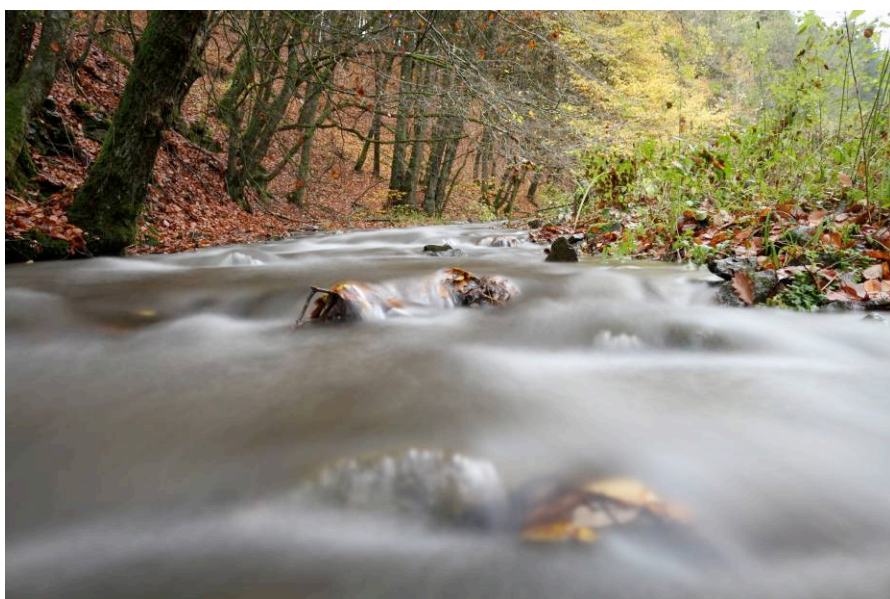


Restoration of *Unio crassus* rivers in the Luxemburgish Ardennes LIFE11 NAT/LU/857



March 1st 2013 –
February 28th 2014

Progress Report



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



Progress Report

1st march 2013 to 28th february 2014

Reporting Date

February 2014

« Restoration of Unio crassus rivers in the Luxemburgish Ardennes » **Resto-unio**

Project location:	Vallée de l'Our de Ouren à Dasburg Pont LU0001002 Vallée Supérieure de la Sûre / Lac du barrage LU0001007
Project start date:	01.09.2012
Project end date:	28.02.2018
Total budget	2.057.068 €
EC contribution:	1.028.534 €
(%) of eligible costs	50 %

Data Beneficiary

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2 LIST OF ABBREVIATIONS

MA:	Ministère de l'Agriculture, de la Viticulture et du Développement rural
MDDI:	Ministère du Développement durable et des infrastructures
MIGR:	Ministère de l'Intérieur et à la Grande Région
FMCS:	Freshwater mollusk conservation society
U.c.:	<i>Unio crassus</i>
WFD:	Water framework Directive
ANF:	Administration de la Nature et des Forêts

3 SUMMARY

3.1 General progress and assessment

Action A1: Localisation des zone à risques d'érosion	
Progress: Mapping nearly completed +/- 85% done.	To realise till next report: Set up of the "hot spots of erosion" till 30.06.2014.
Action A2: Planification des mesures de restauration	
Progress: Start with the planning of restoration measures while mapping is undergoing.	To realise till next report: Set up of an erosion reduction plan till 30.06.2014. Some measures will be planned.
Action A3: Planification de la surveillance de la qualité de l'eau et du substrat interstitiel	
Progress: Sampling points were chosen, Sampling equipment has been bought and installed	To realise till next report: Install second online measuring probe in the river Sûre
Action A4: Mise en place de la technique d'élevage pour <i>Unio crassus</i>	
Progress: Visit of rearing facilities in Virginia as planned/ Started rearing <i>Unio crassus</i> from the river Our and river Sûre	To realise till next report: Continue rearing <i>Unio crassus</i> . Deliver Rearing Protocol, due on August 31th 2014.
Action A5: Contribution à l'élaboration des plans de gestion Natura 2000 "Our" et "Haute Sûre"	
Progress: n&ë-Fondation Hëllef fir d'Natur is asked by ANF to work out the management plan. This part must be considered as "extra Life". An employee not involved in the Life Unio is working on this part.	To realise till next report: Meeting to check the quality of the data.
Action B1: Acquisition de terrains le long de l'Our, de la Sûre et de leurs affluents	
Progress: Land purchase of 277,8 ar.	To realise till next report: Further acquisitions.
Action C1: Interventions pour réduire l'apport en sédiments fins dans le réseau hydrographique	
Progress: Several information exchanges with our partners involved in future in the realisation of the restoration measures took place.	To realise till next report: Carrying out of restoration measures.
Action C2: Transformation d'obstacles à la migration des poissons sur les cours d'eau tributaires	
Progress: Priority list "Fish obstacles" for the tributaries of Our an Sûre.	To realise till next report: Planning and executing of the measures.

Progress Report

Action C3: Amélioration du substrat par dépôt de gravier	
Progress: Permission letter for the river Our of the Luxemburgish authorities. Dump of 2x100m ³ . Permission letter for the river Sûre from the Luxemburgish authorities and refusal from Belgium.	To realise till next report: Add gravel to the river Our as foreseen. Add of gravel to the river Sûre when we have got the authorisation from Belgium.
Action C4: Elevage de <i>Unio crassus</i> pour la Grande Région	
Progress: Started rearing <i>Unio crassus</i> from the river Our and river Sûre.	To realise till next report: Start all the necessary preparations for fish infestation 2014. Continue culture with the mussels from 2013, and collect new mussels in 2014.
Action C5: Régulation de la prédation du rat musqué	
Progress: Muskrats have been trapped in autumn on both rivers.	To realise till next report: Repetition of the same action in 2014.
Action D1: Surveillance de la qualité de l'eau et du substrat interstitial	
Progress: Measuring of water quality continues at both catchments and in their tributaries.	To realise till next report: Continue the monitoring of the water quality.
Action D2: Monitoring des poissons hôte	
Progress: Electric fishing activities at the river Our and Sauer in Summer 2013 were done. Electric fishing activities at 10 tributary brooks were done in December 2013.	To realise till next report: Report about results of electric fishing activities at the river Our and Sauer and at the 10 tributaries. First results are online.
Action D3: Suivi de <i>Unio crassus</i> dans son milieu naturel	
Progress: Monitoring of 6,2km on the river Our and 3,5 km on the river Sûre.	To realise till next report: Continue mapping at the river Our and Sauer. Control of the tagged mussels. Analyse of the sediment fractions on the mussel banks.
Action D4: Monitoring et évaluation de l'impact des mesures concrètes	
Progress: Pre-restoration monitoring was done in the following fields: Water quality, fish population and mussel population. Evaluation sites will be selected as soon as the mapping will be finished, and restoration sites have been selected.	To realise till next report: Select the definite sites to do the pre-restoration resp. the restoration monitoring.
Action D5: Analyse de l'impact socio-économique du projet et de l'effet sur les écosystèmes	
Progress: Collect necessary data and informations for final report.	To realise till next report: Collect necessary data and informations for final report.
Action E1: Information et sensibilisation des acteurs concernés	
Progress:	To realise till next report:

Progress Report

<ul style="list-style-type: none"> • First water forum organized • First information event for farmers took place • 23 meetings with authorities and stakeholder 	<ul style="list-style-type: none"> • Organize next farmer information event • Organize water forum for the river Sûre catchment • Stay in contact with stakeholders
Action E2: Sensibilisation du grand-public	
Progress: <ul style="list-style-type: none"> • Visit of 21 groups at the mill • press release: 11 articles • Fleyer • Transformation of nature 2000 room started 	To realise till next report: <ul style="list-style-type: none"> • Continue with press releases and visits • Start with project movie • Start with AO information boards
Action E3: Création d'un site Web	
Progress: Website fully accessible in all three languages (FR, EN and DE)	Keep internet site up to date with news and downloads.
Action E4: Organisation de séminaires	
Progress: First seminar planned for May, June 2015 so that it will not overlap within a few months with the meeting from the LIFE FPM in Brittany.	To realise till next report: Start organizing the seminar about one year in advance (May June 2014).
Action F1: Gestion et encadrement du projet	
Progress: Second piloting committee. Signature of the partnership agreement of the MIGR. Redaction of the Progress report.	To realise till next report: Third piloting committee. Progress report.
Action F2: Echange du savoir avec d'autres projets: LIFE et autres	
Progress: Constant exchange with colleagues working in LIFE-Mussel-Projects by email and phone. Presentation of the project at international meetings.	To realise till next report: Continue exchange with Life projects and others. Take part in scientific seminars.
Action F3: Plan de conservation After-LIFE	
Progress: Not scheduled for the moment.	To realise till next report: Not scheduled for the moment.

3.2 Problems encountered

No major problems causing important delays or putting different actions into questions did occur. The action C3 could not be realized entirely as the permission from the Belgian authority is lacking. This topic is treated in order to get a favourable answer (see details under C3). All other delays or small problems that occurred are discussed under the respective action in the technical part (see 5.1).

