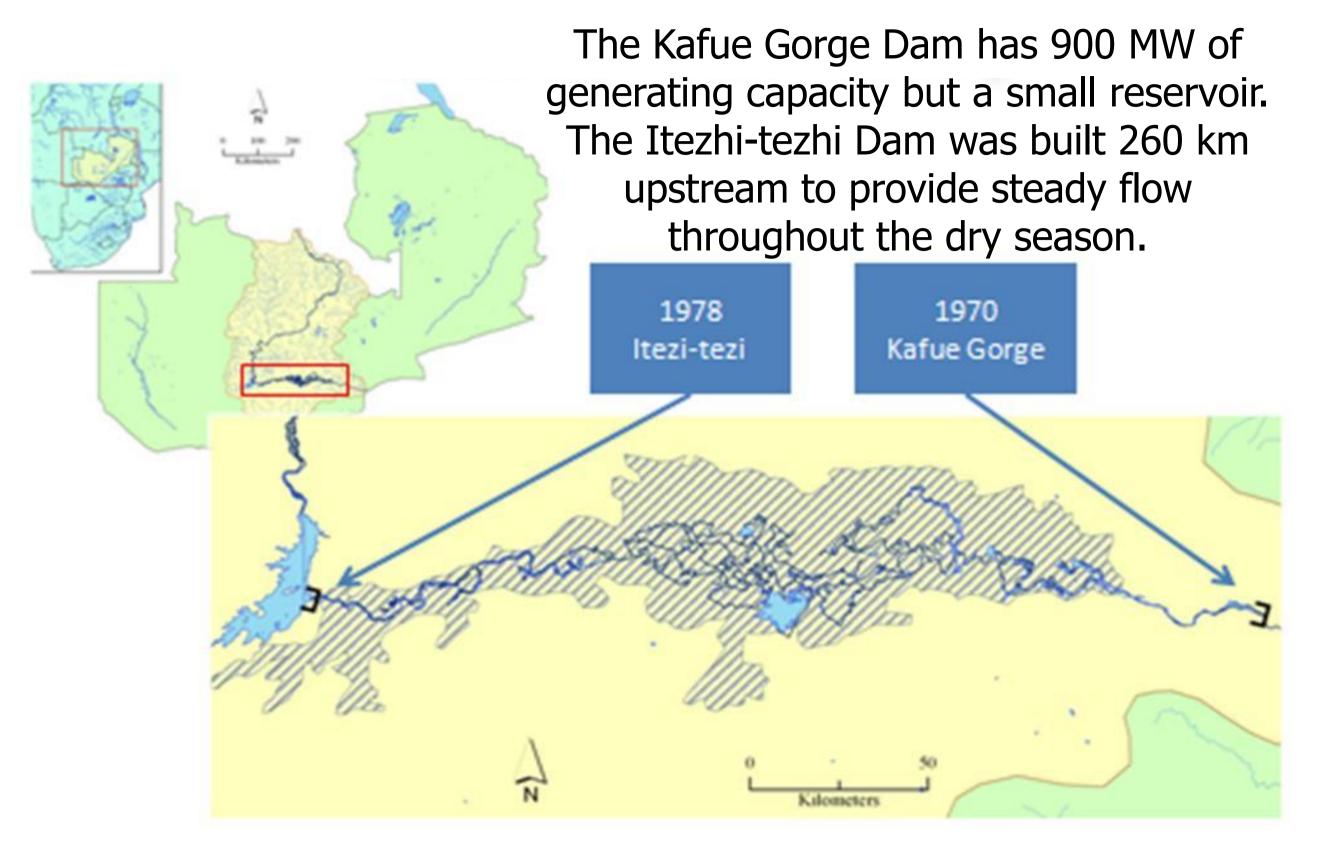
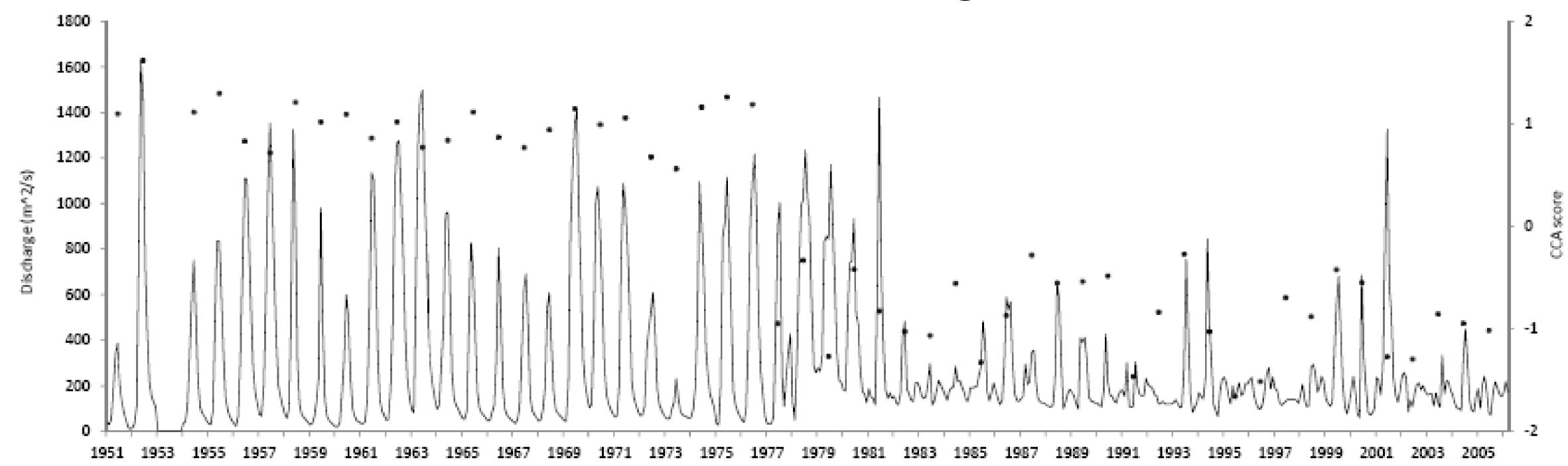
## The Effect of Damming on Fishery Production on the Kafue River, Zambia

