

C-3 Clarification of the mechanism for effects of acid precipitation on terrestrial water and soil.

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An appreciable amount of acidic deposition was observed near the large cities throughout Japan during the survey of the Japan Environment Agency from 1982 to 1986. Annual loading of acid was comparable to those observed in Europe and North-east America, where serious damages have been recognized. However, no evidences were found for the acidification of surface waters by the deposited acid.

**Three main** subjects were studied to answer the questions about the effects of acidic deposition on catchment ecosystems in Japan:

C-3-1 To search for the catchment basin of the least buffering capacity in Japan where surface water should be acidified earlier by acidic deposition. Weaker buffering capacity was found for the catchment of the highest mountain lakes, Sugoroku-ike and Washiba-ike, where weak acidic rain causes acidification of the pond water. Total results, however, suggested that possibility of the surface water acidification is very little unless the amount of acid deposition increases.

C-3-2 To evaluate the buffering function of the soil and ground layer. Buffering capacity of Shirasu is rather high, but weathered lava from Sakurajima has no buffering capacity to keep the pH of interstitial water higher than 5. A buffering capacity map of Kanto loam were drawn for acid rain in the whole Kanto plain.

C-3-3 To predict damages on the freshwater ecosystem by water acidification. The order of tolerance of fresh water fish in moderate temperature was wakasagi > motugo > ugui > Crucian carp, carp > ayu; and that in lower temperature was brown trout > brook trout > char > rainbow trout > masu salmon > hime salmon.