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Figures and figure supplements

Mycobacterium ulcerans dynamics in aquatic ecosystems are driven by a complex interplay of abiotic and biotic factors

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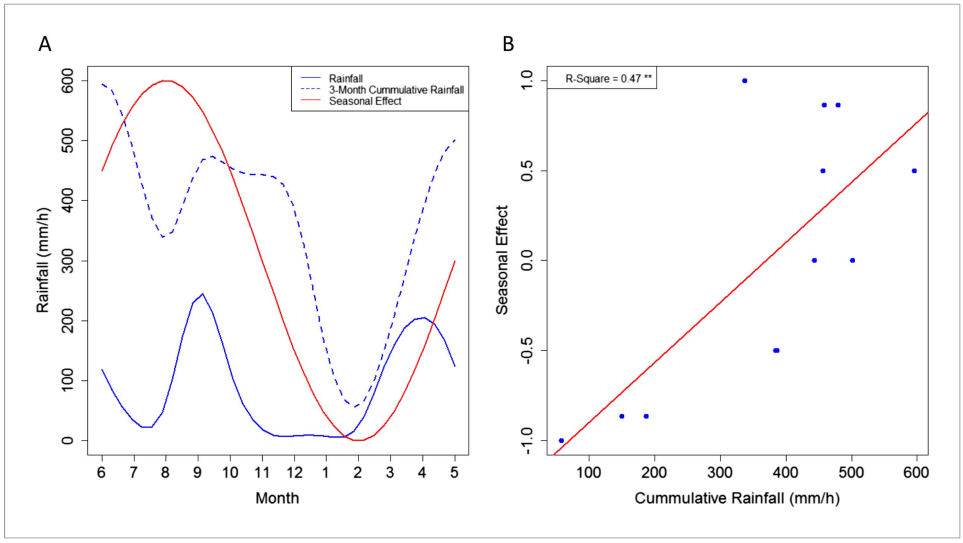

Figure 1. Link between the seasonal effect for *M. ulcerans* and the rainfall dynamics in Akonolinga. (**A**) Represents the monthly values for the seasonal effect (red), the mean rainfall for the period under study and the 3-month cumulative rainfall (blue). (**B**) Shows a clear linear relationship between the values of the seasonal effect and the 3-month cumulative rainfall. A graphical representation of the different seasonal effects tested can be found in ***Figure 1—figure supplement 1***.

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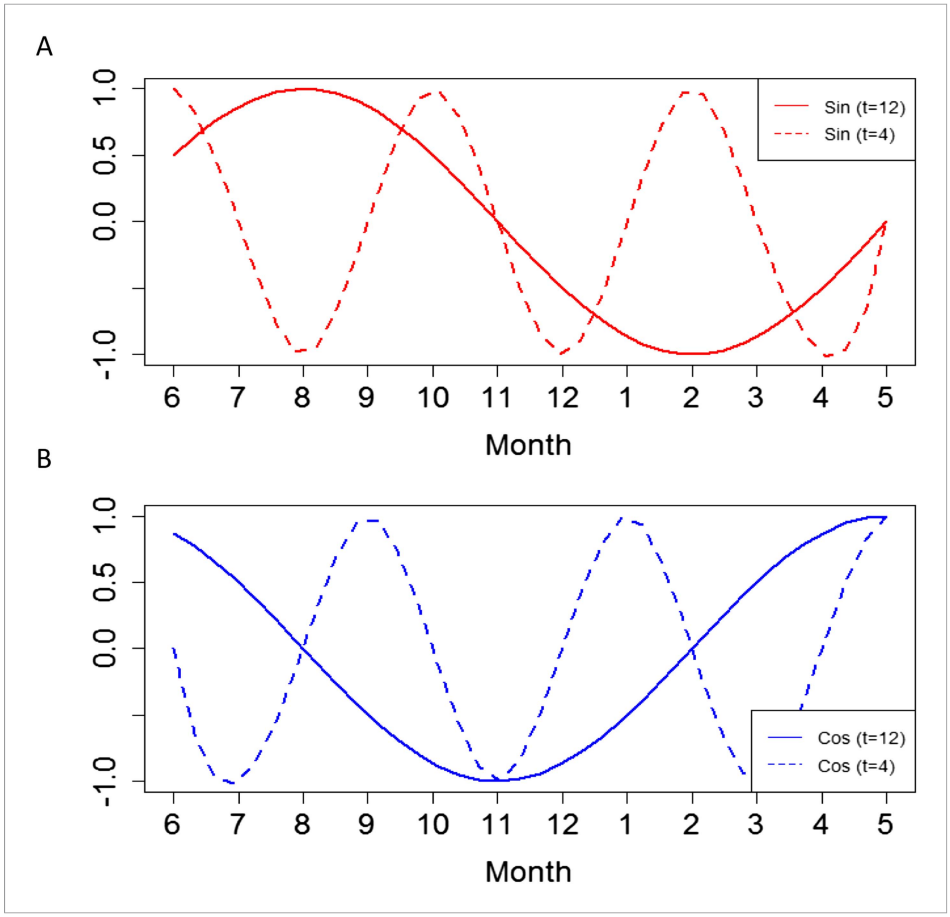

Figure 1—figure supplement 1. Values for the different seasonal effects tested in the statistical models. The seasonal effect was tested through sin (**A**) and cosine (**B**) functions with frequencies of 12 and 4 months (solid and dashed lines, respectively).