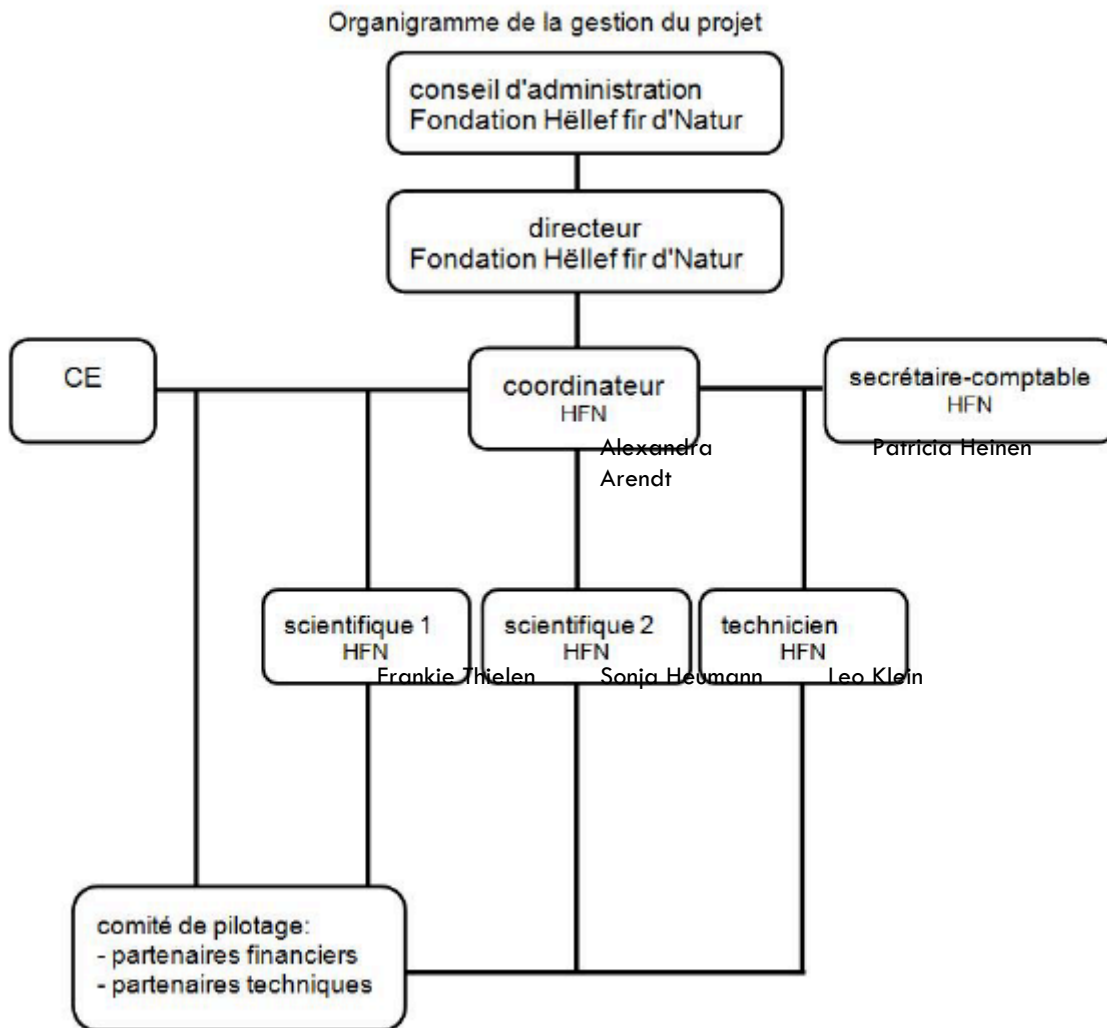
4 ADMINISTRATIVE PART

4.1 Project management.

The setup of the project management and composition of the project team is described under Action F1. Meetings with stakeholder or other groups and persons relevant for the project management are always mentioned in the respective description of the action (see chapter 5).

4.2 Organigramme

The project Organigramme is the following:



4.3 Partnership agreements

The lacking partnership agreement from the Ministère de l'Intérieur et à la Grande Région (MIGR) has been signed on 11th march 2013. After the national elections in Luxembourg in October 2013 the Water Division formerly settled in the Ministère de l'Intérieur et à la Grande Région (MIGR) has been included in the Ministère du Développement durable et des Infrastructures (MDDI). The co-financier Ministère de l'Agriculture, de la Viticulture et du Développement rural (MA) has slightly changed it's denomination to Ministère de l'Agriculture, de la Viticulture et de la Protection des consommateurs.

4.4 Delivered Reports:

The inception report has been delivered on 28th February 2013.

4.5 Comments

This section contains comments on the questions asked in the letter from European Commission of February 3rd, 2014.

A: Technical aspects

The technical aspects are given under the concerned actions.

B: Administrative and financial issues

Timesheets: As we were not sure how to fill out the timesheets and who should countersign for a staff member we showed the uncompleted timesheets to the External Monitoring Team for having his advice at this topic. In future we will of course apply the guidelines that were given to us at the meeting on 18th November 2013 and as mentioned in the EC letter of 3 February 2014.

Procedures when inquiring market

Please find underneath the protocol detailed in French.

Protocole guidant notre appel d'offre pour les projets LIFE

Agissant comme bénéficiaire privé non commercial et gérant de l'argent public, nous respectons les obligations formulées sous l'art. 8.4 des dispositions communes du Life Unio et nous veillons au "respect des principes de transparence et d'égalité de traitement des sous-traitants" et des fournisseurs potentiels.

Le protocole ci-dessous sert à nous guider dans cette démarche et à garantir "the best value for money" via l'application des critères sollicités classés dans l'ordre décroissant d'importance. Il est respecté pour tous les marchés importants à conclure. En guise de transparence l'acceptation ou le rejet d'une offre est motivé(e) dans un tableau ajouté à l'annexe financière. Pour éviter néanmoins l'envergure administrative une certaine souplesse existe pour les montants plus bas. Nous ne sommes pas nécessairement obligés d'avoir recours à des offres concurrentielles pour les contrats ou biens en-dessous de 1.000 €.

	Montant (€)	procédure	critères sollicités
sous-traitance	< 15.000* htv	consultation directe de prestataires de service (généralement 3). Possibilité de négocier les critères.	<ul style="list-style-type: none"> • l'expérience dans le domaine • l'offre économiquement la plus avantageuse, • le délai d'exécution des travaux • le service après vente
matériel durable	< 15.000 htv	consultation directe de fournisseurs (généralement 3). Possibilité de négocier les critères.	<ul style="list-style-type: none"> • la qualité du produit • l'offre économiquement la plus avantageuse, • le délai de livraison • le service après vente
sous-traitance	> 15.000 htv	sélection de prestataires de service potentiels et demande d'offre sur base d'un cahier de charge. Approbation par le directeur n&ë-Fondation Hëllef fir d'Natur.	<ul style="list-style-type: none"> • l'expérience dans le domaine • l'offre économiquement la plus avantageuse, • le délai d'exécution des travaux • le service après vente
matériel durable*	> 15.000 htv	sélection préalable de fournisseurs potentiels et demande d'offre sur base d'un cahier de charge. Approbation par le directeur n&ë-Fondation Hëllef fir d'Natur.	<ul style="list-style-type: none"> • la qualité du produit • l'offre économiquement la plus avantageuse, • le délai de livraison • le service après vente

*seuil pour lequel l'adjudicateur public peut réaliser un marché de gré à gré sans devoir effectuer de la publicité

5 TECHNICAL PART

5.1 General progress of the actions

5.1.1 Action A1: Localisation des zone à risques d'érosion

The load of fine sediments and nutrients in the river system is one of the main factors responsible for the decline of *Unio crassus*. Therefore, the project focuses on the reduction of the entrance of fine sediments and nutrients in the water courses, especially in the tributaries of the rivers Our and Sauer. The main intent of this action is to localize the hot spots of erosion.

➤ Progress/results

The biggest part of mapping is finished and an overview of the mapping subjects is given in the following table. The lacking information's for the river Sûre for "Erosion of and on farmland" and the river Our "Erosion on or beside forestry and rural roads" will be collected as soon as possible.

The hotspots have been evaluated, rated and priority lists have been set up for all types of entrances of fine sediment in the water courses (see action A2).

➤ Realised

85 % of all areas are mapped and rated.

Table 1: Realized mapping in the river Our and Sûre catchments

Mapping subject	Tributary	Realisation
Erosion of and on farmland	River Our catchment	100 % done
Erosion of and on farmland	River Sûre catchment	60 % done
Spruce trees next to the river	11 Tributaries on the Our	100% done
Spruce trees next to the river	5 Tributaries on the Sûre	100% done
Cattle trampling	11 Tributaries on the Our	100% done
Cattle trampling	5 Tributaries on the Sûre	100% done
Erosion on or beside forestry and rural roads	River Our catchment	20 % (+/-15 km) done
Erosion on or beside forestry and rural roads	River Sûre catchment	100% (+/-30 km) done

➤ **Problems encountered/delays**

Erosion risk maps worked out by the Administration des Services techniques de l'Agriculture, Service pédologique from Ministry of Agriculture in collaboration with the Université de Liège - G3mbloux Agro-bio Tech, Systèmes Sol-Eau were not available until summer 2013. Therefore detailed mapping of farmland in the river Our catchment started only in September 2013. Mapping of erosion on farmland on the river catchment Sûre has to be completed as well as the mapping of erosion on forestry and rural roads on the river Our.

No other problems encountered so far.

There is a slight delay for this action, however the mapping will soon be finished so that we can send our "Erosion report" for at latest the 30 June 2014, date proposed by the European Commission.

	2013				2014			
	I	II	III	IV	I	II	III	IV
A1	planned	planned						
	Realized	Realized	Realized	Realized	Realized	New plan		

5.1.2 Action A2: Planification des mesures de restauration

The initial mapping phase of “hot spots” of erosion, as foreseen under the action A1, will allow deciding where negative points have to be resolved and will lead to the concrete planning phase of the following restoration measures:

1. The installation of 2km of fences, 5 cattle watering installations, 3 bridges for cattle.
2. Construction of 60 water evacuation systems on agricultural and forestry roads.
3. 40 agro-environmental measures
4. Restoration of a river bed

➤ Progress/results

Even if the mapping is not totally finished we started with the planning of restoration measures and there should be no greater delay for the concrete measures foreseen under action C1. The priority lists contain precise information's about the detected problems, their localisation, a link to www.geoportail.lu and a description of the needed measures. Furthermore we dispose of the data of the owners or/and land users (we do not include these data in the report as they are confidential).

1. Trampling of cattle: Priority list is worked out and will be finished in March 2014.
2. Rural and forestry ways: Priority list "Erosion on or beside forestry and rural roads" for the river catchment Sûre is finished and water evacuation grids are proposed for 47 sites. A similar list is worked out for the Our is.
3. Farmland: Priority list "Erosion of and on farmland" is worked out. As we think that agriculture practice is a mean problem for the water quality of our rivers we give the solving of erosion problems on farmland a high priority. Therefore we had several meetings with employees of the Chamber of agriculture in order to develop a procedure to find problematic parcels, to evaluate and to resolve hot spots: 20.07.13, 06.11.13, 05. 02.14. (Erosion risk maps, mapping, discussion, planning of measures)
4. Fish obstacles and restoration of the riverbed: Priority list "Fish obstacles" is worked out. 10.01.2014: Meeting and site viewing together with employees of the Water administration (Division de l'Hydrologie - Service Régional Nord).
5. Dump of gravel: selection of 5 sites at each river catchment, formulation of authorizations (Lu., D., B.).

➤ **Realised**

- Priority list "Erosion of and on farmland", Priority list " Erosion on or beside forestry and rural roads" for the rivers Our and Sûre. (see Annex 1)
- Refusal Sûre Belgium, Annex 2
- Authorisation Sûre Luxembourg, Annex 2
- Authorisation Our Luxembourg, Annex 2

➤ **Problems encountered/delays**

Dump of gravel:

07th March 2013, refusal from the Belgian authority « Direction des cours d'eau non navigable » District de Marche en Famenne, Secteur de Houffalize. The refusal is based on a law of 1970 not allowing the introduction of material in the water courses.

15th April 2013 meeting in Martelange in order to explain the measure and find an agreement with the chief of District de Marche en Famenne, Secteur de Houffalize. No change of his position.

The Life team asked the opinion to Belgian employees at the Service de la Pêche, Direction des Cours d'eau non navigable (other districts) and at the Cantonement de Habay. They all approved this measure.

September 2013 dump of gravel in the Our and invitation of the chief of the District de Marche en Famenne, Secteur de Houffalize to have a look on how the action is conducted. But no visit took place and nothing changed.

20.01.14 Contact to the Director Lambot Francis of the department « Direction des cours d'eau non navigable » to object to the Belgian refusal. 10.02.2014 we are asked to introduce a new argumentation in order to get a positive answer directly from the head. We insisted that we should get the permission for 2014.

In order to respect the foreseen timeframe we will try to catch up the delay of the gravel dump action in Belgium by adding every year a larger amount of gravel (see action C3).

