Summary

Waterways of Horton plains are made up of tributaries of three major rivers of Sri Lanka. These three tributaries are Belihul Oya, Kirirketi Oya and Kuchchadeniya Oya, of which Belihul Oya is the major tributary that remify the entire Horton Plains and it is drained by a large number of brooks. Main Belihul Oya has well over fifty small ,medium and large pools throughout its length, some of which carried names such as Chimney pool, Govenor's pool, and Leg of mutton pool. Belihul Oya also has a number of water falls and some of the dominant ones are Baker's fall, stack rock fall and Galagama falls, the last one had the greatest fall, which acts as a barrier for fish migration. British introduced rainbow trout, *Onchorhynchus mykiss* Waulbium, (then *Salmo garderii* Richardson) into the waterways to develop a sport fishery. Almost annually eyed stage of trouts were imported from Britain and New Zealand and reared in hatchery in Nuwara Eliya and stocked in the waterways.

These waterways were devastated from 1968 to 1969 by erecting anicuts across the waterways to obtain water for seed potato cultivation in the plain. The pesticides, fertilizers etc. that were used in the farm ruined the quality of the water in the waterways. Stocking of the waterways with hatchery reared juveniles was terminated in 1989. However, since then the small trout population sustained.

The purpose of the present study was to ascertain the size of the population breeding sites and seasons and also to evaluate the threats if any for the sustenance of the population.

Rainbow trout is present only in Belihul Oya from its origin up to Galagama falls, close to Belihul Oya rest house. The size of the fish in the population ranged from 1.0 to 39.0 cm and the population is represented by number of year classes, namely, 0, 1 and 2 and older. 15 to 20 cm fish dominated the fish caught.

The present size of the adult 15 cm > population could be about 600 fish. These fish are mostly distributed in pools but juveniles up to about 15 cm are found in the stream in between pools, fingerlings were present from January to April.

Insects, their larvae and crabs and *Caridina* were the major constituents of their diet. They actively fed during early hours of the day and evening when the light was not bright.

The major predator of trout in these waterways was otter *Lutra lutra*. They were very common on gloomy days. There were days when there were as much as 12 of them at a point. They have been found feeding on the fish.

The fecundity of the fish varied from 500 to 950. The intra-ovarian eggs are matured around October and the highest GSI values were also recorded from August to October Trout in the waterways spawned from November to January, water temperature and quality are good during this period. Fingerlings have been caught from January to April. There are only very few suitable spawning areas. Eggs are laid in nests (redds). Almost 50 % of the laid eggs do not develop embryos. This is same in all parts of world as egg quality depends largely on quality of food. Further, washed off peat silt covers the eggs that devoid the oxygen supply to eggs. However, in hatcheries the hatching is much more than the above value. The high percentage of egg mortality is another reason for the low population density. Further, oil pollution due to washing vehicles near spawning sites could be another reason. Lower down in the stream, the stream banks and bed have been destroyed by gem mining. Thus, the small trout population in the waterways of Horton Plains is attributed to:

i. predation,

ii. lack of suitable spawning sites,

iii. quality of eggs,

iv. peat silt,

v. oil pollution,

vi. gem mining,

vii. barriers such as anicuts for irrigation,