

VANHANKAUPUNGINLAHTI AND LAAJALAHTI SEA BAYS

Location: a: Vanhankaupunginlahti 60° 13' N, 25° 00' E,
 b: Laajalahti 60° 12' N, 24° 50' E.
 The areas are situated in the province of Southern Finland, within the city boundaries of Helsinki and Espoo.

Area: 508 ha, comprising about 290 ha of water.
 Vanhankaupunginlahti: 316 ha, comprising about 150 ha of water.
 Laajalahti: 192 ha, comprising about 140 ha of water.

Protection status: Vanhankaupunginlahti Bay: The major part of the area is owned by the city of Helsinki and the rest by the state. The Viikki Protected Area was established in 1959 and 1962, and the area was extended in 1987. The area covers 254 ha, and will be extended into 316 ha in the near future with the help of Natura 2000 network of protected areas. The extensions include Saunalahti Bay and the flood meadow of Purolahti Bay. Viikki is listed in the internationally important sites of the national Bird Lake Protection Programme. The Viikki Protected Area is already included in the Ramsar Convention sites.

Laajalahti Bay: The Laajalahti Protected Area is owned by the state. It was established first in 1979, and extended in 1993 and 1997. The area covers 187 ha. Laajalahti is included in the national Bird Lake Protection Programme and in the Natura 2000 network of protected areas.

Site description: The Viikki Protected Area is a part of Vanhankaupunginlahti Bay, the estuary of River Vantaanjoki. It is a shallow sea bay of about 500 ha. The shore areas are covered by the Common Reed (*Phragmites australis*) with about 140 ha and there are over 30 small ponds inside the reed belt. Outside the continuous reed belt there are separate reed islands up to a depth of 0.5 meters. There are also areas of Gray Club-rush (*Scirpus tabernaemontani*) and Common Club-rush (*Scirpus lacustris*) as well as Lesser Bulrush (*Typha angustifolia*). The submerged vegetation is still scarce, but recovering slowly. The average water depth is only 1.4 m. A few small islands among the reeds are forested. There is an Alder (*Alnus glutinosa*) zone of varying width along the shores and agriculture fields adjoin the area in the east. Meadows are scarce, only about 12 ha.

The Laajalahti Protected Area is a part of a shallow sea bay of ca. 290 ha on its western half. The average water depth is under 2 m on the protected area. The shores are covered by extensive reedbeds with over 30 ha and there are small flood meadows on the western edge of the bay. After the closing of the sewage treatment plant in 1986 the quality of the water has improved a lot and the submerged vegetation has recovered.

International and national importance:

The breeding waterfowl at Vanhankaupunginlahti Bay is quite varied. Annually (1986-1997) some 190-390 pairs of waterfowl (13 species) breed in the area. In 1995 the most common species were Mallard (*Anas platyrhynchos*) with 132 pairs, Great Crested Grebe (*Podiceps cristatus*) 51 pairs and Wigeon (*A. penelope*) 17 pairs. The Water Rail (*Rallus aquaticus*) has the densest population in Finland with 25 pairs in 1996. Also the Spotted Crake (*Porzana porzana*) breeds with 1-15 pairs annually. The area used to have the largest colony (4 200 pairs) of Black-headed Gulls (*Larus ridibundus*) in Finland, but only small numbers has bred since the 1980's, last time in 1993. Also the Slavonian Grebe (*Podiceps auritus*) and Marsh Harrier (*Circus aeruginosus*) have disappeared. Occasional breeders include e.g. Bittern (*Botaurus stellaris*), Corncrake (*Crex crex*) and Red-breasted Flycatcher (*Ficedula parva*). A breeding attempt of White-backed Woodpecker (*Dendrocopos leucotos*) took place in 1994 and 1-2 individuals have wintered annually in the area since then. Lesser Spotted Woodpecker (*D. minor*) breeds annually with 12 pairs at the most. The most common passerines are (1996) the Sedge Warbler (*Acrocephalus schoenobaenus*) with 443 pairs and Reed Bunting (*Emberiza schoeniclus*) with 176 pairs. Scarlet Rosefinch (*Carpodacus erythrinus*) breeds with 72 pairs. The total bird fauna consists of 72-80 species and 1 800-2 500 breeding pairs. Vanhankaupunginlahti Bay is also important as a resting area for migratory birds. In spring and autumn, thousands of ducks and waders rest in the area. A total of 283 bird species has been met at Vanhankaupunginlahti Bay.

The breeding bird fauna of Laajalahti Bay is diverse and the waterfowl populations have increased along the recovering of the submerged vegetation. Annually (1984-96) some 150-300 pairs of waterfowl (14 species) breed in the area. In 1995 the most common species were Great Crested Grebe (89 pairs), Mallard (72 pairs) and Wigeon (34 pairs). The Spotted Crake breeds almost annually with 1-4 pairs. On two small islets in the middle of the bay breeds a colony of Black-headed Gulls with increasing numbers (450 pairs in 1996) Lesser Spotted Woodpeckers (2-3 pairs) and Long-tailed Tit (*Aegithalos caudatus*) breed in the few herb-rich forests. Occasional breeders include e.g. Gadwall (*Anas strepera*) and Corncrake. Laajalahti Bay is, despite its small size, a remarkable area for resting waterfowl. During migration thousands of ducks rest on the bay. Numbers of Swans (*Cygnus sp.*) have also increased within the last few years after the submerged vegetation recovered. The shore area is an important resting place for migrating waders.

