

Project Update: March 2006

Project title: Effects of anthropogenic disturbance on stream fish assemblages of Bwindi Impenetrable National Park and implications for sustainable use

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Background and objectives: Little is known scientifically about small forest streams in the tropics, yet, their fisheries are important to the local population as a source of food and communities around Bwindi have requested access to rivers inside the park for fish as a multiple use resource. Between February 2003 and May 2004 we carried out an assessment of fish resources in Bwindi streams and surrounding areas. The inventory was carried out to quantify fish fauna diversity and richness across a gradient of land use and to explore potential exploitation issues. In addition, local communities surrounding the park were interviewed for their views on how best the fishery resource can be utilized.

Approach and methods: Sixteen sites in and around Bwindi Impenetrable National Park were selected and categorized into four deforestation categories; agricultural, degraded upstream, semi-forested, and forested sites. Fish fauna diversity at each of the sites was sampled using experimental gillnets, minnow traps, and seine nets with effort standardized across the sites. In addition, environmental variables were measured at each of the sites to determine the best predictors of fish assemblage structure.

Major results: Eighteen species of fish from 12 genera and seven families were documented including three Albertine Rift Endemics, three migratory and three un-described species. One species, *Amphilius uranoscopus* is a new record for Uganda. The local communities suggested various methods of sustainable fisheries management such as controlled fishing, provision of fish fry from the forest streams, and ecotourism through sport fishing. In this study, four publications are likely to be published in internationally acclaimed scientific journals. In 2004, I presented results of the study at the annual meeting of the Society for Conservation Biology (SCB) at The University of British Columbia, New York. In June 2006 I will present a poster at the SCB annual meeting in San Jose, California. Abstract title: Limnology of high-altitude Rainforest Rivers along disturbance gradients in the Bwindi Impenetrable Forest, Uganda.

Conclusions and recommendations: Given the fact that forested streams in Bwindi harbor un-described and endemic species of fish, the issue of sustainable harvest should be handled with caution. In addition, Bwindi streams could be serving as sources for over-fished sites (sinks) outside the park. Therefore, harvesting inside the park could further reduce on fish stocks outside the park. The decision on how to use the fishes should be made through a consultative process involving all stakeholders e.g. Uganda Wildlife Authority, local fishermen and researchers.

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