

Assessment of threatened habitat types in Finland 2018

Streams, rivers and spring habitats are the most threatened among inland water habitats

A recent assessment of the threatened habitat types in Finland indicates that the state of inland waters and shores has deteriorated. Streams and rivers have experienced the most deterioration: they are more threatened than lakes and ponds. Streams and rivers in clay soil areas in southern Finland are the most threatened, because of the long history of human activity in these areas. Positive news includes improved purification of wastewaters from urban areas and industry, which has improved the state of lakes over the past decades.



A meandering stream that has carved its channel in sandy soil. Photo by Jari Ilmonen.

Most streams and rivers outside northern fell areas are classified as threatened or Near Threatened (NT). Streams and rivers have become threatened especially in Southern Finland. Spring habitats were also assessed as threatened in Southern Finland, but not in Northern Finland.

The deteriorated status of streams is mostly caused by intensive agriculture, forestry, hydropower and shore habitat alterations. The smallest inland water habitats, such as rivulets, headwater streams and springs, have often been eradicated or thoroughly modified when forests and wetlands were drained. Water protection measures have improved but the changes in the land use of adjacent areas are still quickly reflected in the condition of small waterways, especially if the volume of logging will increase in future.

Status of lakes has improved, but ponds are threatened especially in Southern Finland

In the assessment, lakes and ponds were divided into a total of 22 habitat types. Also in lakes the changes have been significant, but a clearly smaller share of lakes is threatened than that of streams. Most lake types were classified as Near Threatened (NT).

Naturally eutrophic lakes, with nutrient-rich water and diverse flora, are assessed threatened nationally. Such lakes have always been rare in Finland and their quality has suffered from eutrophication. In Southern Finland, ponds are more threatened than lakes, mostly due to agriculture and forestry. Only rocky ponds were assessed as Least Concern (LC) in Southern Finland.

Surprisingly little information on shores of inland waters

Although the estimated length of the shoreline of inland waters in Finland is over a half million kilometres, there is surprisingly little information available to assess their status. Therefore, Red List categories could not be assessed for most of the total of 17 shore habitats even though it is known in general that their quality and quantity have changed. Sandy shores of lakes were assessed the most threatened inland water shore type. In Southern Finland, this habitat was categorized Endangered (EN), especially due to overgrowth, which is mostly caused by eutrophication.

Compared to the first assessment, some progress was seen in the coverage of assessment, as clearly more shore habitats than before were classified and their characteristics were described. This will assist in taking them into account in future in nature surveys for land use planning purposes, for example. New described habitats include lakes with ground water influence,

seasonal ponds, waterfalls, as well as meandering streams and rivers. The latter refers to rivers and streams that are constantly carving winding channels in sandy soil.

Inland water habitats are threatened for a variety of reasons

Issues influencing the inland freshwater habitats becoming threatened include hydropower construction, water regulation and construction on the shoreline. In the case of headwaters, other issues include clearing of streams for log floating, digging channels to protect areas from flooding or during drainage, and logging in adjacent areas. These actions directly influence the water habitats.



Caption: Sandy and gravelly banks can occur in rivers where the flow rate and water level fluctuate a great deal. Eroded banks are important nesting places for sand martin. Photo by Jari Ilmonen.

However, the most important underlying reason for the deteriorated status is the indirect impact from land use in the catchment area. Activities related to forestry such as clear felling, soil preparation and fertilization, as well as agriculture and extraction of peat cause an indirect change in the flow rate and result in increased nutrient, solids and humic loads that degrade the water quality. On the other hand, the nutrient load from industry and human settlements has decreased, which has improved the state of lakes. Regulations in the Forest Act and Water Act have promoted the protection of small waterways.

Improvement of the state of inland waters requires catchment level actions and preparation for climate change

To protect and improve the state of inland water habitats, solutions that cover the entire catchment area and thorough river basin management planning are required, with land use being the key factor.

More attention should be paid to the protection of headwater habitats in connection with forestry and ditch maintenance. Furthermore, the legal protection of headwaters should be more efficiently expanded from sites in good or natural state also to sites which already show some decline in their quality. Promoting the restoration of small streams and springs is important.

Climate change has already started to influence waterways: flow regimes and water levels are changing and droughts are becoming more common, for example. As the period of unfrozen ground will become longer and there will be more rainfall in the winter, the nutrient, solids and humic load to waterways will increase. To protect the inland water and shore habitats, we quickly need an action plan to mitigate the harmful effects of climate change.

Additional information

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