No other problems encountered so far.

	2013				2014			
	I	II	III	IV	I	II	III	IV
A2	planned	planned	planned	planned	planned	planned		
	Realized	Realized	Realized	Realized	Realized			

planned
Realized

5.1.3 Action A3: Planification de la surveillance de la qualité de l'eau et du substrat interstitial

The planning of the water measurement stations and other equipment needed for water quality survey is part of this action.

➤ **Progress/results**

A redox-electrode (Geist & Auerswald, 2007) was delivered in January 2013. In March (04.03.2013) was a meeting in Munich combined with a workshop to learn the handling.

In June 2013 the company Hach-Lange installed 4 probes (nitrate, ammonium, chloride and potassium) at our Lab in Kalborn in order to see if the equipment would fit our needs. In August 2013 the whole equipment (nitrate, ammonium, chloride and potassium; conductivity, turbidity, oxygen and pH-value) was ordered and installed in September 2013.

A second system should be bought for the river Sûre. Offers from OTT, WTW and Hach-Lange were invited and received. Our first intent was to install the probes at the Moulin de Bigonville. Meanwhile the luxemburgish water management authority planned a permanent online measurement system for the river Sûre at the same sampling site (Moulin de Bigonville). To avoid two online measurement systems at the same place we came to the decision to buy a mobile online measurement system. In this case we can put our probe at any place and any water body we want. This gives us the possibility to use it to evaluate our concrete measures as foreseen under action D4.

The company OTT offers such a system and we ordered in February 2014 a system with the following probes: turbidity, conductivity, pH, oxygen and nitrate. One reason to choose this system was also on recommendation by Irish colleagues working on the Interreg IVA Project: Freshwater Pearl Mussel (<http://freshwaterpearlmussel.com/>) (Mark Magee). They use several of these probes for their project.

➤ **Realised**

The redox-electrode was delivered.

Online monitoring system was installed at the Mill in Kalborn in September 2013. First results are available (Action D1, see Annex 3).

Mobile online monitoring system was ordered in February 2014 at OTT. Delivery will be in March 2013.

➤ **Problems encountered/delays**

At the river Our the system started operating 3 month later as foreseen under this action. However until March 2013 an online water measuring container was installed at the mill of Kalborn by the water management board and full access to the data was available.

At the river Sûre the delay is due to the discussions with the water management board about their installation of an online measuring station to avoid double measurement at the same place. However since April 2013 the online water measuring container from the administration is installed at the river Sûre in Martelange. All the data are available for us.

So overall in both rivers online measuring data are already available for almost all the year 2013.

No others problems or delays encountered.

	2013				2014			
	I	II	III	IV	I	II	III	IV
A3	planned	planned	planned	planned	New plan			
	Realized	Realized	Realized	Realized	Realized			

planned
Realized
New plan

5.1.4 Action A4: Mise en place de la technique d'élevage pour *Unio crassus*

The intent of this action is to plan and organize all the necessary steps to install a culture procedure for *Unio crassus* at the rearing facility at the mill of Kalborn.

➤ **Progress/results**

Authorisation

A permission from the MDDI to handle *Unio crassus* in the river Our and Sûre was issued on March 14th, 2013 and is in force until 28.02.2018 (see Annex 4).

Exchange with experts from USA

To learn the handling of the cell counter, Frankie Thielen had following appointments at the mussel facilities in:

- Marion, Virginia Department of Game and Inland fisheries - Aquatic Wildlife Conservation Center, Virginia (Contact person, Megan Bradley) (18-21.03.2013).
- White Sulphur Springs, National Fish Hatchery and aquatic Resource recovery center, West Virginia (Contact person, Rachel Mair) (18-21.03.2013).

the week after the FMCS meeting Guntersville Alabama USA 10-14.03.2013

- Email and phone contact with Rachel and Megan is still ongoing, to start operating the cell counter in Luxembourg.

The cell counter (acquisition and associated costs foreseen under C4) will be used to improve the feeding of freshly metamorphosed *Unio crassus* in the next breeding period in May, June 2014. After an initial test phase an expert (person not yet defined) from the USA is invited to Luxembourg to validate our methodical setup as foreseen under this action.

➤ **Realised**

Permission Letter for the river Our and Sûre valid until 28.02.2018 (see Annex 4).

Visit of freshwater rearing facilities in the USA.

Technical document about rearing method: to be delivered until the 31.08.2014

➤ **Problems encountered/delays**

No problems encountered so far.

The time plan for this action is on schedule.

	2013				2014			
	I	II	III	IV	I	II	III	IV
A4	planned	planned	planned	planned	planned	planned	planned	planned
	realized	realized	realized	realized				

planned
realized

5.1.5 Action A5: Contribution à l'élaboration des plans de gestion Natura 2000 "Our" et "Haute Sûre"

Elaboration of a management plan for the 2 Natura 2000 project areas on the river Our and the river Sûre. The Life team will give scientific assistance to the consultant office in charge of working out management plans. During public hearings the team will contribute with details about the aquatic biotope.

➤ Progress/results

- 13.03.2013 and 18.07.2013 presentation by ANF of the new strategy for working out Natura 2000 management plans for Luxembourg.
- 08.05.2013 meeting with ANF. As up to this date still no consultant office has been charged with the elaboration of the 2 management plans Our and Sûre, n&ë-Fondation Hëllef fir d'Natur insisted on this aspect to avoid a delay of this action. ANF asked n&ë-Fondation Hëllef fir d'Natur to formulate an offer.
- 15.05.2013 Offer and proposal of a timetable by n&ë-Fondation Hëllef fir d'Natur.
- 24.12.2013 n&ë-Fondation Hëllef is officially charged to work out the management plans.
- 29.01.2014 Meeting to organize the working steps with members of the personal within n&ë-Fondation Hëllef.

The Life staff will give scientific assistance as foreseen in the Life proposal. Instead of a consultant office the two management plans will be worked out by an employee of n&ë-Fondation Hëllef fir d'Natur who is not involved in the Life Unio. This part must be considered as "extra Life".

➤ Realised

Offer and letter sent to ANF

Official response from ANF (see Annex 5)

➤ **Problems encountered/delays**

No problems encountered so far.

The time plan for this action is on schedule.

	2013				2014			
	I	II	III	IV	I	II	III	IV
A5								

	planned
	realized

5.1.6 Action B1: Acquisition de terrains le long de l'Our, de la Sûre et de leurs affluents

It is foreseen to acquire 8 ha of land on the catchment area of the river Our and the river Sûre.

➤ Progress/results

Land purchasing has been signed by a notary for 258,63 are. For 19,17 are the notarial acts are under progress. Negotiations are ongoing for 3 other parcels. It is planned to improve the vegetation on the banks of the brooks (see restoration measures displayed in table 2) measure that will be done in autumn 2014. The mean price of land acquisitions we have done is 77,79 €/are.

Table 2. Land purchase

bassin versant	Commune	section	lieu-dit	n° cadastral	superficie (are)	usage	mesure prévue
LU0001002 Vallée de l'Our de Ouren a Wallendorf Pont	Clervaux	HA de Lieler	in der Kemich	1022/4853	73,8	grassland	maintien du caractère ouvert de la parcelle,
LU0001002	Clervaux	HA de Lieler	in Kemichsberg	1036/3561	70,9	forest	restauration de la ripisylve
LU0001002	Clervaux	HE de Grindhausen	in Brueckenbrett	283/663	40	forest	restauration de la ripisylve
LU0001002	Clervaux	HE de Grindhausen	in Brueckenbrett	282/660	8	forest	restauration de la ripisylve
LU0001002	Clervaux	HC Heinerscheid	Kohlwies	938/2008	4,6	hedge	restauration de la ripisylve
LU0001002	Clervaux	HC Heinerscheid	Kohlwies	940/661	37,6	grassland	restauration de la ripisylve
LU0001002	Clervaux	HA de Lieler	in der Bachseif	710/5031	1,33	grassland	restauration de la ripisylve
LU0001002	Clervaux	HA de Lieler	an der Schelsbich	871	22,4	forest	Plantation d' arbres feuillus restauration de la ripisylve
LU0001002	Clervaux	HA de Lieler	Hehnewies	988/61	19,17	forest	Plantation d' arbres feuillus restauration de la ripisylve
				Total:	277,8	34,725 %	

				reste à acquérir:	522,2	62,275 %	
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➤ **Realised**

Notarial act (Life clauses included), aerial photo with the localisation of the acquisitions (see Annex 6)

➤ **Problems encountered/delays**

No problems encountered so far.

The time plan for this action is on schedule.

	2013				2014			
	I	II	III	IV	I	II	III	IV
B1	planned			planned	planned			planned
	realized			realized				

planned
realized

5.1.7 Action C1: Interventions pour réduire l'apport en sédiments fins dans le réseau hydrographique

This action will lead to:

1. The installation of 2km of fences, 5 cattle watering installations, 3 bridges for cattle.
2. Construction of 60 water evacuation systems on agricultural and forestry roads.
3. 40 agro-environmental measures
4. Restoration of a river bed

➤ **Progress/results**

As seen under A2 the priority lists are under work and several information exchanges with our partners involved in future in the realisation of the restoration measures took place. First restoration actions are planned to start in summer 2014 depending on negotiations with landowners, forest rangers and local authorities.

➤ **Realised**

No deliverables are foreseen for the moment.

➤ **Problems encountered/delays**

Slight delay but no problems encountered so far.

	2013				2014			
	I	II	III	IV	I	II	III	IV
C1								

	planned
	realized

5.1.8 Action C2: Transformation d'obstacles à la migration des poissons sur les cours d'eau tributaires

The intention of this action is to remove or transform 6 migration obstacles for fish in order to make them passable again.

➤ Progress/results

Set up of a priority list for the fish obstacles that has been sent to the Water administration to plan the measures. Obstacles to be transformed are retained on the tributaries Ettebaach, Gemünder Akeschterbaach, Holzbech, Huuschterbaach and Traesbech for the river Our. Schwärzerbaach, Froumicht, Bëllerbaach, Haemicht and Syrbaach are the selected tributaries for the river Sûre. Together with water administration we will decide which obstacles should finally be removed or transformed.

10.01.2014 Meeting and site viewing together with employees of the Water administration (Division de l'Hydrologie - Service Régional Nord).

The removal or transformation of the first obstacles at the rivers Our and Sûre is planned for 2014 with the collaboration of the Administration of water.

➤ Realised

- Priority list "Fish obstacles" for the tributaries of Our an Sûre was sent to the Administration of water (see Annex 7).

➤ Problems encountered/delays

No problems encountered so far.

The time plan for this action is on schedule.

	2013				2014			
	I	II	III	IV	I	II	III	IV
C2					planned	planned	planned	planned
					realized			

5.1.9 Action C3: Amélioration du substrat par dépôt de gravier

The intention of this action is to improve the quantity and quality of the river substratum in both rivers by the creation of clean gravel depots at five sites in each river.

➤ Progress/results

Choice of a company being able to deliver the gravel of the wished geological type and of the adequate size class.

Viewing of the selected sites together with the excavator driver. Supervising the job.

