish and population size</b>
Miquel Campos et al.	Consorci de l'Estany, Banyoles, Spain <b>Ex-situ breeding of native unionids in Lake Banyoles (Spain) as part of a LIFE project</b>
Miquel Campos et al.	Consorci de l'Estany, Banyoles, Spain <b>Restocking of Lake Banyoles (Girona, Spain) with juvenile naiad (Unionidae) born in captivity</b>
Quim Pou-Rovira et al.	Consorci de l'Estany, Banyoles, Catalonia <b>LIFE Potamo Fauna, a project for the recovery and conservation of endangered river fauna in the basins of the Ter, Fluvià and Muga rivers (Catalonia).</b>
Quim Pou-Rovira et al.	Consorci de l'Estany, Banyoles, Catalonia & Sorelló, Estudis al Medi Aquàtic SL, Girona, Catalonia <b>Habitat preferences of <i>Unio mancus</i> and <i>U. ravoisieri</i> in northeast of Catalonia</b>

Quim Pou-Rovira et al.	<p><i>Consorti de l'Estany, Banyoles, Catalonia &amp; Sorelló, Estudis al Medi Aquàtic SL, Girona, Catalonia</i></p> <p><b>Naiads and fish, coupled destiny: the case of basins of north-eastern Catalonia.</b></p>
Quim Pou-Rovira et al.	<p><i>Consorti de l'Estany, Banyoles, Catalonia &amp; Sorelló, Estudis al Medi Aquàtic SL, Girona, Catalonia</i></p> <p><b>Age, growth and demography of several populations of <i>Potomida littoralis</i> in northeast of Catalonia.</b></p>
Quim Pou-Rovira et al.	<p><i>Consorti de l'Estany, Banyoles, Catalonia &amp; Sorelló, Estudis al Medi Aquàtic SL, Girona, Catalonia</i></p> <p><b>Age, growth and demography of <i>Anodonta anatina</i> in low Ter River flood plain (Catalonia).</b></p>
Quim Pou-Rovira et al.	<p><i>Consorti de l'Estany, Banyoles, Catalonia &amp; Sorelló, Estudis al Medi Aquàtic SL, Girona, Catalonia</i></p> <p><b>Expansion of the exotic unionid <i>Sinanodonta woodiana</i> in low Ter River flood plain (Catalonia).</b></p>
Quim Pou-Rovira et al.	<p><i>Sorelló, Estudis al Medi Aquàtic SL, Girona, Catalonia</i></p> <p><b>Effect over naiad populations of flow drastic reduction in traditional irrigation channels in the low Ter River flood plain (Catalonia).</b></p>



*Restoration of *Unio crassus* rivers in the Luxemburgish  
Ardennes LIFE 11 NAT/LU/857*  
Important Seminar Information



Date	<b>Tuesday 24<sup>th</sup> November – Friday 27<sup>th</sup> November 2015</b>
Venue	Centre Culturel Château de Clervaux (Castle Clervaux) L-9712 Clervaux Luxembourg
Early registration date	<b>April 30, 2015</b>
Late registration date	<b>October 30, 2015</b>  A registration form is available under: <a href="http://www.unio.lu">http://www.unio.lu</a>
Registration Fee	<p>The registration fee is set to <b>100 €</b></p> <ul style="list-style-type: none"> <li>• A regular fee is available until <b>November 9, 2015</b> afterwards a higher fee will be charged.</li> <li>• Surcharge for late payment will be 20 EUR.</li> </ul> <p>The registration fee includes:</p> <ul style="list-style-type: none"> <li>• The abstract book</li> <li>• The welcome and poster reception</li> <li>• All coffee breaks</li> <li>• 3 X Lunch</li> <li>• Bus transfer to the rearing facility</li> </ul> <p>We ask participants to kindly pay the registration fee, free of charges for us, by <b>November 9, 2015</b>. Payments can be made by bank transfer to the account below.</p> <p>We recommend transferring the money in one transaction. Please indicate with your payment if you want to take part at the Seminar Dinner (see below).</p>



	<p>Payment is possible by bank transfer to the following account:</p> <p><b>Account Holder:</b>                      <b>Steffung Hellef fir d'Natur</b></p> <p><b>Bank Name:</b>                              <b>CCP Luxembourg</b></p> <p><b>BIC/ SWIFT:</b>                              <b>CCPLLULL</b> (International Bank Identification. Number)</p> <p><b>IBAN:</b>                                        <b>LU89 1111 0789 9941 0000</b> (International Bank Account Number)</p> <p><b>Reason for Payment:</b>                      <b>Life Unio+ Name of Participant</b> <b>(necessary information)</b>                      <b>+ "If relevant" Seminar Dinner</b></p> <p><b>For daily visitors</b> direct payment at the conference site is also possible - without additional charge, but only cash is possible.</p> <p>Please note, that <b>no</b> credit card payment is possible during the seminar</p> <p>A receipt for the registration fee will be issued upon arrival.</p> <p>If a written <b>cancellation</b> is received before November 9, 2015 the Conference fee will be refunded minus a cancellation fee of 25€. Thereafter no refunds are possible. All refunds will be made after the workshop</p>
Seminar Dinner	<p>The official seminar dinner will be on Thursday evening in Clervaux but it is not included in the registration fee and an additional <b>30€</b> (drinks not included) must be paid if you are attending.</p> <p>Dinner can be paid <b>by adding 30€</b> to the registration fee (see above).</p> <p>At the registration desk in Clervaux you will have the possibility to choose between different meals (meat or meatless).</p>