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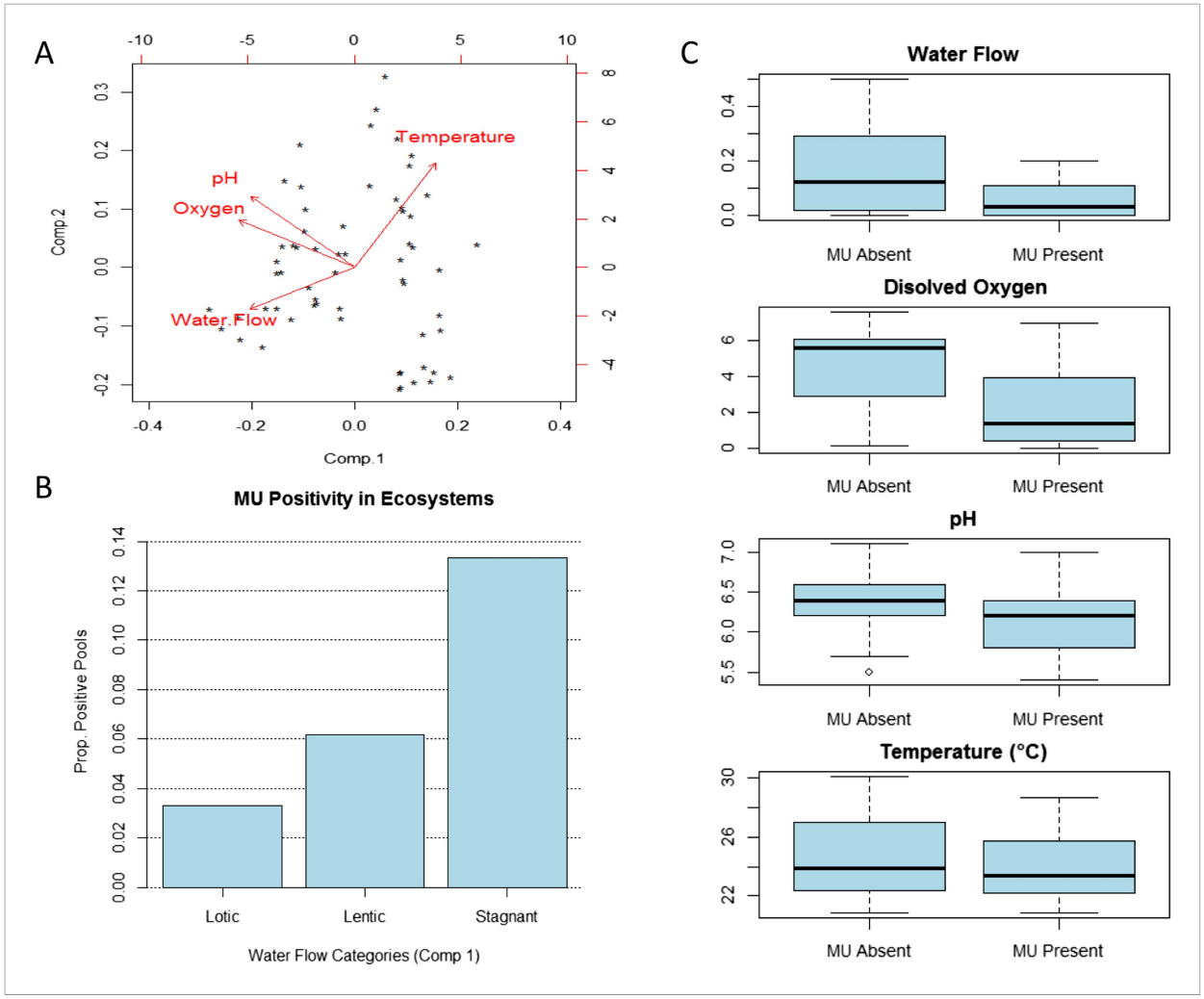

Figure 2. Impact of water flow on physico-chemical characteristics of the water and *M. ulcerans* prevalence in aquatic communities (Bankim). (**A**) Links between water conditions in the first two principal components obtained through principal component analysis (PCA). Comp.1, explaining more than 50% of the variation in physico-chemical conditions in Bankim, reveals that ecosystems with lower water flows have less dissolved oxygen, more acidic *pH*, and higher temperature. (**B**) *MU* positivity in each type of ecosystem as described by the first component of the PCA, which takes into account variations in all physico-chemical characteristics (each category has equal number of points and increasing values of Comp.1). Stagnant ecosystems in Bankim have higher *MU* positivity than lentic, and these have in turn higher *MU* positivity than lotic ecosystems. (**C**) Difference in values for the various water conditions in *MU* positive and *MU* negative sites in Bankim. As a result of the association of water flow with the other physico-chemical conditions, similar patterns for *MU* positivity can be observed for most abiotic conditions.

