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| Title: | Feeding in murky waters: acclimatization and landmarks improve foraging efficiency of zebrafish (Danio rerio) in turbid waters |
| Authors: | Sekhar, M.A. (/jspui/browse?type=author&value=Sekhar%2C+M.A.) Singh, Richa (/jspui/browse?type=author&value=Singh%2C+Richa) Bhat, Anuradha (/jspui/browse?type=author&value=Bhat%2C+Anuradha) Jain, Manjari (/jspui/browse?type=author&value=Jain%2C+Manjari) |
| Keywords: | Anthropogenic Change Spatial Cognition Behavioural Plasticity Navigation Visual Cue |
| Issue Date: | 2019 |
| Publisher: | The Royal Society |
| Citation: | Biology Letters, 15(7) |
| Abstract: | Fish inhabiting human-dominated ecosystems are prone to altered sensory environments in which they must live and function. Increased turbidity is one such change that they must deal with. We tested whether an increase in water turbidity and the presence of visual landmarks (coloured stones) affect the foraging efficiency of wild zebrafish. We also tested the influence of extended exposure to differing turbidity levels on the subsequent foraging efficiency of acclimatized individuals. Feeding latency (time taken to find food) increased significantly with increase in turbidity levels from a minimum of 4 s to ca 300 s. However, extended exposure of fish to varying levels of turbidity decreased feeding latencies in acclimatized conditions, indicating that acclimatization to the immediate visual environment plays an important role in determining foraging success. Most significantly, we found that feeding latencies in turbid conditions decreased significantly if visual landmarks were present. This demonstrates that zebrafish use visual landmark cues to navigate to foraging sites when visibility is impaired. This study has important implications on the role of behavioural plasticity and spatial learning in animals that allow them to cope with altered sensory environments such as episodes of enhanced turbidity that could be natural or anthropogenic. |
| URI: | https://royalsocietypublishing.org/doi/10.1098/rsbl.2019.0289 (https://royalsocietypublishing.org/doi/10.1098/rsbl.2019.0289) http://hdl.handle.net/123456789/2359 (http://hdl.handle.net/123456789/2359) |
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