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Stocking Rate Estimations of *Tilapia mossambica* Fingerlings for some Inland Reservoirs of Sri Lanka

Key words: Morphoedaphic Index, fish catch, reservoirs of Sri Lanka, stocking density, annual potential yields

Abstract

The Morphoedaphic Indices for several Sri Lanka inland water bodies (mostly ancient man-made reservoirs) were calculated using conductivity and depth data. The relationship between Morphoedaphic Index *MEI* and the annual catch of fish *C* was found to be

$$C = 19.0677 MEI^{0.7050}$$

Using this equation, the annual potential yields were calculated. The stocking densities of *Tilapia* fingerlings needed to be stocked were then estimated taking into consideration the natural recruitment of fingerlings from the already existing stocks of reproducing *Tilapia*.

1. Introduction

The inland waters of Sri Lanka, especially those in the form of man-made reservoirs, both ancient and recent, are extensive and are continually expanding with the development of new irrigation and hydroelectric projects.

The areas available for fisheries development include the following.

	Number	Area (km ²)
Large irrigation reservoirs	86	706.82
Medium sized irrigation reservoirs	161	168.67
Minor irrigation reservoirs ('Ponds')	3297	389.56
Hydroelectric reservoirs		80.32
Flood reservoirs		40.16
Total		1385.53
Deep lagoons and estuaries		803.21
Shallow lagoons and tidal flats		401.60
Total		1204.81

With the implementation of the Mahaweli River program, a further area of about 200 km² will become available.

In the very recent past there have been attempts to derive new methods at the community level, which, although less precise, can provide estimates of stocking den-