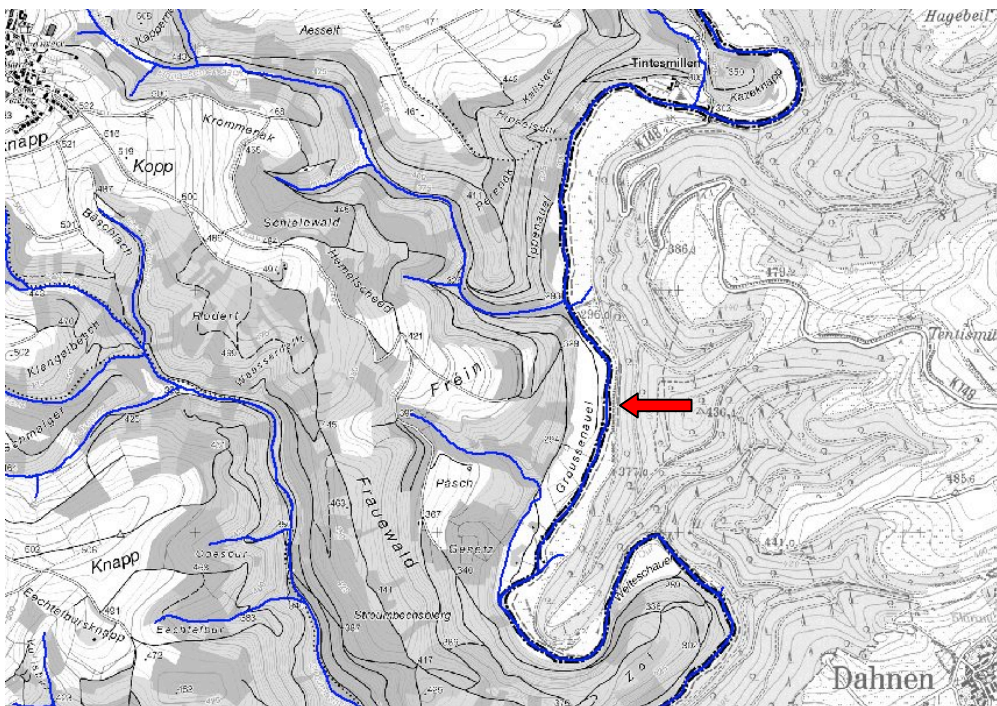
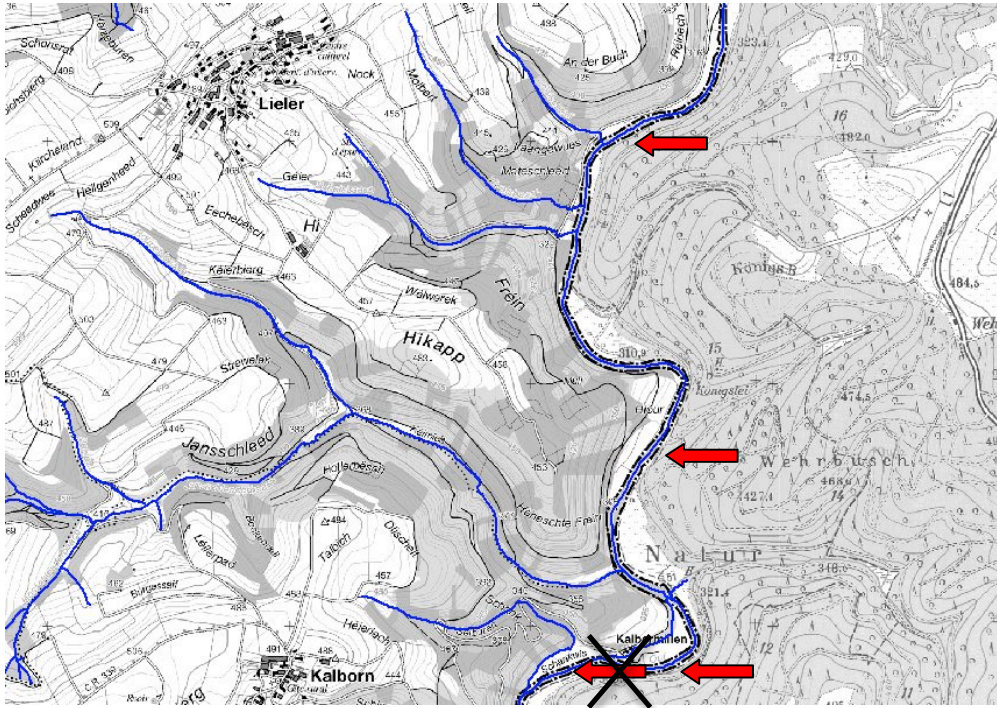
Dump of a total of 2x100 m³ (in order to respect the foreseen quantity for 2012 and 2013) of gravel at 4 sites (instead of 5) in the Our. We choose to exclude the site *Schankbaach* situated in the direct neighbourhood of the site Kalbermillen where for the dump tractor has to pass over a meadow. We want avoid having to pay compensations for damages to the landowner.

We didn't dump gravel in the Sûre as we were not allowed to do so by the Belgian authority (see Action A2). As we had spoken to the Director of the Service des Cours d'eau non navigable de la Wallonie we are quit optimist to be allowed to realise the measure in 2014 on the Sûre.



Figure 1: Dump sites at the river Our

- **Realised**
dump of 200 m³ gravel in the river Our



Dépôts de gravier au: 1) *Feischbur*, 2) *Hiour* 3) moulin de Kalborn et au 4) Groussenaue (à partir de la berge allemande)

➤ **Problems encountered/delays**

We were not able to put the gravel in the Sûre as planned. We will try to distribute the amount of the planned 500 m³ evenly over the 4 coming years, so 125 m³ each year on the selected sites.

C3	2013				2014			
	I	II	III	IV	I	II	III	IV
				planned	planned			planned
			realized			Our	Sauer	

planned	
realized	
new plan	

5.1.10 Action C4: Elevage de *Unio crassus* pour la Grande Région

The action deals with all the necessary steps to culture juvenile *Unio crassus* at the rearing facility at the mill of Kalborn.

➤ Progress/results

In May 2013 the first host fish were artificially infested with larvae from *Unio crassus* originating from the river Sûre and river Our.

➤ Realised

Rearing steps season 2013

- 22-29.04.2013: Transfer of 50 adult *Unio crassus* from the river Sûre to the rearing facility. 100 *Unio crassus* from the river Our already at the mill.
- 07.05.2013: Capture of host fish (*Phoxinus phoxinus* 523 and *Cottus gobio* 40) in the river Our + 320 *Salmo trutta fario* from hatchery.
- 11.05.2013 - 29.05.2013: Infestation of 583 fish with river Our mussels. Infestation of 300 fish with river Sûre mussels.
- 17.06.2013 - 22.07.2013: Collection of 1435 juvenile Mussels from the river Our and 1258 from the river Sûre.
- 18.06.2013 Installation of 2 cages in the river Our (66 fish) and 1 cage in the mill race (35 fish).
- 27.06.2013 Release of 170 fish in the river Sûre.
- Since June-July 2013: Culture of *U.c.* in sand aquaria at the mill of Kalborn.
- Since October the Cell-Counter is installed. First trials in November 2013.

Table 3: Summary of rearing activities in season 2013

	Promised	realized
Fish infestation	400	563 (+320 <i>S.trutta</i>)
Release in cages	200	100 +170 released without cage
Use in collecting installation	200	523
Juvenile mussels collected	5000	2693

➤ **Problems encountered/delays**

- **Problem:** *Phoxinus phoxinus* carried fewer larvae after the infestation than expected.
- **Solution:** The concentration of the infestation solution will be augmented and more good infested host fish will be used to collect the juvenile mussels.
- **Problem:** Installation of cages in the river Sûre not possible due to high water levels (Thunderstorms).
- **Solution:** This problem cannot be foreseen. If the water level allows, the installation of cages will be done in 2014.
- **Problem:** Fishes in the cages at the Our had to be released early due to Thunderstorms.
- **Solution:** This problem cannot be foreseen. If the water level allows, the installation of cages will be done in 2014.
- **Problem:** *Salmo trutta fario* seems to be not the optimal host fish.
- **Solution:** The Brown trout strain from the hatchery will not be used again for infestation. Instead more *Phoxinus phoxinus* from the source rivers Our and or Sûre will be used.

The time plan for this action is on schedule.

	2013				2014			
	I	II	III	IV	I	II	III	IV
C4								

	planned
	realized

5.1.11 Action C5: Régulation de la prédation du rat musqué

The muskrat are captured twice the year to reduce and/or to maintain the populations at a low level in the mussel rivers.

➤ Progress/results

In 2013 the capturing of the muskrats took place on the river Our from January to December. On the river Sûre the trapping was only done from June to December as in spring the water level was not ideal enough for setting the traps.

Floating traps have been built in order to avoid that tourists are accidentally touching the traps.



Figure 2: Floating trap for muskrats

03.02.2014 Meeting with Jan Herr from ANF in order to review the results of 2013 and plan the capturing season 2014. Placing the traps over the whole year produced quite good results, so that from now on the two hunters are no more limited just on spring and autumn.

In the following table are the number of muskrats which were caught at the two rivers are shown. The muskrats are evenly distributed along the rivers.

Table 4: Caught muskrat at the river Sûre and Our in 2013

Capturing period 2013	River Our	River Sauer
Nb. of muskrats	50	19

➤ **Realised**

Detail of capturing period and place, number of trapped muskrats, see Annex 8.

➤ **Problems encountered/delays**

There are no more problems. We solved the problem with the landowner by trapping above and below this property.

The time plan for this action is on schedule.

	2013				2014			
	I	II	III	IV	I	II	III	IV
C5		planned		planned		planned		planned
		realized		realized				

5.1.12 Action D1: Surveillance de la qualité de l'eau et du substrat interstitial

The water quality is a key issue for the protection of the thick shelled river mussel and is monitored within this action.

➤ Progress/results

The monitoring of the water quality of the river Our started in September 2012, followed by the river Sûre some weeks later in October 2012. This period is used to give an overview about the physico-chemical parameters of the two catchments. At the end of the next year we will probably be able to assess the water quality.

Once a week a sample from each river is taken and analyzed. The parameters temperature, pH value, conductivity, turbidity, oxygen concentration, ortho-phosphate, nitrite, ammonium and nitrate were determined.

Results of the online measurements from the river Our (own system, September 2013 to February 2014, and data from the online measuring container from the water administration board until March 2013) and the river Sûre (April 2013 to December 2013) provided by the water administration board are available.

It is important to know the water quality of most of the tributaries from both rivers, Our and Sûre. These results will help to evaluate further restoration measures (C1 and D4). Once per season, or if necessary more often for investigative monitoring, the tributaries are sampled. The tributaries and its springs have been sampled four time in the last period. The sampling points with a map and picture can be found in Annex 9.

For ten samples the concentration of several metals and pesticides were determined by the laboratory of the water administration (see Annex 3 / part 1.4).

➤ Deliverables

Annex 3 shows graphs of the measurements for both rivers and its tributaries.

