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The possible species growth models in upendra beel in the tropic of west Bengal on sustainable basis

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Abstract

Fisheries may be an alternative livelihood in Upendra Beel a dead natural water body or lowland area situated at Chakdaha in the district of Nadia, West Bengal (India). With the similar input prices one may get one kg of fish instead of one kg of paddy, once you have good ecological pockets of the similar Beel condition. Market price of fish may be five times better than the market price of paddy. Using the ecological approaches through identifying resource base and selecting species and growth models one can sustain better.

Keywords: Statistical model, Fisheries as an alternative profession, Upendra Beel.

1. Introduction

1.1 Upendra Beel

Upendra beel is located in Nadia district. The district has other oxbow lakes, live and dead rivers like Ganges, Ichhamati, Churni, Jalangi. Since history these rivers have changed their courses and lakes and low lands, dead oxbow lakes are created naturally. Upendra Beel is such a beel situated in Chakdaha of Nadia district virtually a dead oxbow lake. This is now being paddy growing area. Due to less return and interest among local rice farmers, fisheries may be performed as an alternative for entertainment and better economics. Moreover, in the study area conventional rice cultivation specially during Kharif season has total risk. Flood inundation may result a huge loss to the farmer. Beel water has variable depth of water. Shallow beels are not suitable for IMC but useful for some indigenous species mentioned herewith this communication. Depth of water is the prime in beel fisheries. In case of shallow or dead beel fisheries may be performed using water cycle from underground water.

1.2 Statistical Models in Fisheries

Other than IMC (Indian Major Carps), the fish species that can be restored in this traditional Beel fisheries are mostly local and exotic species available in adjoining water-bodies. Among such species some are predatory and others mostly are non predatory in nature. Among predatory species *Notopterus spp.* and *Channa spp.* is major. These two species are fed on small fish species available in Beel waters. Among non-predatory species *Puntis spp.*, *Tilapia spp.* and *Macrobrachium rosenbergii* are important and these species can be restored separately. Mentioned bellow are the few important species along the stochastic models (Fig 1.1 to Fig 5.1) is given here for them who are layman in fisheries.

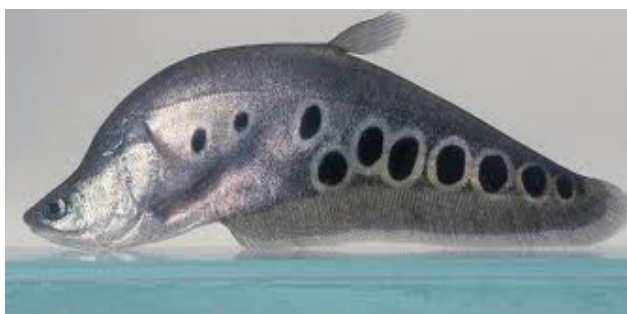


Fig 1: *Notopterus chitala* and growth Model (Fig 1.1)

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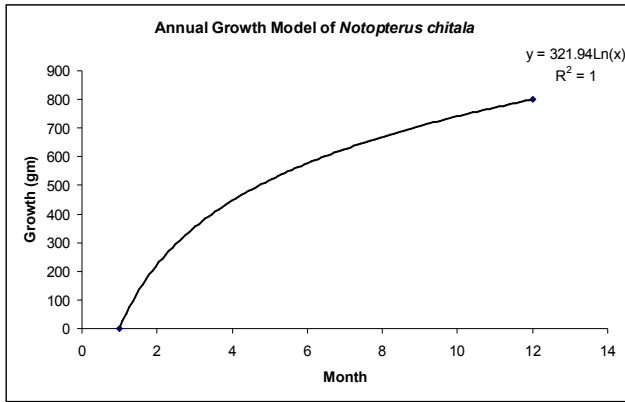