An interdisciplinary collaboration by Andrew Deines<sup>1</sup>, Adam Bee<sup>2</sup>, Rich Jensen<sup>2</sup>, and David Lodge<sup>1</sup>



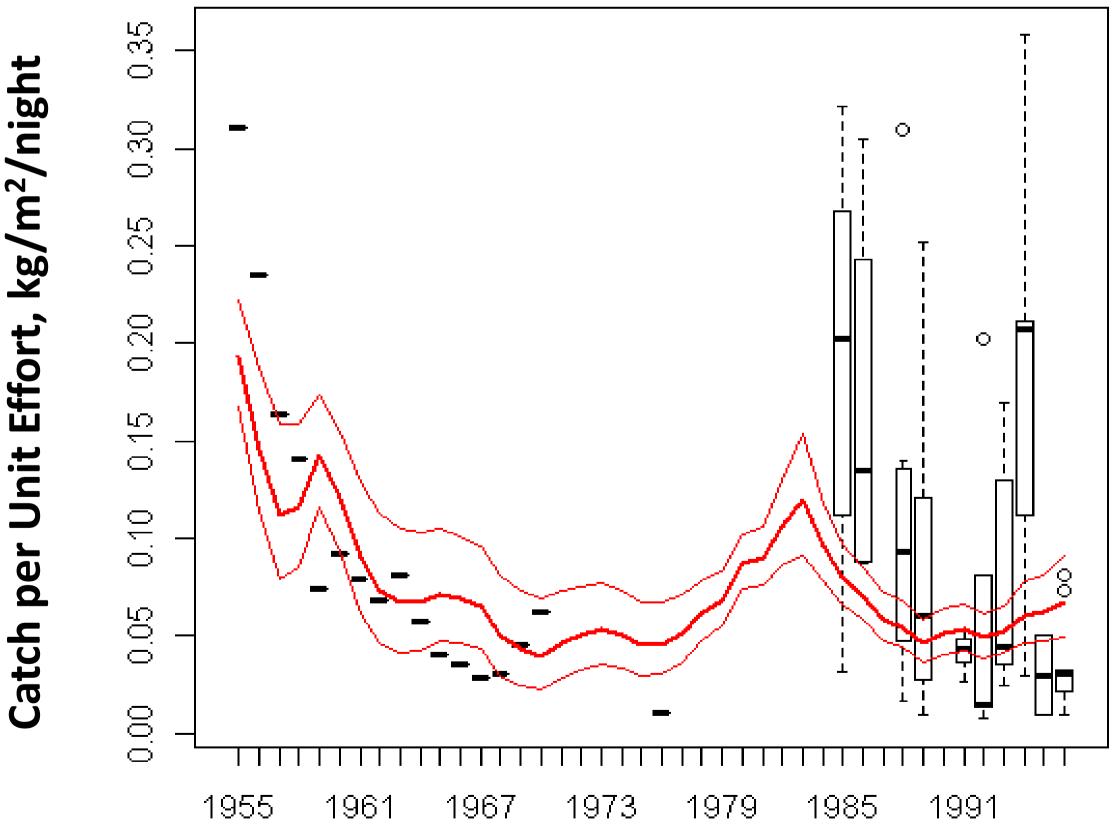


## How has the Itezhi-tezhi Dam altered the Kafue flood regime?



Flow time series shows marked decrease in volatility contemporaneous with construction of the Itezhi-tezhi Dam. Dots represent an index of the degree of anthropogenic alteration.