➤ **Problems encountered/delays**

No problems encountered so far.

The time plan for this action is on schedule.

	2013				2014			
	I	II	III	IV	I	II	III	IV
D1	planned	planned	planned	planned	planned	planned	planned	planned
	realized	realized	realized	realized				

planned	
realized	

5.1.13 Action D2: Monitoring des poissons hôte

This action should give an overview about the host fish population in both rivers (Our and Sûre) and their tributaries.

➤ Progress/results

A permission from the MIGR to perform electric fishing in the river Our and Sûre and the respective tributaries was issued on November 25th, 2013 and is valid until 2015 (see Annex 10).

Electric fishing in the river Our 2013

- 06.06.2013: Electric fishing at the river Our (Grossenauel + Dornaualsmühle).

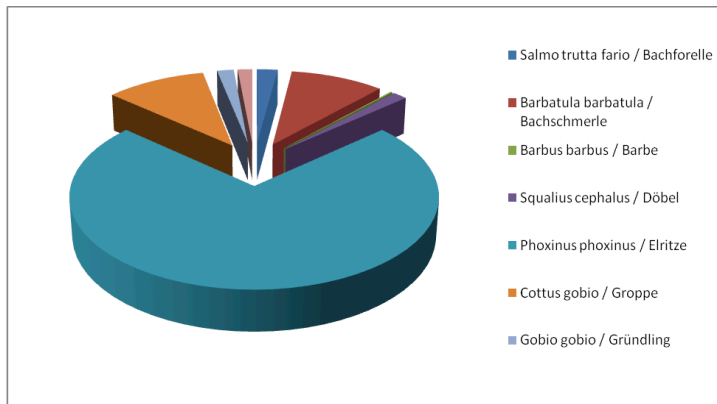


Figure 3: Fish composition in the river Our in summer 2013

Table 5: Infestation parameters of 3 fish species in the river Our at two sites

		Mean Intensity	Mean abundance	Prevalence [%]
Our Grossenauel	<i>Phoxinus phoxinus</i>	2,3	3,8	60
	<i>Cottus gobio</i>	0	0	0
	<i>Salmo trutta fario</i>	0	0	0
Our Dornaualsmühle	<i>Phoxinus phoxinus</i>	3,3	3,7	90
	<i>Cottus gobio</i>	0,2	1,0	22
	<i>Salmo trutta fario</i>	0	0	0

Electric fishing in the river Sûre 2013

- 01.07.2013 and 19.07.2013: Electric fishing at the river Sûre (Moulin de Bigonville, Wolsriech + Moulin d’Oeil, Heckerriech).

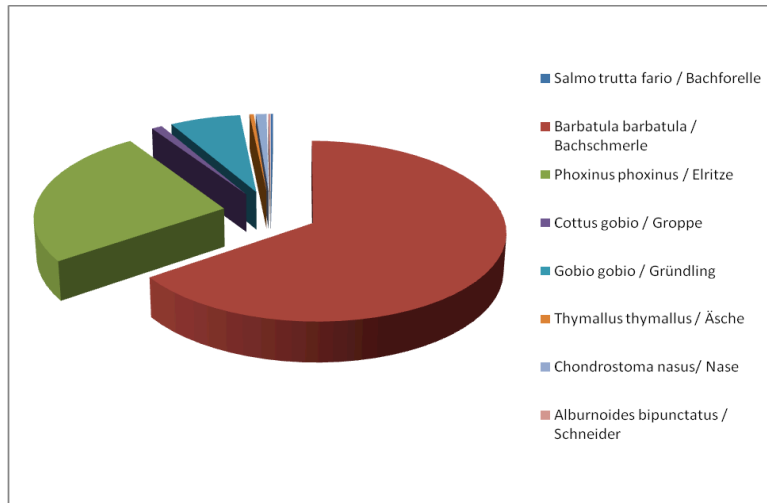


Figure 4: Fish composition in the river Sûre in summer 2013

Table 6: Infestation parameters of 3 fish species in the river Sûre at two sites (na: not available)

		Mean Intensity	Mean abundance	Prevalence [%]
Sûre Oeil	<i>Phoxinus phoxinus</i>	9,6	10,7	90
	<i>Cottus gobio</i>	0,1	1,0	11
	<i>Salmo trutta fario</i>	na	na	na
Sûre Bigonville	<i>Phoxinus phoxinus</i>	1,86	3,25	57
	<i>Cottus gobio</i>	na	na	na
	<i>Salmo trutta fario</i>	na	na	na

Electric fishing at 8 tributaries of the river Our

The following tributaries were analyzed by electric fishing in the river Our catchment in December 2013. Between 1 and 3 sites were analyzed per tributary, depending on the connectivity and size of the respective stream.

Table 7: Electric fishing at Our tributaries

Date	Tributary	Sites
02.12.2013	Träsbech	2
03.12.2013	Fallbech	1
03.12.2013	Etterbaach	1
03.12.2013	Holzbech	2
06.12.2013	Houschterbaach	3
06.12.2013	Gemünder Akeschterbaach	1
03.12.2013	Stolzebuerger Akeschterbaach	2
05.12.2013	Klangbaach	1

Electric fishing at 3 tributaries of the river Sûre

The following tributaries were analyzed by electric fishing in the river Sûre catchment in December 2013. Between 2 and 3 sites were analyzed per tributary, depending on the connectivity and size of the respective stream.

Table 8: Electric fishing at Sûre tributaries

Date	Tributary	Sites
04.12.2013	Syrbaach	3
04.12.2013	Froumicht	2
05.12.2013	Schwärzerbaach	3

A short report about the fish composition in the river Our and Sauer is available online at our internet site www.unio.lu. As soon as the report is completed with the results from the tributaries it will be available for download.

➤ **Realised**

As foreseen under this action:

In 2013: Electric fishing at the river Our and river Sûre at 2 sites in each case. Investigation of the natural infestation rate.

In 2013: Electric fishing at 8 tributaries of the river Our and 3 tributaries of the river Sûre.

➤ **Problems encountered/delays**

No problems encountered so far.

The time plan for this action is on schedule for the river Our and Sauer and was adapted for the tributaries as described in the inception report.

	2013				2014			
	I	II	III	IV	I	II	III	IV
D2		planned				planned		
		realized		realized				

planned
realized

5.1.14 Action D3: Suivi de *Unio crassus* dans son milieu naturel

The status of the *Unio crassus* populations in both rivers (Our and Sûre) was last investigated in 2003. To gain new information about the population size, age structure and habitat use, the intent of this action is to monitor the mussel population in both rivers.

➤ Progress/results

- Estimation of *Unio crassus* population density:

We used the visual method that consists in progressing with a bathyscope over the river bottom. One person at each riverside prospected over a width of about 3 m and over a distance of 500 m per river section. The prospection has been done on a fifth (6,2 km for a total of 30 km) of the river Our and a third (3,5 km for a total of 11,5 km) of the river Sûre.

By this method we found very low densities for both rivers:

Our: min. 0,005 ind/m², max 0,08 ind/m²

Sûre: min. 0,003 ind/m², max 0,13 ind/m²

- Estimation of *Unio crassus* population structure:

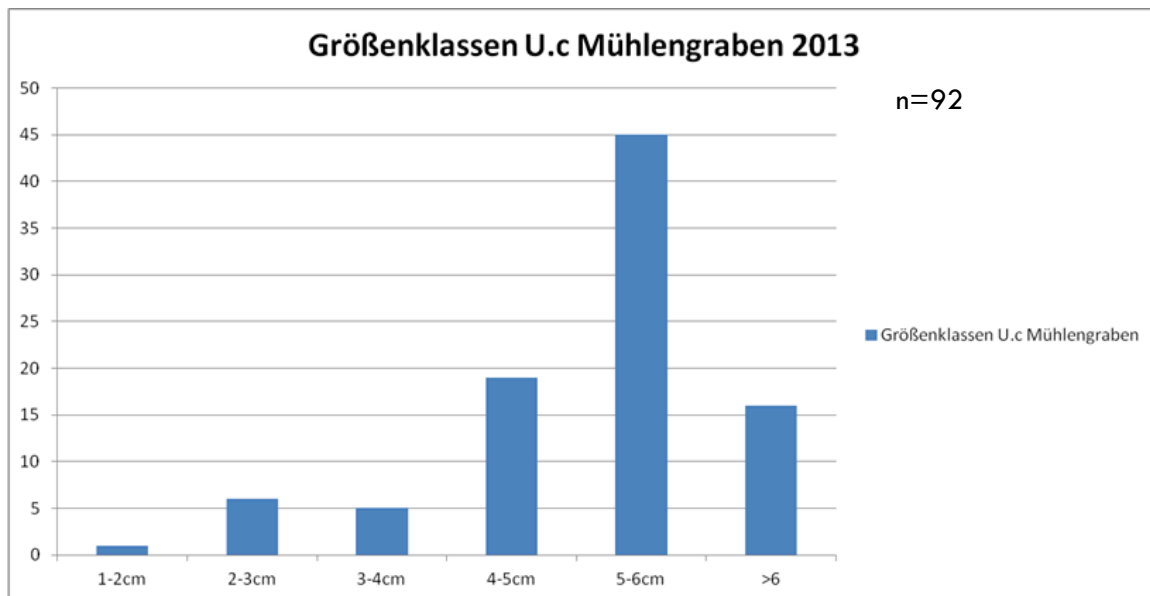


Figure 5: Size distribution of a *Unio crassus* population in the river Our

We collected 92 mussels in the river Our (visual method) and measured them in order to create age classes. Mussels with a length under 3 cm are considered as juveniles. 7,6 % of the mussels from that site were juveniles.

To have precise age dating with the help of the rings on the shell we asked a specialist from the Swedish Museum of Natural History in Stockholm to analyze about 25 mussels from each river Our and Sûre. This work will be done this year.

- Estimation of *Unio crassus* survival rate:

+/- 200 have been marked with tags on 2 banks in the river Our

+/- 45 mussels have been marked in the river Sûre

- Fertility control:

22-29.04.2013 Gravidity control of the mussels. Gravid mussels, 50 for the river Sûre and 100 for the river Our, were transferred to the mussel rearing station. After the release of their glochidia they were placed back to the rivers.

- Mussel release

First mussels will be released after the third year, so in 2016.