Fig 1.1

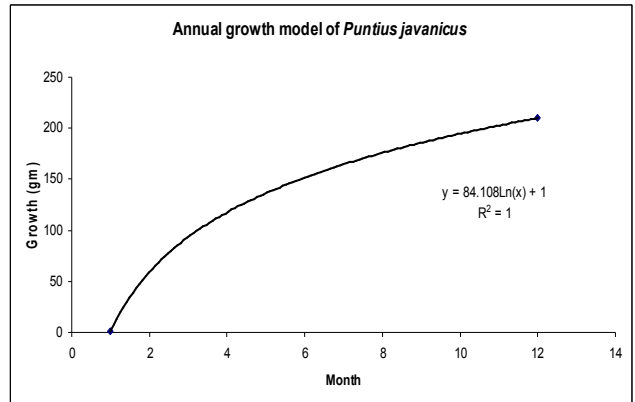


Fig 3.1



Fig 2: *Channa straitus* and growth model (Fig 2.1)



Fig 4: *Tilapia niloticus* and Growth model (Fig 4.1)

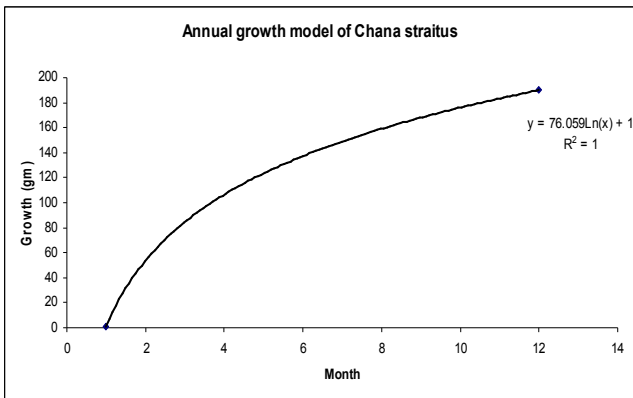


Fig 2.1

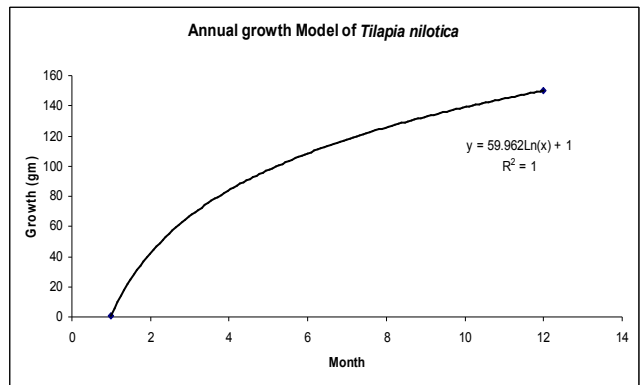


Fig 4.1



Fig 3: *Puntius javanicus* and growth Model (F3.1)



Fig 5: *Macrobrachium rosenbergii* and growth Model (Fig 5.1)

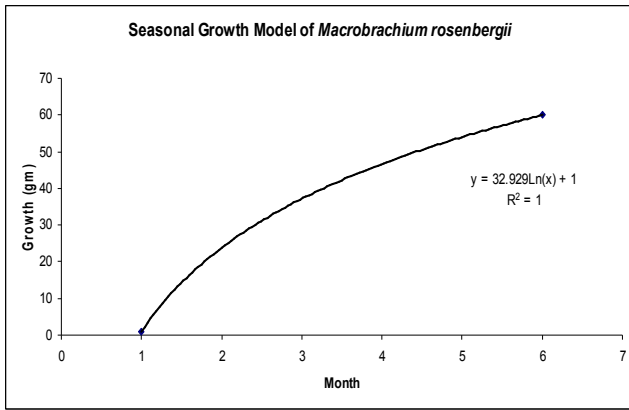


Fig 5.1

2. Conclusions

The above model is considered under optimum ecological condition, there may water depth variation among different pokets of Upendra Beel fisheries ecologies. It is also noted that modern fisheries is often an entertainment generation process however if such process becomes sustainable and has got economic importance we may accept. There is no harm to adapt fisheries in such dead beel as fisheries may be the better alternatives and hence restoration process may be along with the fisheries enhancement.

3. Acknowledgement

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4. References

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