

Abiotic variables accounting for presence of the exotic rainbow trout (



Rainbow trout is an exotic fish species that has been introduced in Quebec (Canada) since 1893–1894. Despite spatially-restricted stocking for recreational fishing, the species has spread throughout the Saint Lawrence River. In this study, the relationship between rainbow trout occurrence (presence or absence) and abiotic variables (river geomorphology and climate) was examined for 91 coastal rivers throughout Eastern Quebec in order to determine which variables promote or impede the ongoing invasion process. Results revealed that rainbow trout presence in Eastern Quebec was primarily determined by geomorphological parameters. The invader's presence was strongly related to the presence of tributaries (especially larger ones). To a lesser extent, the presence of rainbow trout was positively related to warm spring and summer temperatures and negatively related to the peak flood date occurring during the egg deposition period (May). This study proposes a parsimonious modelling approach to identify which environmental parameters favour the spreading of an invader, even when a limited dataset is available due to the incomplete invasion process.

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