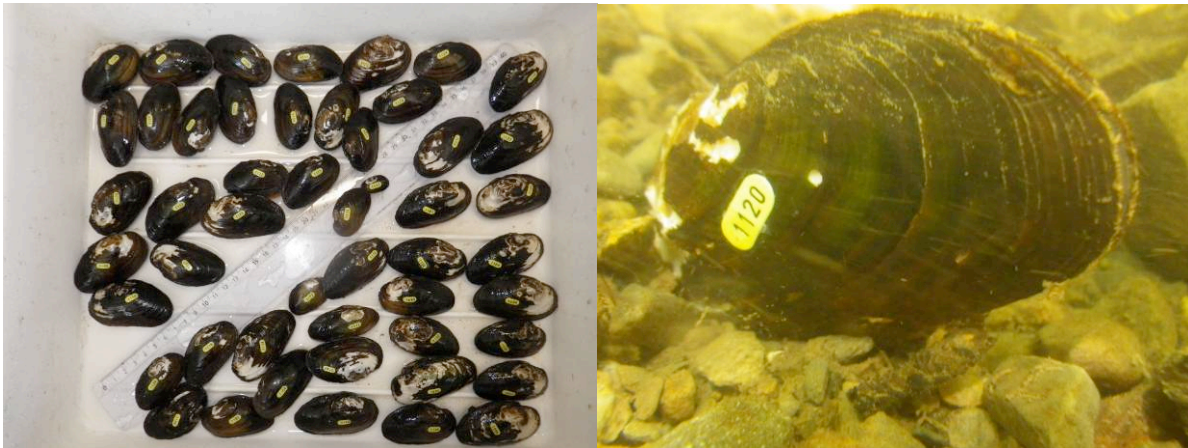


Figure 6: Tagged mussels

➤ **Realised**

	Our (30 km)	Sûre (11,5 km)
Prospected (km)	6,2	3,5
mussels alive	1049	686
empty shells	684	454

- Offer age determination (see Annex 11).
- Monitoring site Our (see Annex 12).
- Monitoring site Sûre (see Annex 12).

➤ **Problems encountered/delays**

- It was planned to determinate the sediment fractions of the banks where many mussels are concentrated. However as the monitoring of the mussels is time consuming and as in 2013 the prospecting conditions were very often insufficient particularly on the Sûre we preferred to progress with the monitoring. The analysis will be done when several big mussel banks will be located on both rivers.

No other problems encountered so far.

The time plan for this action is on schedule.

	2013				2014			
	I	II	III	IV	I	II	III	IV
D3		planned	planned			planned	planned	
		realized	realized					

	planned
	realized

5.1.15 Action D4: Monitoring et évaluation de l'impact des mesures concrètes

The aim of this action is to develop and apply a pre- post-monitoring protocol in order to evaluate the effectiveness of the used restoration methods.

➤ **Progress/results**

The initial status quo of water quality and population of *Unio crassus* will be used as reference for the evaluation of prospective measures.

The success of the restoration measures will be evaluated by the monitoring of concrete parameters (water quality, turbidity, quality of substrate and the host fish population).

The monitoring of the water quality of the rivers Our, Sûre and their tributaries is in operation. (see D1).

Sediment traps have not been installed in the river Our and Sûre and their tributaries as the sites can only be chosen after most parts of the initial mapping has been done and restoration sites have been chosen.

The composition of the host fish population was already monitored at all relevant sites (see D2).

The monitoring of the *Unio crassus* population in its natural environment started in spring 2013 (see D3).

The redox electrode was already tested and will used at the sites where restoration measures are foreseen (see A3 and D1).

The mussel breeding started in spring 2013 (see C4).

➤ **Realised**

A good overview about water quality (D1), host fish population (D2) and *Unio crassus* population (D3) is achieved. For water quality see for instance Annex 3.

➤ **Problems encountered/delays**

No problems encountered so far.

The time plan for this action is on schedule.

	2013				2014			
	I	II	III	IV	I	II	III	IV
D4	planned	planned	planned	planned	planned	planned	planned	planned
	realized	realized	realized	realized				

	planned
	realized

5.1.16 Action D5: Analyse de l'impact socio-économique du projet et de l'effet sur les écosystèmes

The objective is to assess the impact of the Life Nature project on the welfare of the region and its populations.

➤ **Progress/results**

This action is not scheduled for the moment.

➤ **Realised**

No deliverables are foreseen for the moment.

➤ **Problems encountered/delays**

No problems encountered so far.

The time plan for this action is on schedule.

	2013				2014			
	I	II	III	IV	I	II	III	IV
D5								

	planned
	realized

5.1.17 Action E1: Information et sensibilisation des acteurs concernés

The reduction of the input of fine sediments in the aquatic ecosystem is of great importance in the present Life project. This action intends to inform all actors responsible for water quality in the river catchment and tries to motivate them to help to enhance the water quality.

➤ Progress/results

We try to keep a good contact and to have regular exchange with the different authorities and with the farmers of the project area.

Planning of the first water forum for the river Our catchment has been done and all actors have been invited (Program, see Annex 13). The water forum will take place in Heinerscheid on April 2nd 2014.

The fist water forum for the river Sûre catchment is foreseen to take place in fall 2014.

The organisation of the second farmer information event has started and will take place in winter 2014.

➤ Realised

We had about 23 meetings and contacts with authorities and other actors in 2013 (see Annex 14). In general the meetings help the interlocutors to understand the challenge of the project in order to facilitate the implementing of the measures.

27.11.2013: Seminar for farmers "Loss of soil through water erosion - protect soil using good practice methods", about 70 participants (farmers) what is a very good result. (Program and invitation see Annex 15).

➤ Problems encountered/delays

No problems encountered so far.

The time plan for this action is on schedule.

	2013				2014			
	I	II	III	IV	I	II	III	IV
E1		planned				planned	planned	
	realized	realized	realized	realized	realized			

planned
realized

5.1.18 Action E2: Sensibilisation du grand-public

This action tries to inform people about the sense of the Natura 2000 network and the overall intent of the project by the following means:

1. Information of the population: 1 session/river at the beginning and end of the project.
2. Press release: 100-150 articles
3. Project Flyer: 1
4. Notice board: 2
5. Film: 1
6. Exhibition: 1
7. Natura 2000 visiting room: 1

➤ Progress/results

1. Information of the population:
 - This start information event has already been done in the last period.
 - Groups of people visiting the mill are informed all over the year (see Annex 16).
2. Press release: 11 articles in 2013(Annex 17).
3. Project Flyer
 - The content of the Flyer is finished. The layout is being done by the company MUM at the moment. (Annex 18).
4. Notice board
 - Work will start in 2014.
5. Film
 - Work will start in 2014.
6. Exhibition:
 - The exhibition was presented on the following occasions in 2013:
 - Naturparkfest in Naturpark Our/ Hosingen, 08.08.2013.
 - Seminar for farmers, 27. 11.2013
 - " Loss of soil through water erosion - protect soil using good practice methods "
7. Natura 2000 visiting room:
 - After the restoration of the old house at the mill, a Natura 2000 visting room will be installed. The restoration has already started and is financed as a part of a "hors life" project by Oeuvre Nationale de Secours Grande-Duchesse Charlotte, a Luxemburgish public establishment that manages the National Lottery. The Natura 2000 room is planned to be ready for spring 2015.

➤ Realised

- Flyer,
- 5 exhibition boards,
- Different press articles in printed and online media.

Progress Report

About 460 people were informed during different visits at the mill and other events.

➤ **Problems encountered/delays**

No problems encountered so far.

The time plan for this action is on schedule.

	2013				2014			
	I	II	III	IV	I	II	III	IV
E2	planned	planned	planned	planned	planned	planned	planned	planned
	realized	realized	realized	realized				



Figure 7: Visit of school class at the mill



Figure 8: Information desk at the "Naturparkfest 2013"

5.1.19 Action E3: Création d'un site Web

Creation of a website. The project homepage will give the opportunity to inform all interested persons about the progress of project. Furthermore technical documents, provided as download, should help other projects working in a similar field.

➤ Progress/results

Since June 2013 the website is fully accessible in all three languages (English, French and German). The download section called "Project-Data" is also online and first documents are available.

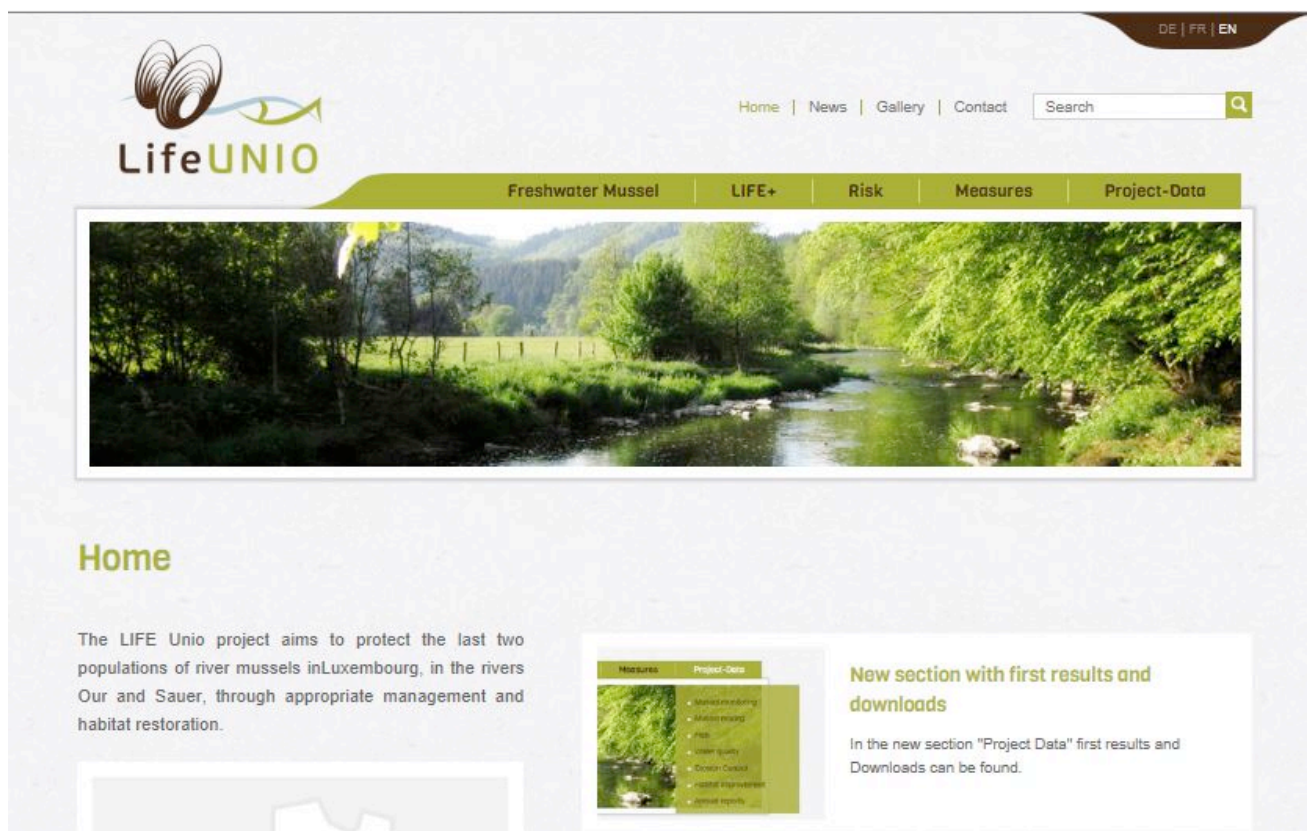


Figure 9: Screenshot of the entrance page

To keep the site attractive we try to add news at least once per month.

