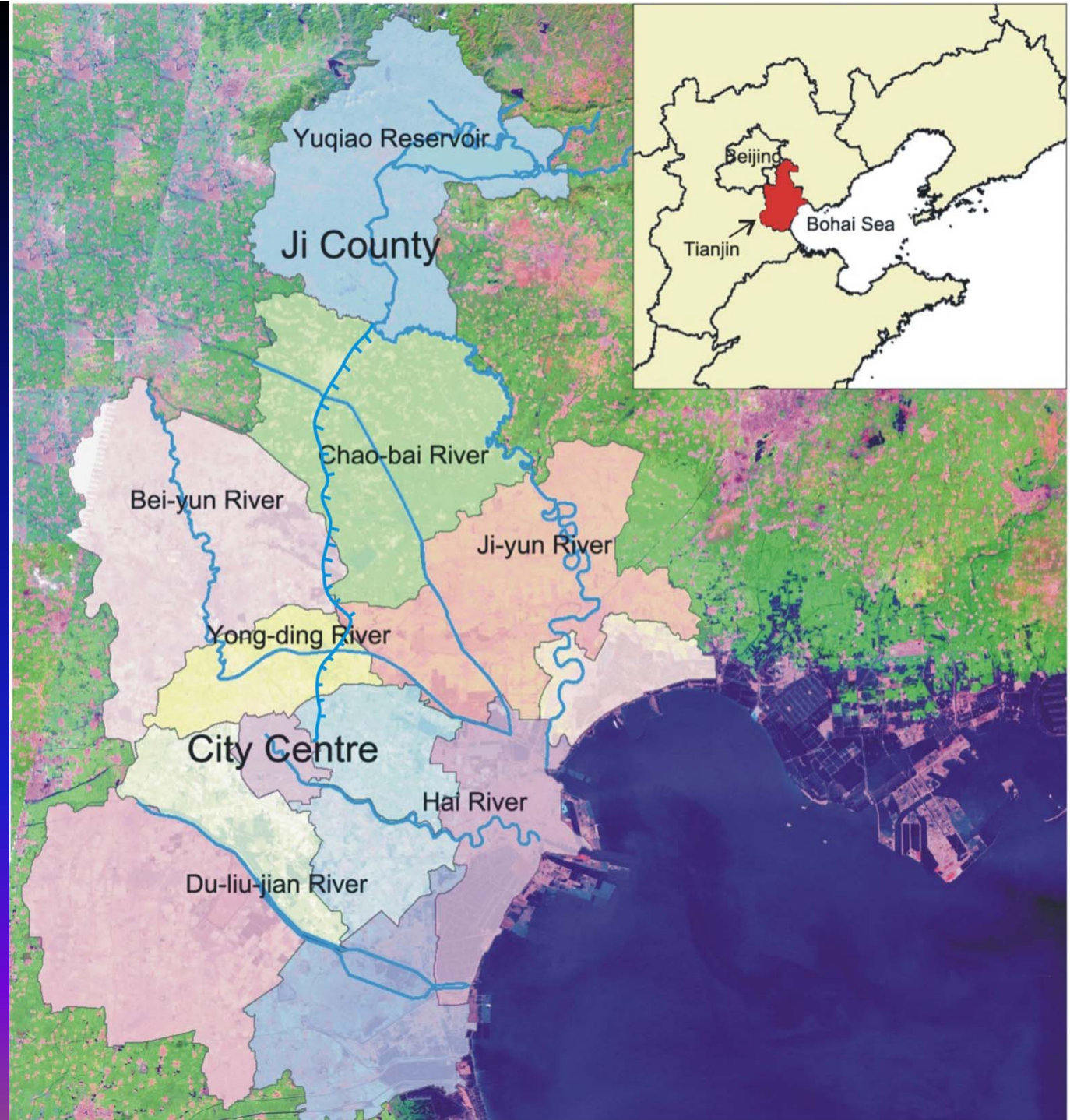


Yuqiao Reservoir

-Background and related research

Location



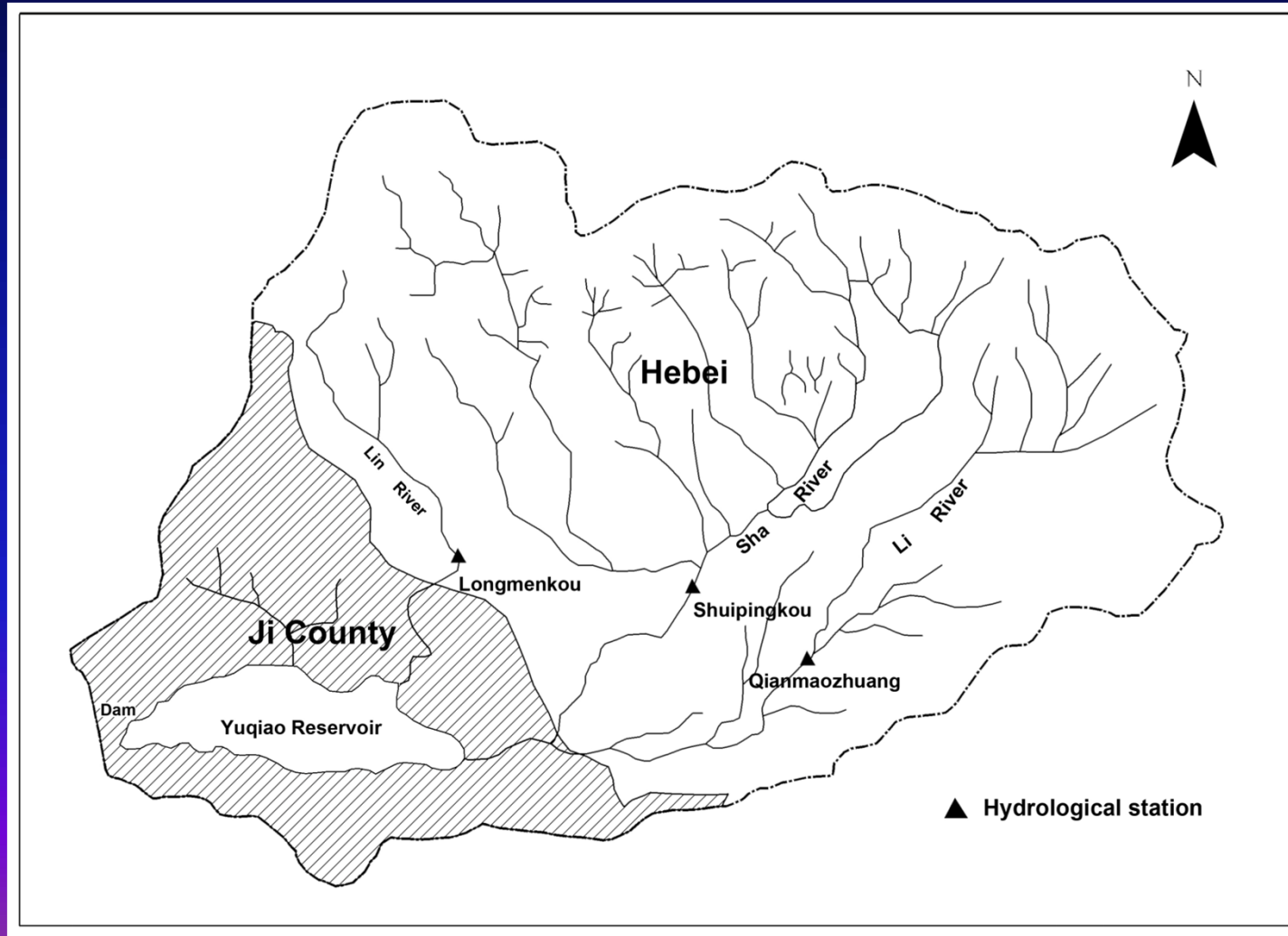
Yinluan Project: Luan River Diversion Project

Yinluan Project started to supply drinking water from Panjiakou and Daheiting Reservoirs of Hebei Province to Tianjin through Yinluan Chanel and Li River in 1983



Catchment of Yuqiao Reservoir

于桥水库始建于1959年，改建后成为引滦工程的中转库，于1983年正式启用。于桥水库流域总面积2060km²，主要水系为黎河，沙河和淋河。黎河和沙河在入库前10公里处汇集形成果河。



