Glaciers Make Way for New Stream Habitat in Alaska

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Researchers from the University of Birmingham and other UK universities describe the evolution and assembly of a stream ecosystem in South East Alaska in new de-glaciated terrain, from early insect and crustacean invaders to the arrival of migrating salmon from the ocean, in a paper published in the journal 'Ecology' this month (October).

The scientists started sampling Stonefly Creek in the early 1990s when a remnant of the lost Plateau Glacier retreated to reveal the creek's lower reaches. Together with another stream, Wolf Point Creek, this study represents the most complete and longest-running catalogue of stream development.

Now originating in a clearwater lake, Stonefly Creek tumbles over falls, flows through a second turbid lake fed by remnant ice, and then receives inputs from kettle lakes and wetlands before discharging into the fjord of Wachusett Inlet.

This complex geomorphology, the researchers found, buffers the young stream from abrupt changes in water level and provides a diversity of habitats that are colonized by a variety of species.

Within ten years they found that pink salmon and Dolly Varden char had established spawning grounds in the stream followed by red and silver salmon. Twenty seven species of microscrustacea have also rapidly colonized with no obvious mechanism of reaching the stream.

Professor Alexander Milner (/staff/profiles/gees/milner-alexander.aspx) , lead investigator from the University of Birmingham's School of Geography, Earth and Environmental Sciences, said: 'Shrinking glaciers are changing large expanses of northerly coastlines. The speed and pattern of colonization across Stonefly Creek's watershed will aid our understanding of watershed restoration and conservation of biodiversity in a changing climate.

'Salmon stocks are under threat and decline in many regions of the world due to human activities. The creation of these new runs has important potential to help balance these losses.'

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Notes to Editors
The research is published in 'Ecology', the publication of the Ecological Society of America: Evolution of a stream ecosystem in recently deglaciated terrain.

For further information
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