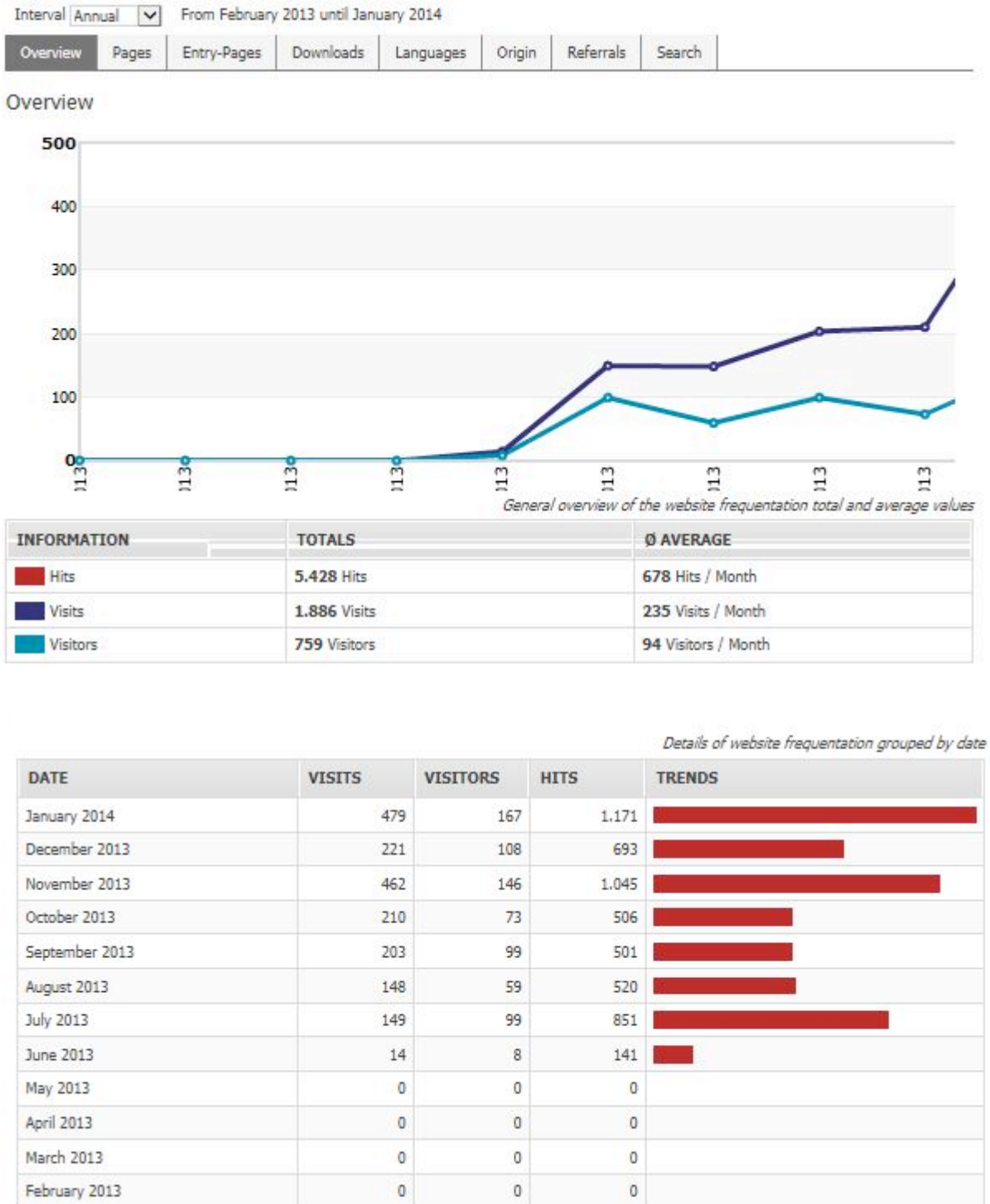


Figure 10: Web statistics

The number of visitors and visits is increasing since June. However we would be happy to increase this number further. The mentioning of the website "www.unio.lu" at every event and in every publication will help to increase the number of visits.

➤ **Realised**

Website in three languages realised.

➤ **Problems encountered/delays**

No problems encountered so far.

The time plan for this action is on schedule.

	2013				2014			
	I	II	III	IV	I	II	III	IV
E3		planned		planned		planned		planned
		realized		realized				

	planned
	realized

5.1.20 Action E4: Organisation de séminaires

To promote the scientific exchange with other Life projects or other scientists working in the same field, two scientific seminars are planned within the project.

➤ **Progress/results**

The first seminar is planned for January February 2014.

The working group www.flussperlmuschel.at organized a international meeting on freshwater mussels in November 2013. Organizing the next international meeting only 2-3 months later makes no sense and it would be more difficult to attract scientist to visit our meeting.

The LIFE+ France « Rivières vivantes de Bretagne et de Normandie : Mobilisation pour le retour de la moule perlière d'eau douce » (<http://www.life-moule-perliere.org/accueilmoule.php>). is organizing their scientific meeting in fall 2014 (September-November, date not yet fixed). In order to not overlap with this meeting we decided to organize our meeting in May-June 2015.

From our experience in organizing scientific meetings during the LIFE project Freshwater Pearl Mussel, we know that the organization (first announcement) should start about one year in advance.

Until mid 2014 we will choose a date and place for 2015 and send out the first announcements.

➤ **Realised**

No deliverables are foreseen for the moment.

➤ **Problems encountered/delays**

No problems encountered so far.

The time plan for this action is changed as discussed above.

	2014				2015				
	I	II	III	IV	I	II	III	IV	
E4									
			start organizing						

	planned
	Realized
	New plan

5.1.21 Action F1: Gestion et encadrement du projet

➤ **Progress/results**

Project management staff:

The definitive composition of the project staff is the following:

Coordinator 60%: Alexandra Arendt biologist

Scientific 1 50%: Frankie Thielen Dr.rer.nat.

Scientific 2 50%: Sonja Heumann Dr. tech.

Technician 100%: Léo Klein environmental technician

Secretary/accountancy 40%: (LIFE 11 NAT/LU/857) 20% (LIFE 11 NAT/LU/858)
Patricia Heinen secretary

Piloting committee

Our second meeting of the piloting committee took place on 10.07.2013.

Grant agreement

The grant agreement of the Co-financer MIGR has been signed on 11 march 2013

➤ **Realised**

- Report and presentation from the second piloting committee (see Annex19).
- Grant agreement with the financial partner MIGR (see Annex 20).

➤ **Problems encountered/delays**

No other problems encountered so far.

The time plan for this action is on schedule.

	2013				2014			
	I	II	III	IV	I	II	III	IV
F1	planned	planned	planned	planned	planned	planned	planned	planned
	realized	realized	realized	realized				

planned
realized

5.1.22 Action F2: Echange du savoir avec d'autres projets: LIFE et autres

The intent of this action is the regular exchange with all other project (Life, but also others) working in the field of freshwater mussel conservation. The aim is achieved by attending scientific meetings and regular email exchange with other experts.

➤ Progress/results

During the report period we attended the following scientific seminars:

- FMCS (Freshwater mollusk conservation society) 8th Biennial Symposium 2013. Recovery & Restoration from Concept to Implementation. Guntersville Alabama USA 10-14.03.2013 (Poster & oral presentation).
- Yearly mussel meeting in Bavaria: 05. März 2013, Fachtagung: Strategien im Muschelschutz – Aktuelle Entwicklung in Bayern und Europa (Poster & oral presentation).
- Symposium for European Freshwater Sciences, with special session on Life projects 1-5.07.2013 Münster, Germany (oral presentation).
- Life + Conservation de la moule perlière d'eau douce dans le massif armoricain 19-22.06.2013. Meeting of the scientific committee.
- Interlife Bretagne 23-25.10.2013 (oral presentation)
- International Meeting on Improving the Environment for the Freshwater Pearl Mussel, 13.11-14.11.2013, Weinberg, Kefermarkt, Austria (Poster & oral presentation).

Regular email exchange occurs with the following projects and experts:

- UC for Life Sweden (<http://www.ucforlife.se/en/>).
- LIFE+ Project Margal-Ulla Galicia Spain (<http://margalulla.xunta.es/en>).
- LIFE+ France « Rivières vivantes de Bretagne et de Normandie : Mobilisation pour le retour de la moule perlière d'eau douce » (<http://www.life-moule-perliere.org/accueilmoule.php>).
- Austrien Freshwater Pearl Mussel Project (<http://www.flussperlmuschel.at>)
- Rachel Mair White Sulphor Springs National Fish hatchery (<http://www.fws.gov/northeast/wssnfh/>).
- Prof. Dr. Chris Barnhart, Missouri State University (<http://courses.missouristate.edu/ChrisBarnhart/home/Default.htm>).
- Megan Bradley Aquatic Wildlife Conservation Center, Marion, Virginia, (<http://www.dgif.virginia.gov/awcc/>)
- Jürgen Geist group TU München (<http://fisch.wzw.tum.de>).

- Heidi Sehlheim, Charlotte Bontinck and Grégory Motte, Projekt Habitat Euregio + Biologische Station Aachen, Parc naturel hautes fagnes (<http://www.euregio-mr.com/de/service/archiv/2010/das-projekt-201ehabitat-euregio201c>).
- Arno Schwarzer ECOLOGIS(<http://www.ecolo-gis.de>)
- Dr. Manuel Seeger, Institut für Physische Geographie, University Trier, Germany (<http://www.uni-trier.de/index.php?id=18521>)

➤ **Realised**

Posters from the FMCS Meeting in Alabama USA (Annex 21)

➤ **Problems encountered/delays**

No problems encountered so far.

The time plan for this action is on schedule.

	2013				2014			
	I	II	III	IV	I	II	III	IV
F2	planned	planned	planned	planned	planned	planned	planned	planned
	realized	realized	realized	realized				

	planned
	realized

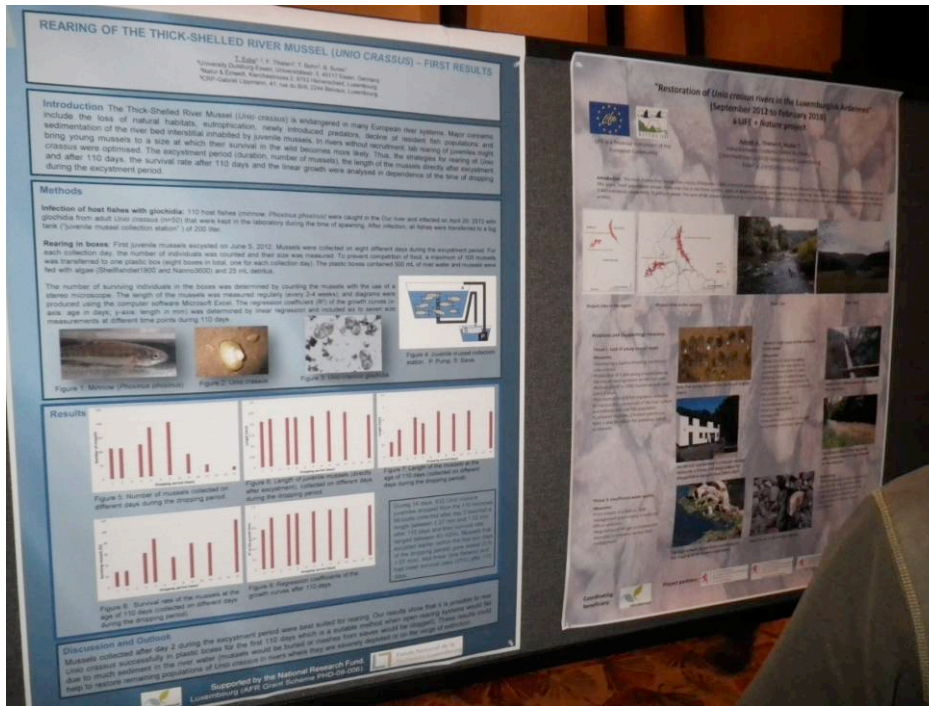


Figure 11: Posters on *Unio crassus* at the FMCS Meeting in Alabama USA

5.1.23 Action F3: Plan de conservation After-LIFE

Action to install a afterlife program

➤ **Progress/results**

This action is not scheduled for the moment.