Characteristics of Yuqiao Reservoir

Normal water level: 21.16m;

Surface: 86.6 km²

Utilizable capacity: 385 million m³; Total capacity: 1.56 billion m³;

Dead storage: 360 million m³

Maximum length: 30 km;

Maximum width: 8 km

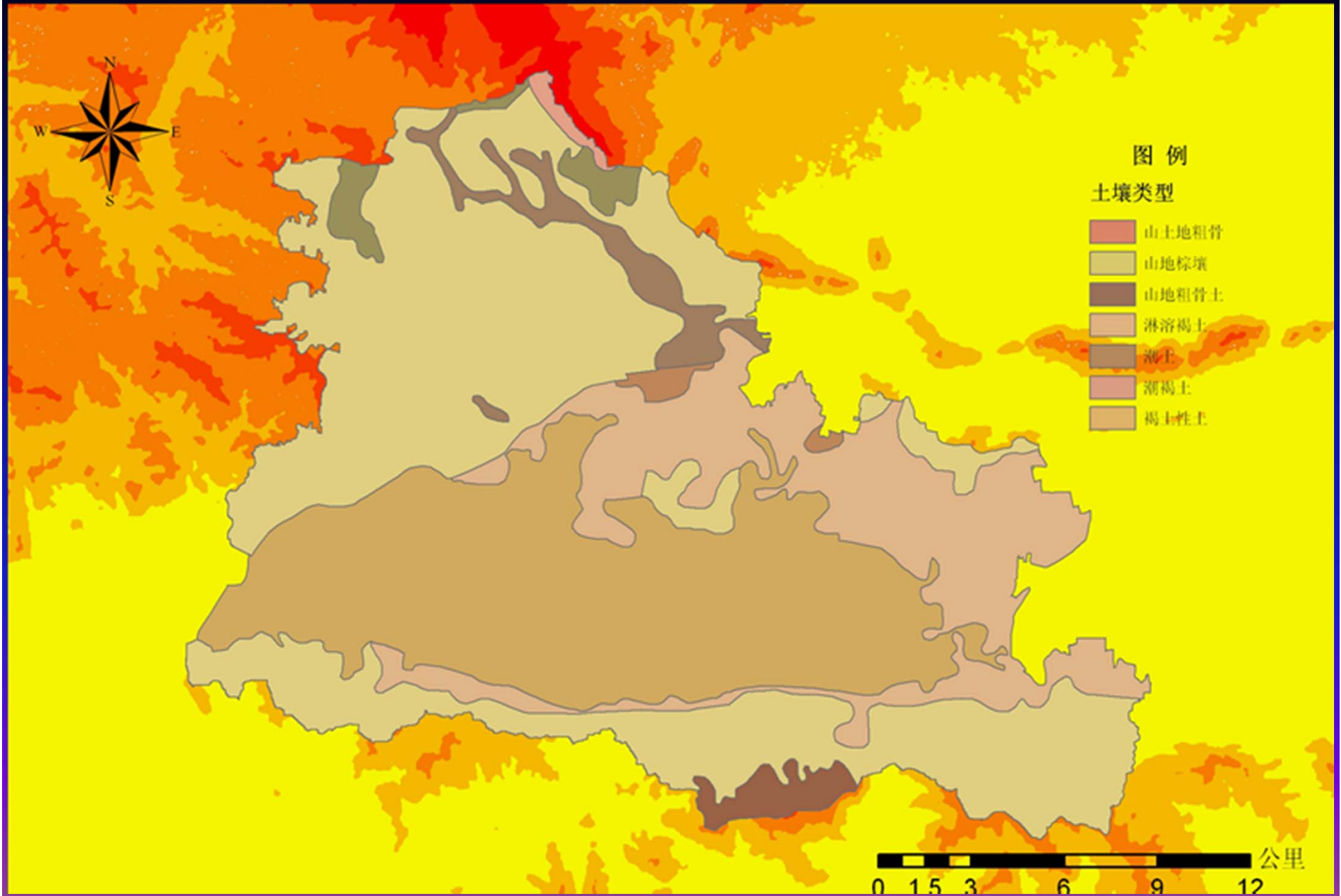
Maximum depth: 12 m;