## Did the flood alteration reduce fish stocks?

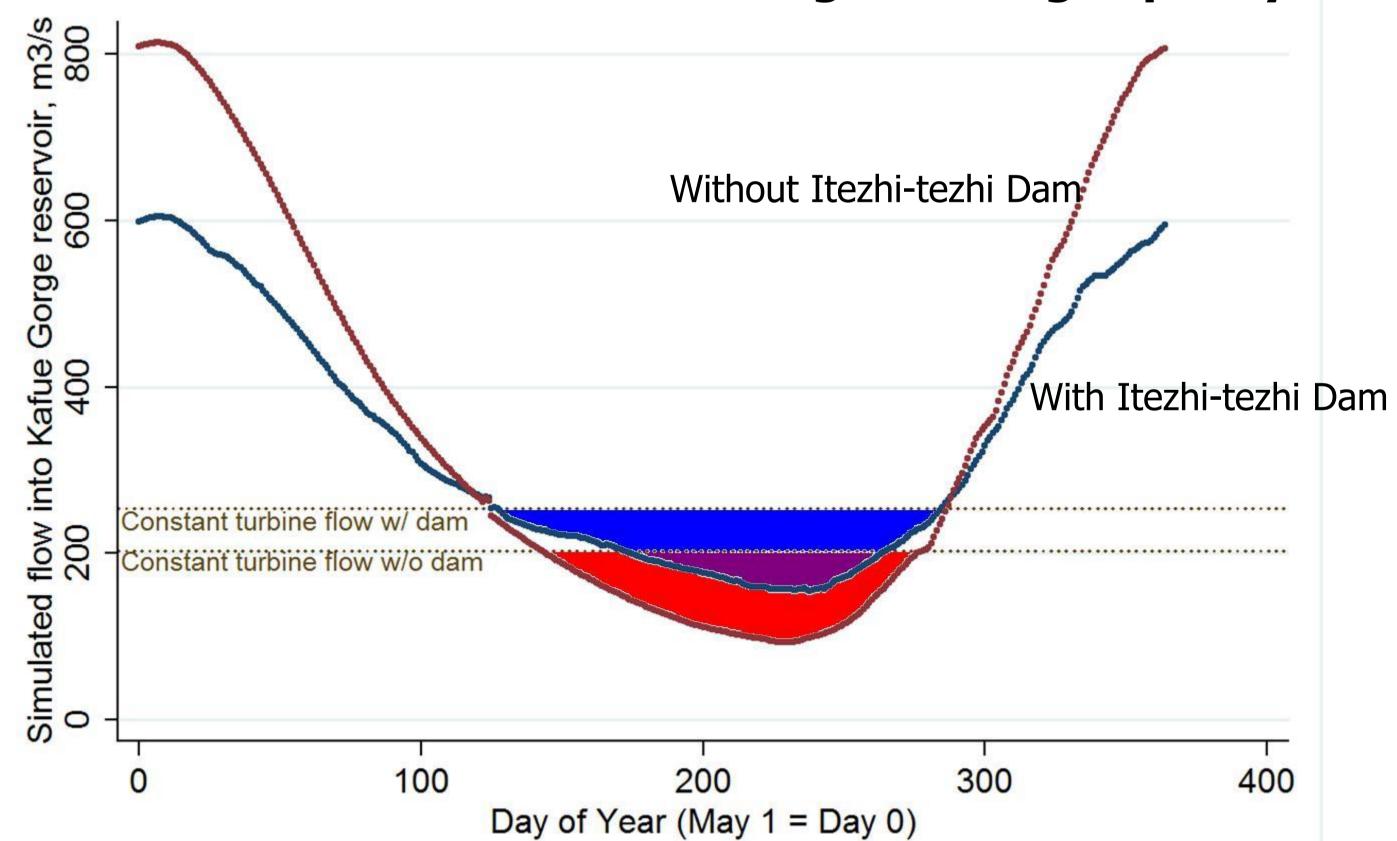


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Dashes and boxplots indicate time series of fish density. Red line represents predictions of the best-fitting model, with 95% confidence interval. Including indices of flood alteration lowered did not improve Bayesian fit measures, implying damming did not lower fish density.



## Did the flood alteration increase generating capacity?



Hydrological simulations suggest the Itezhi-tezhi Dam increases dry-season generating capacity by 15%. Shaded areas are equal and represent maximum reservoir volume. We conclude that restoring natural flooding would not be the most cost-effective way to benefit fisheries.