Protection criteria: 1b, 2b and 3b.

Changes in ecological character:

Vanhankaupunginlahti Bay has suffered considerably from the effluent load of Helsinki city and run-off from the River Vantaanjoki. Until 1986 over 60 % of the waters from the Helsinki city sewage works were conducted there. As a consequence the bay has been heavily eutrophicated. The bottom organisms

suffered badly on account of sewage water and lack of oxygen, and the bottom sediments were totally dead in the 1960's. In 1987 sewage water discharge to the bay was stopped and also the River Vantaanjoki has purified in recent years. The submerged vegetation, which disappeared completely in the 1970's, has previously started to recover. Also the bottom fauna has started to recover since the late 1980's. The number of breeding pairs of waterfowl is still only one third of the figures in 1941.

Sedimentation and shallowing of the bay is some 30 cm in 100 years on account of sludge from the rivers and the decomposition of vegetation. The helophyte vegetation zones have moved rapidly towards the sea. The area of small ponds has diminished into a half and of meadows into a quarter compared to the situation in 1941.

Laajalahti Bay became eutrophic primarily because of a sewage treatment plant which was started nearby at the end of 1950's. There was also a dump in close contact with the bay until the beginning of 1980's. Thus, there was no submerged vegetation on the bay from the 1960's till the end of 1980's. Also the bottom sediments were totally dead in the 1960's. After reducing the use of the sewage plant in 1975 and stopping it completely in 1986 the quality of the water has improved a lot, and the submerged vegetation as well as the bottom organisms of the bay have recovered during the 1990's. The grazing of the meadows was stopped after the 1960's and started again in 1993 with cattle to keep the meadows open. After the 1950's one third of the reed area and Alder woods has been destroyed by land filling.

Management measures:

A management and conservation plan was established for Vanhankaupunginlahti in 1988 and an ecological restoration and management plan in 1998. New open areas will be cut out, and water flow among the reeds improved. Planning of the restoration, as well as research and education will be carried out under Life project in 1997-2001. The annual management of meadows was started in 1993 by mowing and in 1995 by introducing cattle on an area of 8 ha. Another flood meadow of ca. 5 ha has been grazed by cattle almost continuously for decenniums. Four nature trails, five bird-watching towers and one hide have already been built. The bay is of great importance for environmental recreation and other outdoor pursuits, being located inside a major population center. The mouth of the River Vantaanjoki is a popular area for sport fishing, and the annual introduction of young fish includes some 60 000 individuals of Salmon (*Salmo salar*), 50 000 individuals of Sea Trout (*S. trutta*) and 200 000 individuals of Whitefish (*Coregonus lavaretus*).

A management and conservation plan for Laajalahti was established in 1993; cattle has grazed the meadows annually since 1993 and the pasture grounds covered 30 ha in 1996. A house owned by Espoo City serves as an information center. There are two bird-watching towers and a nature trail in the area.

Possible threats: There is a heavy pressure for building along the margins of the areas. The nutrient-rich bottom sediments still eutrophicate the waters, and overgrowing of the reed belt areas continue. The River Vantaanjoki yields nutrients and clay from the surrounding fields to Vanhankaupunginlahti Bay causing eutrophication and turbidity. Populations of Raccoon Dog (*Nyctereutes procyonoides*) and American Mink (*Mustela vison*) can be a serious threat for colonially breeding birds at Vanhankaupunginlahti Bay. Increased traffic and boating disturb the bird populations of both bays.

Research: Bird populations at Vanhankaupunginlahti Bay have been under observation since the late 19th century. There is accurate information on the water quality from the 1930's. A number of reports have been published on the flora and fauna of the area. Annual counts of the breeding bird populations have taken place since 1986. The area is regularly used for bird-ringing.

At Laajalahti Bay there are lots of studies on fauna and flora of the area. Almost annual counts of the breeding bird populations have taken place since 1984. Bird-ringing has been regular since the 1970's.

References: Finnish Forest and Park Service 1993a, Haapanen & Paasivirta 1973, Haapanen & Rassi 1980, Eriksson 1962, von Haartman 1975, Hirvonen 1985, 1986, 1994, Hirvonen & Mikala 1987, Hirvonen & Mikkola 1987, Hirvonen et al. 1985, 1988, 1989, 1990, 1991, Hosiaisuusluoma 1981, 1983, Insinööritoimisto Maa ja Vesi Oy 1977, Kaasinen 1974, Committee Memorandum 1981a, Lehtonen 1975, 1988, Leivo 1994, 1995, Leivo & Leikola 1991, Malinen 1993, Mikala 1988, Mikkola 1992, 1993, Mikkola-Roos 1995, 1996, Mikkola-Roos & Oesch 1998, Mikkola-Roos & Yrjölä 1994, Oesch 1996, Palmgren 1913, Rusanen 1996, Salmela 1984, Finnish Legislative Collection 44/76, 974/89, Suomen ympäristösuunnittelu Oy 1988, Varmo 1992a, 1992b, Venetvaara & Lammi 1994, Viitasalo 1985, 1992a, 1992b, Vuolanto 1973, 1977, YTV 1983.