

Study on Health Assessment of Shahe River in Boluo County, China

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Objectives

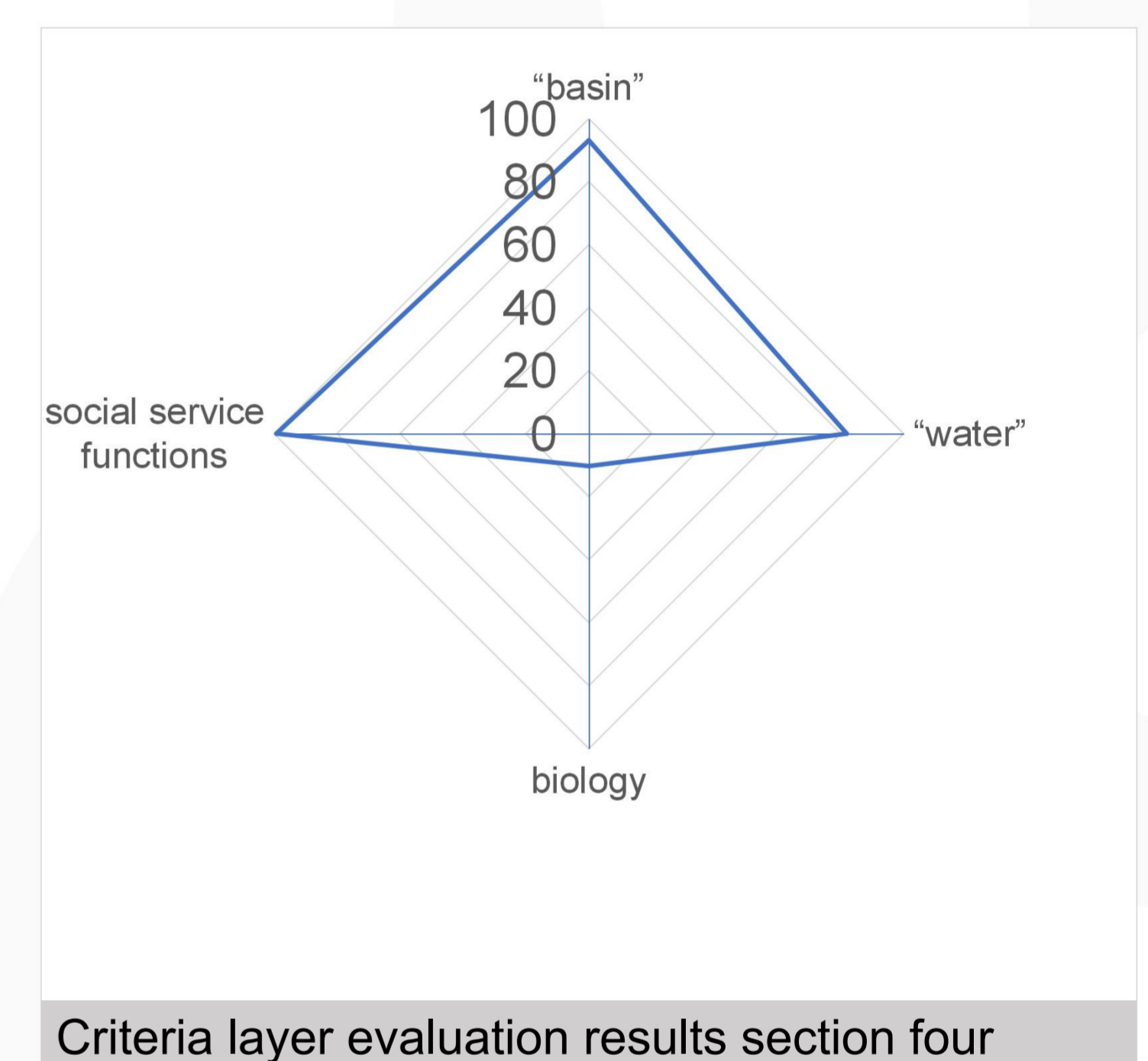
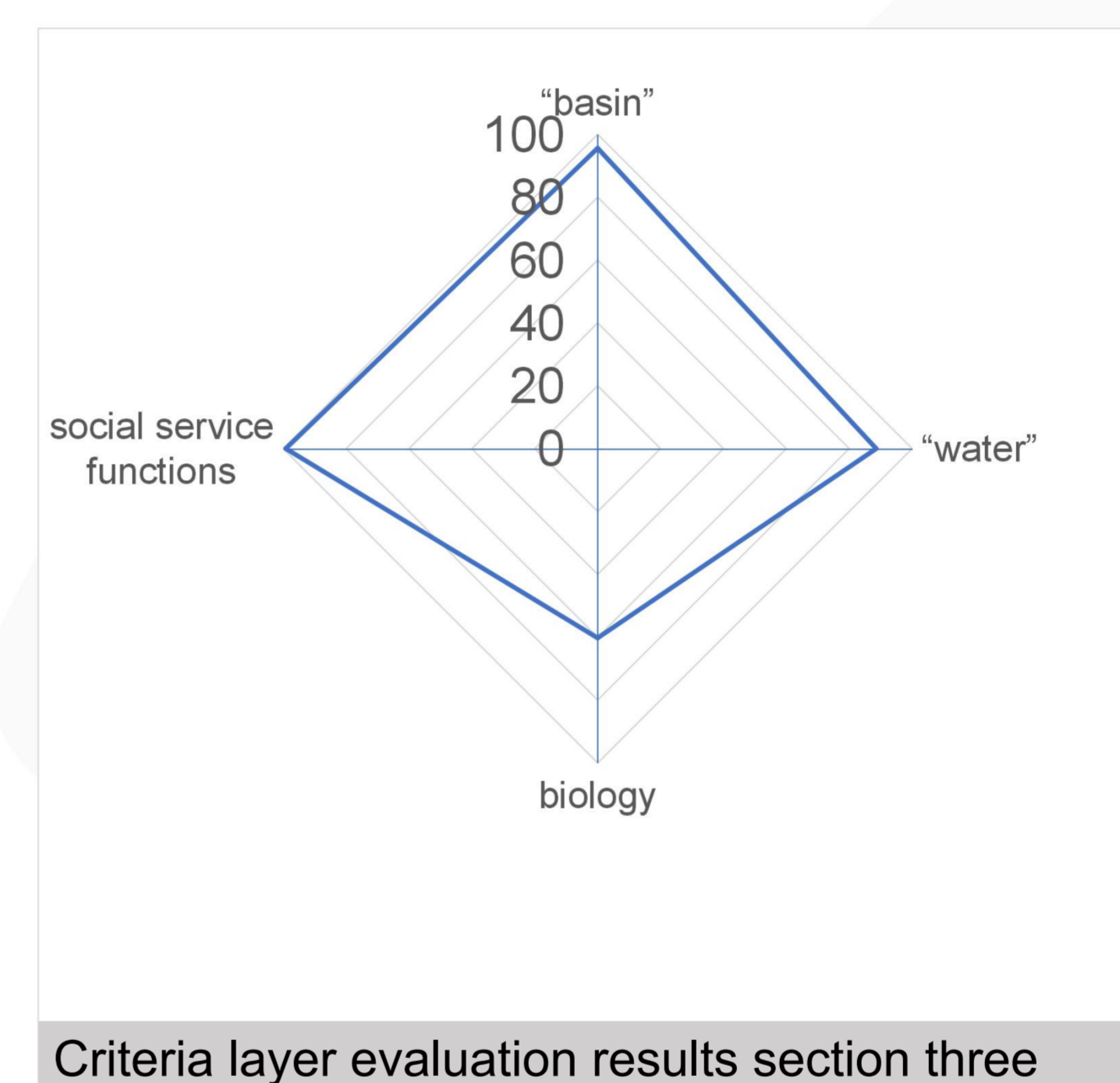
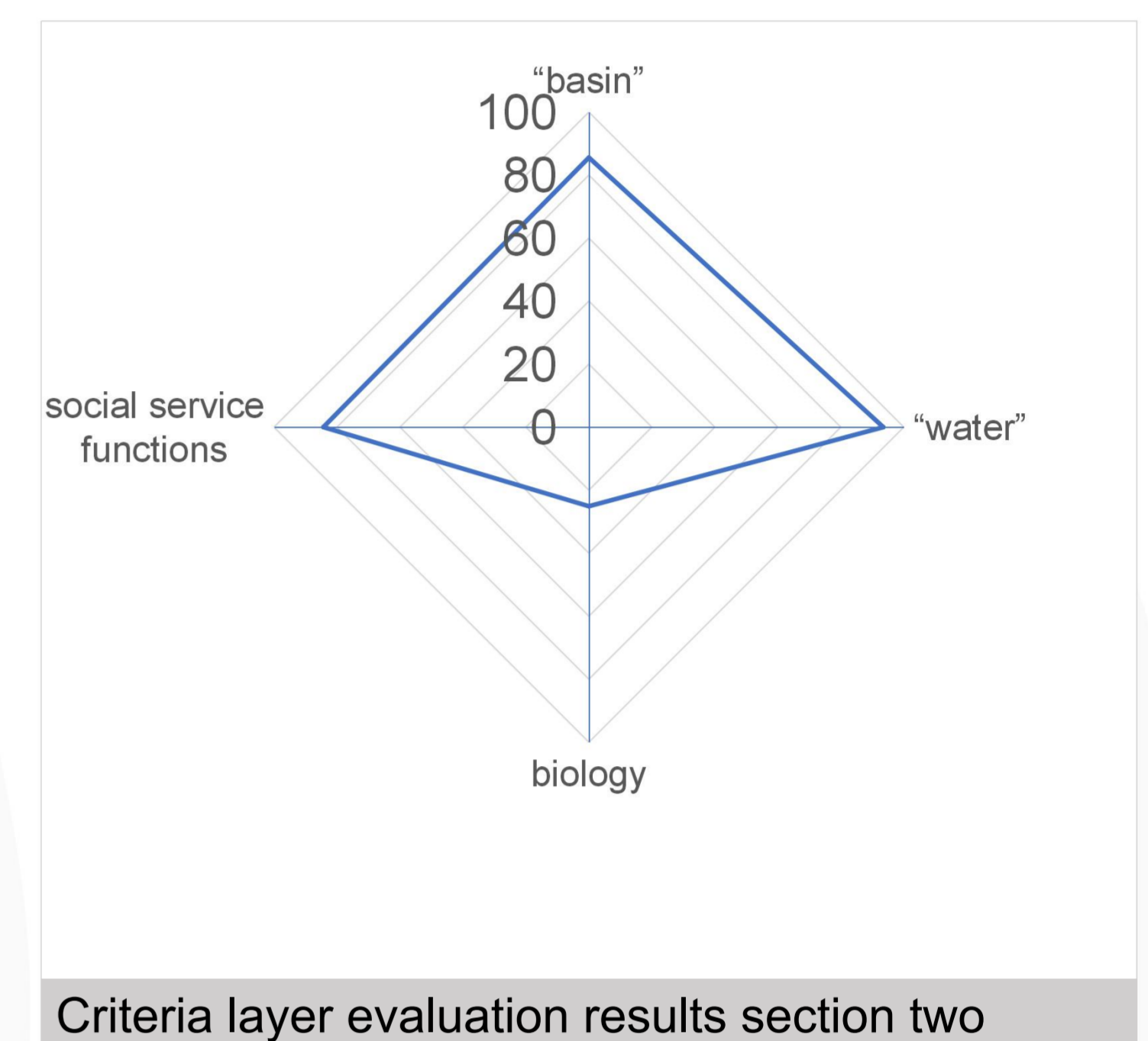
