Universität Basel

Research Project

STRESSFLEA: How to live in a mosaic of STRESSors - an ecological genomics approach on the water FLEA (09-EuroEEFG-FP-040)

Third-party funded project

Project title STRESSFLEA: How to live in a mosaic of STRESSors - an ecological genomics approach on the water FLEA (09-EuroEEFG-FP-040)
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Organisation / Research unit
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Department
Project start 01.09.2010
Probable end 31.08.2013
Status Completed
STRESSFLEA will develop and use genomics tools to unravel patterns and mechanisms of adaptation to anthropogenic and natural stressors in natural populations of the water flea Daphnia magna.

STRESSFLEA has three objectives:
1.ăă ăObtaining insight into the functional genomic underpinning of genetic adaptation to specific stressors. Combining genome scans, candidate gene approaches and QTL mapping, we will identify genes underlying specific adaptations along environmental gradients.
2.ăă ăObtaining insight into the mechanisms by which natural Daphnia populations respond to multiple stressors, using genomics tools to identify processes responsible for correlated genetic responses (trade-offs, pleiotropy, linkage).
3.ăă ăReconstructing evolutionary processes at large spatial and temporal scales through the use of genomic markers linking variation at specific genes to trait values and fitness.
STRESSFLEA will invest strongly in the development of genomics tools and thus contribute to the development of Daphnia magna as a key model system in ecological and functional genomics of stress responses. Daphnia magna is one of the best studied species in ecology, evolution and ecotoxicology. Combining this knowledge with functional genomics provides unique opportunities to understand the mechanistic underpinning of local adaptation to complex selection gradients in nature.ă ă

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