



Distribution trend of *Schizothorax richardsonii* (Gray, 1832) in Nagaland

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Abstract

In the present investigation, *Schizothorax richardsonii* (Gray) only representative of the sub-family Schizothoracinae recorded in Nagaland waters is taken stake of. *Schizothorax richardsonii* (Gray) commonly known as *Alwan snow trout* in English, and in various tribal names in Nagaland like *Kahanei* (Zeliang), *Khothevii* (Angami), *Nguchi* (Khiemungans), *Khangu* (Chakhesang), *Mesha* (Pochury), *Kaepun* (Yimchunger), *Akhanu* (Sema) and *Nyetao* (Konyak) is mostly found in the torrential upland rivers in Nagaland. The distribution trend of this important fish species in Nagaland rivers is presented.

Keywords: *Schizothorax richardsonii* (Gray, 1832), distribution, declining, temperature, conservation strategy.

1. Introduction

The rivers and their tributaries of Nagaland belong to three distinct drainage systems. The rivers which flow in the northern-western direction discharge their content into the river Brahmaputra, those flowing in the south-western direction discharge their content into the Barak river of India and those flowing in the eastern direction discharge their content into the Irrawaddy river of Myanmar. In Nagaland *Schizothorax richardsonii* (Gray) is found in the water bodies at upper reaches only. The population of *Schizothorax richardsonii* (Gray) is under steady decline in Nagaland due to various factors like, alteration of habitats, over exploitation and destructive fishing by dynamite, bleaching powder and other toxicants which is why, the species has been listed among the threatened fishes of the country. Consequently, *Schizothorax richardsonii* (Gray) has become a higher risk threatened species in Nagaland. The present trend, if allowed unabated, *Schizothorax richardsonii* (Gray) may be completely wiped out from the water bodies of the state in the days to come.

The present study has been undertaken to explicate the distribution pattern of *Schizothorax*

richardsonii (Gray) from Nagaland water bodies hitherto remained to be investigated. This in return will help accentuate the conservation strategies of this natural marvel from imminent peril caused by natural as well as anthropogenic stress.

2. Methodology

For the present study, four stations were selected for every river for fish sampling. At each station fishes were caught by net, traps and other environment friendly fishing methods. Survey was conducted during spring, summer, autumn and winter. The fish samples are preserved in 10% formaldehyde in the field and detailed taxonomic studies are made in the Laboratory of Zoology, Kohima Science College, Jotsoma, Nagaland. Prior to preservation the colourations of the fish specimens are recorded in fresh condition. The fish abundance was determined base on the catch. Specimens are taxonomically identified and confirmed after various authoritative sources.

3. Systematic position

Schizothorax richardsonii (Gray) belongs to Super-Class: **Pisces**, Class: **Teleostei**;
Sub-Class: **Actinopterygii**;
Order: **Cypriniformes**; Family: **Cyprinidae**;

Sub-Family: **Schizothoracinae**; Genus: **Schizothorax** Heckel, 1838 and Species: **Schizothorax richardsonii** (Gray, 1832).



Fig. 1 : *Schizothorax richardsonii* (Gray)

4. Distribution trend of *Schizothorax richardsonii* (Gray)

Schizothorax richardsonii (Gray) is primarily distributed in twelve rivers under five districts of Nagaland. Their distribution pattern along with associated data is purported in the table appended.

5. Results and discussion

From the table appended it is revealed that the

highest number of the present test fish is recorded from the rivers Tizu, Laang, Dzuleke and Takngu yong followed by the rivers Lanyi, Tesuru, Tepuiki and Deyie, having a moderate population and the rivers Zungki, Dzuna and Kehorü in which the fish population is declining very fast.

The major rivers which is supposed to be having a large population is showing a steady decline in the population of *Schizothorax richardsonii* (Gray). Temperature is one of the leading factors, which influence the distribution of *Schizothorax richardsonii* (Gray) in rivers and streams of Nagaland. The study also revealed that *Schizothorax richardsonii* (Gray) in the study area is being threatened by various human activities. In addition, increased sedimentation due to removal of riparian vegetation and entry of agricultural runoff causes severe threats to the fish. Moreover, various human activities are destroying the microbial and other invertebrate communities in the stream bottom which are important feed for the test fish.

District	River	Geographical location	Altitude	Confluence	Status	Distribution trend
Phek	Tizu	25°46'39.96"N 94°29'20.04"E	2496 ft	Chindwin	Major	Abundant
Phek	Lanyi	25°36'45.98"N 94°30'01.90"E	2365 ft	Tizu	Major	Moderate
Phek	Tesuru	25°45'50.71"N 94°29'02.86"E	2404 ft	Tizu	Minor	Moderate
Kiphire	Zungki	25°48'24.70" N 94°46'38.81" E	1712 ft	Tizu	Major	Rare
Noklak	Laang	26°12'01.21" N 95°00'50.49" E	4473 ft	Zungki	Major	Abundant
Kohima	Kehorü	25°34'16.90" N 94°06'47.94" E	5737 ft	Doyang	Minor	Rare
Kohima	Dzuna	25°39'10.45" N 94°03'05.17" E	4679 ft	Tsu	Minor	Rare
Kohima	Dzuleke	25°37'10.58" N 93°57'22.61" E	5763 ft	Tepuiki	Major	Abundant
Kohima	Tepuiki	25°33'34.71" N 95°52'47.11" E	3520 ft	Barak	Major	Moderate
Mon	Deyie	26°21'44.34" N 94°56'08.70" E	4322 ft	Dikhu	Major	Moderate
Mon	Takngu yong	26°17'04.73" N 94°59'08.16" E	7161 ft	Zungki	Major	Abundant

Table 1

6. Conclusion

All the rivers that have been considered for the present investigation purport a good population of indigenous fish species. However, the distribution of *Schizothorax richardsonii* (Gray) in the water bodies investigated does not show a very encouraging trend. Therefore, urgent conservation measure through captive breeding and ranching is warranted. Further studies are also required to determine the influence of ecological factors on its distribution trend and

population status.

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