How to get there	<p>Clervaux is situated in the northern part of Luxembourg.</p> <p>Simply search for Clervaux on google maps</p>
Accommodations	<p>Clervaux, a small touristic town, offers a variety of different accommodations. Check: <a href="http://www.tourisme-clervaux.lu">http://www.tourisme-clervaux.lu</a> or any relevant internet sites like for instance <a href="http://www.trivago.com">http://www.trivago.com</a></p> <p>The following Hotel are directly located in Clervaux and the seminar venue is in walking distance from these Hotels.</p> <p style="text-align: center;"><b>Hotel du Commerce ***</b></p> <p><a href="http://www.hotelducommerce.lu">http://www.hotelducommerce.lu</a></p> <p><b>for the seminar room price please book directly under:</b> <a href="mailto:info@hotelducommerce.lu">info@hotelducommerce.lu</a> / please mention natur&amp;emwelt</p> <p>Single Room including breakfast: 69€/night</p> <p>Double Room including breakfast: 86€/night</p> <p>Included: access to the wellness /fitness /parking /WIFI</p> <p style="text-align: center;"><b>Hotel Koener ***</b></p> <p><a href="http://www.koenerclervaux.lu">http://www.koenerclervaux.lu</a></p> <p><b>for the seminar room price please book directly under:</b> <a href="mailto:mail@koenerclervaux.lu">mail@koenerclervaux.lu</a> / please mention natur&amp;emwelt</p> <p>Single Room Confort including breakfast: 59€/night</p> <p>Double Room Confort including breakfast: 71€/night</p> <p>Single Room Supérieure including breakfast: 70€/night</p> <p>Double Room Supérieure including breakfast: 81€/night</p> <p>Included: access to the wellness/ WIFI</p> <p style="text-align: center;"><b>Hotel des Nations***</b></p> <p><a href="http://www.hoteldesnations.lu">http://www.hoteldesnations.lu</a></p> <p>Single Room including breakfast: 65€/night</p> <p>Double Room including breakfast: 88€/night</p>

	<p style="text-align: center;"><b>Hotel International ****</b></p> <p><a href="http://www.interclervaux.lu">http://www.interclervaux.lu</a></p> <p><b>for the seminar room price please book directly under:</b></p> <p><a href="mailto:reservation@koener.com">reservation@koener.com</a>/ please mention natur&amp;emwelt</p> <p>Single Room including breakfast: 85€/night</p> <p>Double Room including breakfast: 105€/night</p> <p>Included: access to the wellness /WIFI</p> <p style="text-align: center;"><b>Hotel Le Clervaux*****</b></p> <p><a href="http://www.le-clervaux.com">http://www.le-clervaux.com</a></p> <p><b>for the seminar room price please book directly under:</b></p> <p><a href="mailto:reservation@koener.com">reservation@koener.com</a>/ please mention natur&amp;emwelt</p> <p>Single Room including breakfast: 135€/night</p> <p>Double Room including breakfast: 155€/night</p> <p>Included: access to the wellness /WIFI</p>
<p>Accompanying persons</p>	<p>For further information about sightseeing in Luxembourg or the area see :</p> <p><a href="http://www.visitluxembourg.lu/">http://www.visitluxembourg.lu/</a></p> <p><a href="http://www.lcto.lu">http://www.lcto.lu</a></p> <p><a href="http://www.tourisme-clervaux.lu">http://www.tourisme-clervaux.lu</a></p> <p><a href="http://www.naturpark-our.lu">http://www.naturpark-our.lu</a></p>
<p>Excursion</p>	<p>A visit of the rearing station at the mill of Kalborn and the biotope of the last Fresh Water Pearl Mussel population in Luxembourg will be organised.</p>
<p>Local Organisation Team</p>	<p>Alexandra Arendt          Sonja Heumann          Patricia Heinen          Frankie Thielen          Karin Michels          Michael Frisch</p>

Contact

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Further Information on the Internet Site:

<http://www.unio.lu>

Please feel free to forward this document to anyone who could be interested in this Seminar.

Thank You!