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CHANGES IN POND COMMUNITY ASSEMBLAGES AT A MORAINE OF RAPID RETREATING GLACIER

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An indication of warming climate is apparent all around us in the Arctic and sub-Arctic region i.e. where the glaciers are rapidly retreating. Glacier moraines and the geomorphological features in the new landscape harbor dynamic ecosystems that are fast evolving as glaciers retreat. Among these ecosystems are ponds in water filled kettle-holes, ponds in depressions at moraines and ponds formed in old streambeds. The ontogeny of these aquatic habitats offers a unique opportunity to study evolutionary processes as well as metacommunity dynamics of freshwater ecosystems as glacier retreat due to climate warming. The findings can help us to understand the forces; which shape communities of freshwaters in the Arctic and sub-Arctic following glacier retreat. In Iceland, glaciers are retreating at an unprecedented rate. This is reflected in formation of new freshwater habitats, which have evolved for last few centauries. At the moraine of one of the outlet glacier of Vatnjökull; Skaftafellsjökull, South East Iceland, there are great number of ponds at various developmental stage. These ponds show a clear successional gradient at transect out from the glacier snout. A study within a transect, covering an area of last century's glacier retreat; demonstrates how rapid colonization has been and how rapidly both flora and fauna establish these newly formed empty niches. Macrophytes cover is 100% in most ponds that have been ice-free for 30-40 years or more. Invertebrate community structure is highly reflected on the macrophyte cover and the Shannon diversity had reached a plateau in ponds, which were 30-50 years old or older.