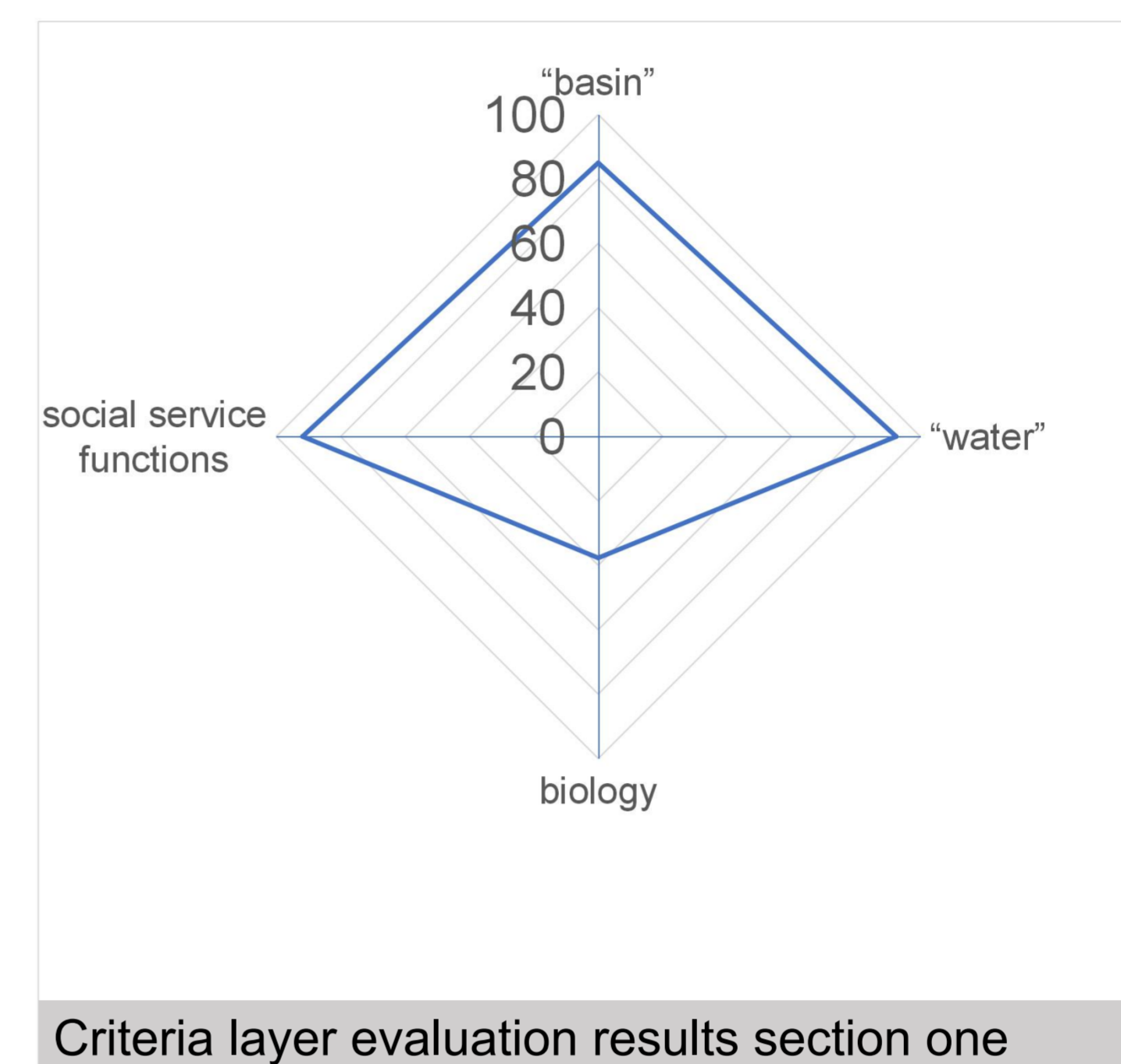
The health assessment of rivers and lakes is an important part of river and lake management. It provides important basis for judging the health status of rivers and lakes, finding out the problems of rivers and lakes, analyzing the "causes", and putting forward treatment measures. It has important practical significance for strengthening the management and protection of rivers and lakes, maintaining the healthy life of rivers and lakes, and building happiness rivers and lakes.