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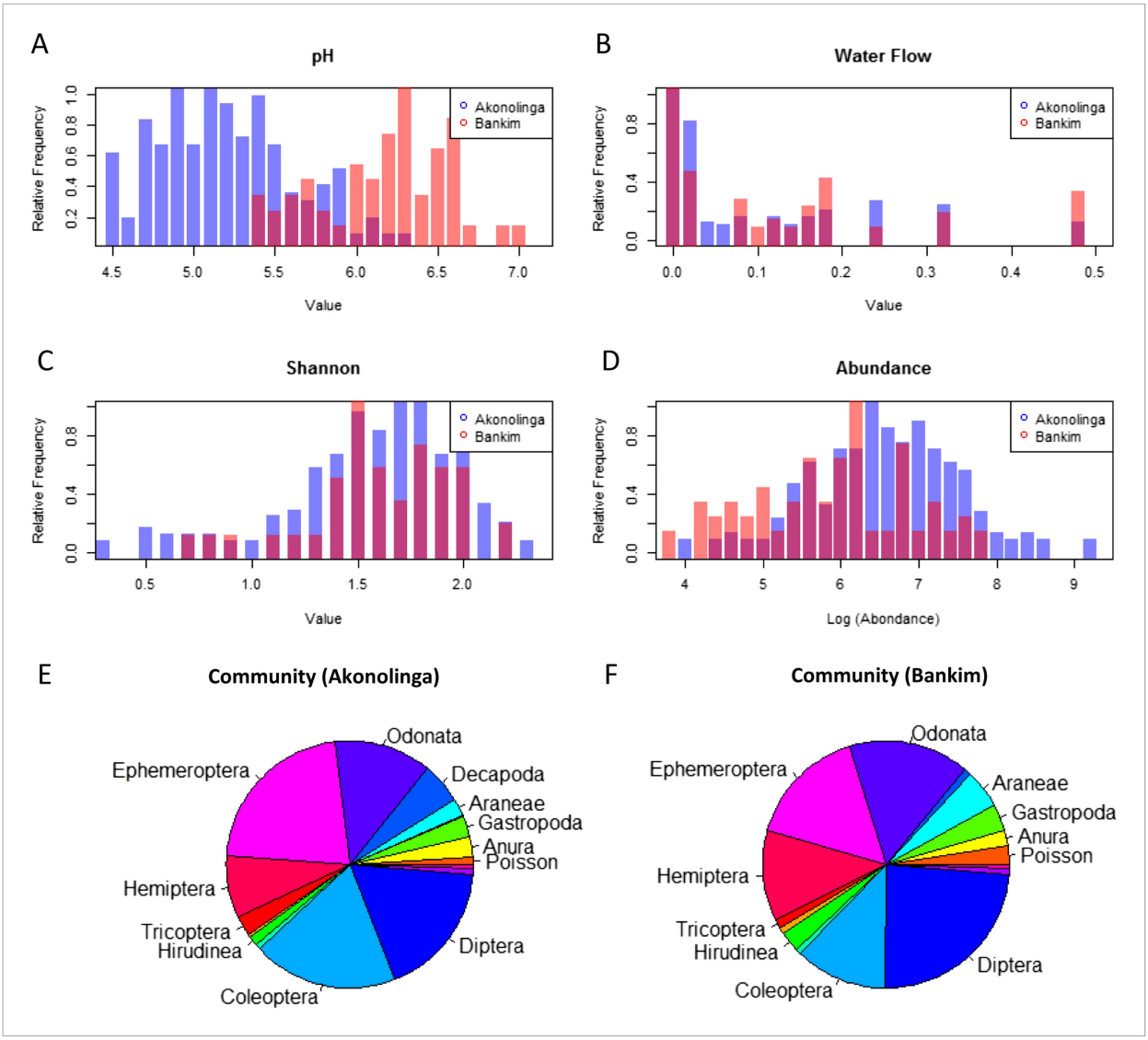

Figure 3. Distribution of relevant biotic and abiotic variables for Akonolinga and Bankim. For the construction of histograms (**A**–**D**), the relative frequency of the variable within each region is normalized by dividing each frequency by its maximum frequency. It can be noted that the distribution of *pH* is radically different for both regions, with much more acidic *pH* in aquatic environments from Akonolinga. For the community composition (**E** and **F**), the area an order has in the pie chart is proportional to the mean relative abundance of the order for all sites and months for each region. Only orders representing more than 1% of the overall community are labelled.

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