

Freshwater Matters is a monthly electronic bulletin of the most recent freshwater news from around the world, compiled by the Freshwater Biological Association (FBA). It includes updates of what is happening at the FBA and ways to get involved.

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What's happening at the FBA?

FBA recruiting for new Chief Executive

The FBA is currently recruiting for the position of Chief Executive and invites interested candidates to apply by 10am on 10 October 2014. We are seeking to appoint a Chief Executive who understands the business operating imperatives that combine to make an organisation sustainable in the long term and can lead the implementation of FBA's strategy.

For more information please visit our website <https://www.fba.org.uk/fba-chief-executive-position>, where you can view the full job advert and download the information pack.

Successful glochidial releases for freshwater pearl mussel captive rearing programme

We are pleased to report that six out of the seven populations of freshwater pearl mussel currently being captive reared at the FBA have released their larvae (known as glochidia) which have encysted upon host fishes. Glochidia will remain on their hosts until next spring when we will collect them as they drop off as juvenile mussels. They will then be placed into clean gravels to continue their growth and development.

This month's articles

Dams vs. rivers

This month saw the launch of "The State of the World's Rivers", an interactive database that provides information on the relationship between dams and river health. The database demonstrates that river fragmentation due to dam building is highly correlated with poor water quality and low biodiversity in many of the world's great river basins.

<http://www.enn.com/wildlife/article/47761>

Water stress may curtail fracking, says WRI

Following last month's study of the environmental consequences of fracking, a new report suggests that water shortages may hinder the development of the industry in many parts of the world. The study, carried out by the World Resources Institute, found that over a third of the world's shale resources are situated in arid or severely water stressed regions.

<http://www.bbc.co.uk/news/business-29020555>



Lake Baikal “turning into swamp” ecologists warn

The Russian government has launched a multimillion dollar plan to address pollution in Lake Baikal after a meeting of experts warned that the lake is turning into a swamp due to the thousands of tons of waste that are released into it every year.

<http://www.ibtimes.com/lake-baikal-worlds-largest-freshwater-body-turning-swamp-ecologists-say-1682512>

New species of extinct river dolphin sheds light on evolution of freshwater cetaceans

Despite similar appearances many of the extant species of river dolphin are in fact only distantly related. Now researchers studying a new fossil dolphin species believe that it may shed light on the evolutionary relationship between species and provide clues to their shared ancestry.

<http://www.scienceworldreport.com/articles/17096/20140910/new-species-extinct-river-dolphin-sheds-light-evolution-freshwater-cetaceans.htm>

Freshwater crustaceans in Western Ghats face extinction

A lack of data coupled with growing human pressures may be driving several shrimp and crab species in the Western Ghats, India, to extinction.

<http://www.thehindu.com/news/national/kerala/freshwater-crustaceans-in-western-ghats-face-extinction/article6404407.ece>

River Spey pearl mussels killed in millions, say conservationists

Pollution has killed millions of pearl mussels (*Margaritifera margaritifera*) in the River Spey over the last fifteen years according to research published this month by the James Hutton Institute. The group has identified pollutants from detergent and fertiliser as being a major cause of harm. It is hoped that the study will help with the identification of conservation measures that can help reduce the risk to the rare species.

<http://www.bbc.co.uk/news/uk-scotland-highlands-islands-29203652>

Counting fish teeth reveals regulatory DNA changes behind rapid evolution

Scientists working on the genetics of the common 3-spined stickleback (*Gasterosteus aculeatus*) have uncovered the role that regulation of genes can play in allowing species to rapidly adapt to changing environments. As the stickleback can be found in both freshwater and marine systems, breeding different populations together allows researchers to examine the role of different genes. The research, published in the *Proceedings of the National Academy of Sciences*, suggests that rather than mutations, adaption to new environments can come about through the regulation of a functional gene.

<http://www.redorbit.com/news/science/1113238233/rapid-evolution-in-sticklebacks-091914/>

Judging a fish by its colour: For female bluefin killifish, love is a yellow mate

The use of computer-controlled robot fish has overturned our previous understanding of mate choice in killifish. The females prefer yellow fins to blue or red. This study points to the value of using computers and robotic tools in behavioural studies. The use of such techniques allows the standardisation of stimuli that can help researchers better understand the response of the target species.

<http://www.sciencedaily.com/releases/2014/09/140916101954.htm>

Microplastic pollution discovered in St. Lawrence River sediments

Research conducted by a team at McGill University and published this month in the *Canadian Journal of Fisheries and Aquatic Sciences* reports the concentration of microplastics in the St. Lawrence river to be as high as those observed in the world’s most contaminated marine sediments. This is the first time that such pollutants have been found in freshwater sediments.

http://www.eurekalert.org/pub_releases/2014-09/csp-mpd091814.php



The science behind swimming: From whales to larvae, common principles at work in swimming

A handful of simple hydrodynamic principles govern the way that virtually every animal on earth propels itself through the water according to research published in *Nature Physics*.

<http://www.sciencedaily.com/releases/2014/09/140915102113.htm>

Please forward this bulletin to any of your colleagues who may be interested!