Methods

Correct selection of evaluation index system is the key to carry out river and lake health assessment. On the basis of the national and Guangdong provincial evaluation indicators, the paper established a health evaluation index system suitable for the actual situation of Shahe River in Boluo County. Since there is a large river-type reservoir in the main stream of Shahe River, river health assessment indicators and lake health assessment indicators are needed for comprehensive evaluation. Therefore, the paper selected 12 river health assessment indicators and 14 lake health assessment indicators from the four criteria layers of "basin", "water", biology and social service functions to form the river and lake health assessment indicator system in the main stream of Shahe River. The weight of each index and each criterion layer is assigned. Four comprehensive evaluation criteria have been determined: Class I rivers and lakes (very healthy), Class II rivers and lakes (healthy), Class III rivers and lakes (sub healthy), Class IV rivers and lakes (unhealthy), and Class V rivers and lakes (bad state). On this basis, the single index evaluation method and the comprehensive index evaluation method are used to comprehensively evaluate the index layer, criterion layer and target layer, and the comprehensive evaluation results of the health of Shahe River and Lake in Boluo County are obtained.

Results

The results show that the comprehensive evaluation result is 78.30 points, which belongs to "healthy (Class II rivers and lakes)" status. Among them, the evaluation result for section one is 79.85 points, the evaluation result for section two is 75.48 points, the evaluation result for section three is 87.49 points, and the evaluation result for section four is 75.02 points.



Conclusions

Assessed as a Class II river or lake, it indicates that the Shahe River maintains a healthy state in terms of morphological and structural integrity, water ecological integrity, anti disturbance elasticity, and social service function sustainability. However, there are still certain deficiencies in certain aspects, and daily management and protection should be strengthened to continuously upgrade the health of the river or lake.

Comprehensive evaluation results of the health of rivers and lakes in the main stream of Shahe River

Evaluation section	the length of the river section (km)	the proportion of the length of the evaluated river section to the total length of the evaluated river	evaluation results of each section	evaluation results of the river
One	25	29.41%	79.85	78.30
Two	23	27.06%	75.48	
three	11.85	13.94%	87.49	
four	25.16	29.60%	75.02	