➤ **Deliverables**

No deliverables are foreseen for the moment.

➤ **Problems encountered/delays**

No problems encountered so far.

The time plan for this action is on schedule.

	2013				2014			
	I	II	III	IV	I	II	III	IV
D5								

	planned
	realized

5.1.24 Overall Timetable

	2012				2013				2014				2015	
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II
A1			■	■	■	■								
			■	■	■	■	■	■	■	■				
A2					■	■	■	■	■	■				
					■	■	■	■	■					
A3			■	■	■	■	■	■	■					
			■	■	■	■	■	■	■					
A4			■	■	■	■	■	■	■	■	■	■		
			■	■	■	■	■	■	■					
A5						■	■	■	■			■	■	■
						■	■	■	■					
	2012				2013				2014				2015	
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II
B1				■	■			■	■			■	■	
				■	■			■	■			■		
	2012				2013				2014				2015	
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II
C1							■	■	■	■	■	■	■	■
									■					
C2									■	■	■	■	■	■
									■					
C3			■	■			■	■			■	■		
							Our				Our	Sauer		
C4						■	■	■	■	■	■	■	■	■
						■	■	■	■					
C5				■		■		■		■		■		■
				■		■		■						
	2012				2013				2014				2015	
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II
D1				■	■	■	■	■	■	■	■	■	■	■
				■	■	■	■	■	■					
D2						■				■				■
						■		■						
D3						■	■			■	■			■
						■	■							
D4				■	■	■	■	■	■	■	■	■	■	■
				■	■	■	■	■	■	■	■	■	■	■

	2012				2013				2014				2015	
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II
D5														
E1														
E2														
E3														
E4														
F1														
F2														
F3														

	planned
	realized
	intent

Section 5.3 Impact

Nature and Biodiversity:

We have not realized any measures so far to avoid erosion in the project area. For the moment our actions are limited to mapping. Therefore there is no visible and measurable impact on the habitat of the targeted species *Unio crassus*. However to reduce the loss of mussels by predation, muskrats were trapped in both project areas. It is known that a lower density of muskrats means less mussel mortality.

Environmental Policy and Governance:

In order to tackle environmental issues we take a lot of samples to get an overview about the water quality and structure. Because of the small catchment area we decided to work on springs and tributaries as we think it is easier to demonstrate impacts of measures. This allows us to work out strategies in order to reduce pollution and disturbing factors. Later on other stakeholders can use our methods too.

Progress Report

Information and Communication:

This impact is in line with our expectations because for example farmers already know the project. This can be seen in the amount of attendees (70 participants) at our erosion conference in November 2013. On the other hand we keep in touch with local, regional and national authorities to get or exchange information. We hope that by organizing water quality forums in April and November 2014 we will be able to improve this exchange. However, the authorities are already informed about our project at several other occasions.

Indirect impacts:

We provide our knowledge and experience to the local authorities, to students of the national School for Agriculture and interested persons (landowners, farmers, forest rangers, ...). At the moment we got no feed back.

Section 5.4 Outside LIFE

The Administration of Water accepted to analyze samples of springs in the catchment area of Our to determine pesticides, heavy metals, drugs and polycyclic aromatic hydrocarbon. They are complementary to water sampling of the project and should be repeated several times.

Dead mussels are sent to specialized institutes to make examination on the tissues.

The working out of a rearing method for *Unio crassus* is conducted with the help of a PHD-09-006 supported with a Grant by the National Research Found Luxembourg.

The director of n&ë-Fondation Hëllef fir d'Natur attends regularly the "Observatoire Nationale" whose mission it is to help the Ministry of Environment to define policy in matters of nature protection and to evaluate the conservation status of nature in Luxembourg. Actually the "Observatoire Nationale" works out recommendations for the new "rural development plan (Plan de Développement rural 2014-2020). The Life team has informed the director for the need of a new agriculture scheme in order to give mussels a future in the river catchments Our and Sûre.

6 FINANCIAL PART

6.1 Costs incurred

Budget breakdown categories	Total cost in €	Costs incurred from the start date to 10.02.2014	% of total costs
Personnel	€ 1.089.312,00	€ 204.789,87	18,80%
Travel	€ 38.049,00	€ 5.108,51	13,43%
External assistance	€ 272.100,00	€ 17.106,67	6,29%
Durable goods - Equipment	€ 222.100,00	€ 93.816,10	42,24%
Land/rightspurchase/lease	€ 81.600,00	€ 18.002,57	22,06%
Consumable material	€ 31.939,00	€ 6.774,38	21,21%
Other direct costs	€ 238.413,00	€ 18.680,79	7,84%
Overheads	€ 83.555,00	€ 18.194,10	21,78%
TOTAL	€ 2.057.068,00	€ 382.473,00	18,59%

All expenses in all budget categories are within a reasonable range. The most expensive equipment has been already bought. The portable online measurement system will be around 15.000 €. We do not expect any problems with the budget.

Action number and name	Foreseen costs	Spent so far	Remaining	Projected final cost
Action A: Preparatory actions, elaboration of management plans and/or of action plans				
A1	21.065,00 €	4.188,31 €	16.876,69 €	
A2	41.679,00 €	4.689,99 €	36.989,01 €	
A3	53.745,00 €	20.904,66 €	32.840,34 €	
A4	27.302,00 €	6.020,55 €	21.281,45 €	
A5	19.999,00 €	3.644,75 €	16.354,25 €	
Action B: Purchase/lease of land and/or compensation payments for use rights				
B1	99.679,00 €	21.286,36 €	78.392,64 €	
Action C: Concrete conservation actions				
C1	124.578,00 €	6.928,53 €	117.649,47 €	
C2	131.152,00 €	2.038,97 €	129.113,03 €	
C3	58.562,00 €	10.648,44 €	47.913,56 €	
C4	527.770,00 €	146.680,58 €	381.089,42 €	
C5	7.917,00 €	1.603,90 €	6.313,10 €	
Action D: Monitoring of the impact of the project actions (obligatory only if there are concrete conservation actions)				
D1	125.884,00 €	6.108,34 €	119.775,66 €	
D2	28.802,00 €	5.342,83 €	23.459,17 €	
D3	34.583,00 €	5.076,30 €	29.506,70 €	
D4	27.856,00 €	3.319,22 €	24.536,78 €	
D5	14.107,00 €	2.556,06 €	11.550,94 €	
Action E: Public awareness and dissemination of results (obligatory)				
E1	36.292,00 €	5.560,18 €	30.731,82 €	
E2	115.422,00 €	18.895,23 €	96.526,77 €	
E3	20.821,00 €	9.833,89 €	10.987,11 €	
E4	28.774,00 €	3.211,59 €	25.562,41 €	
Action F: Overall project operation and monitoring of the project progress (obligatory)				
F1	348.039,00 €	61.239,78 €	286.799,22 €	

F2	79.485,00 €	14.500,44 €	64.984,56 €	
F3				
Overheads	83.555,00 €	18.194,10 €	65.360,90 €	
TOTAL:	2.057.068,0 0 €	382.473,00 €	1.674.595,00 €	

7 ANNEXES

All annexes as listed in the text above can be found in the extra Annex document.

Annex 1: Action A2: Planification des mesures de restauration

- Priority List erosion on and of farmland
- Priority list "Erosion on or beside forestry and rural roads"

Annex 2: Action A2: Planification des mesures de restauration

- Refusal Sûre Belgium
- Authorisation Sûre Luxembourg
- Authorisation Our Luxembourg

Annex 3: Action A3: Planification de la surveillance de la qualité de l'eau et du substrat interstitial +

Action D1: Surveillance de la qualité de l'eau et du substrat interstitial

- Report about water the water quality in the river Our, river Sûre and tributaries

Annex 4: Action A4: Mise en place de la technique d'élevage pour *Unio crassus*

- authorisation for handling *Unio crassus* in the river Our, river Sûre

Annex 5 : Action A5: Contribution à l'élaboration des plans de gestion Natura 2000 "Our" et "Haute-Sûre"

- financement approuvé
- lettre offre PGN2000 Our_Sûre
- offre_n&e_Haute-Sûre_Our

Annex 6: Action B1: Acquisition de terrains le long de l'Our, de la Sûre et de leurs affluents

- acquisitions 2013
- Notarial act
- aerial photo with the localisation of the acquisition

Annex 7: Action C2: Transformation d'obstacles à la migration sur les cours d'eau tributaires

- Priority list fish obstacles

Annex 8: Action C5: Régulation de la prédation du rat musqué

- Muskrat-trapping 2013

Annex 9 : Action D1: Surveillance de la qualité de l'eau et du substrat interstitiel

- Report about spring sampling points with maps and pictures

Annex 10 : Action D2: Monitoring des poissons hôtes

- authorisation to conduct electric fishing in the river Our, river Sûre and tributaries

Annex 11: Action D3: Suivi de *Unio crassus* dans son milieu naturel

- Offre Elene Dunca 2013.pdf

Annex 12: Action D3: Suivi de *Unio crassus* dans son milieu naturel

- Monitoring *Unio* Our
- Monitoring *Unio* Sûre

Annex 13 : Action E1: Information et sensibilisation des acteurs concernés

- Invitation letter for first water forum in the river Our catchment

Annex 14: Action E1: Information et sensibilisation des acteurs concernés

- Meetings with different authorities and stakeholder during 2013

Annex 15: Action E1: Information et sensibilisation des acteurs concernés

- Invitation for the first information event for farmers

Annex 16: Action E2: Sensibilisation du grand-public

- Visits at the mill of Kalborn in 2013

Annex 17: Action E2: Sensibilisation du grand-public

- Press release

Annex 18: Action E2: Sensibilisation du grand-public

- Draft - Flyer

Annex 19: Action F1: Gestion et encadrement du projet

- compte rendu 2013 07 23 LIFE UNIO 2ième Comité de Pilotage
- 2ième comité de pilotage 10.07.2013

Annex 20: Action F1: Gestion et encadrement du projet

- Grant agreement with the financial partner MIGR

Annex 21: Action F2: Echange du savoir avec d'autres projets: LIFE et autres

- Poster from Alabama Meeting