Mean depth: 4.6m

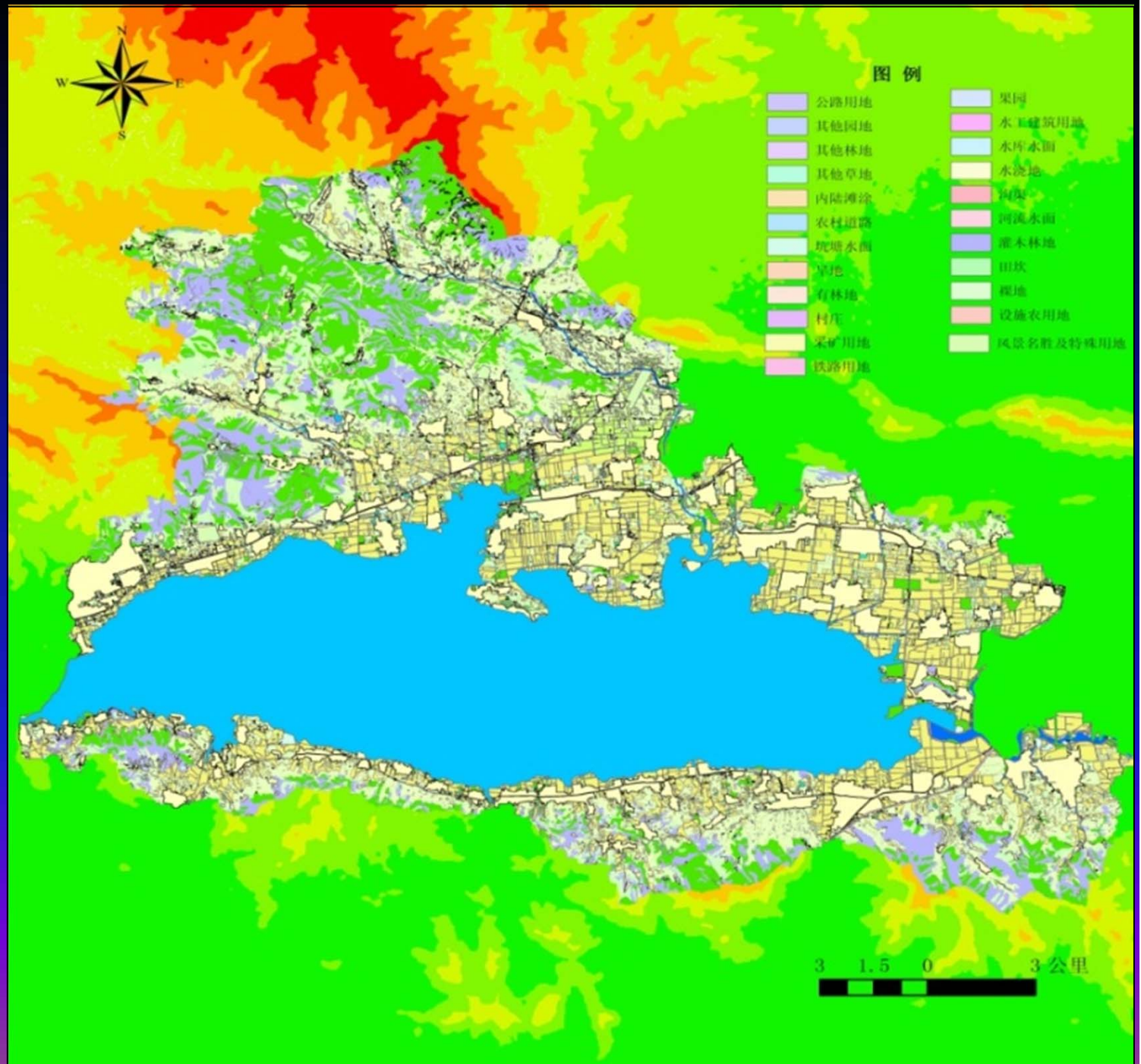
Population: 150,000 people



Soil type

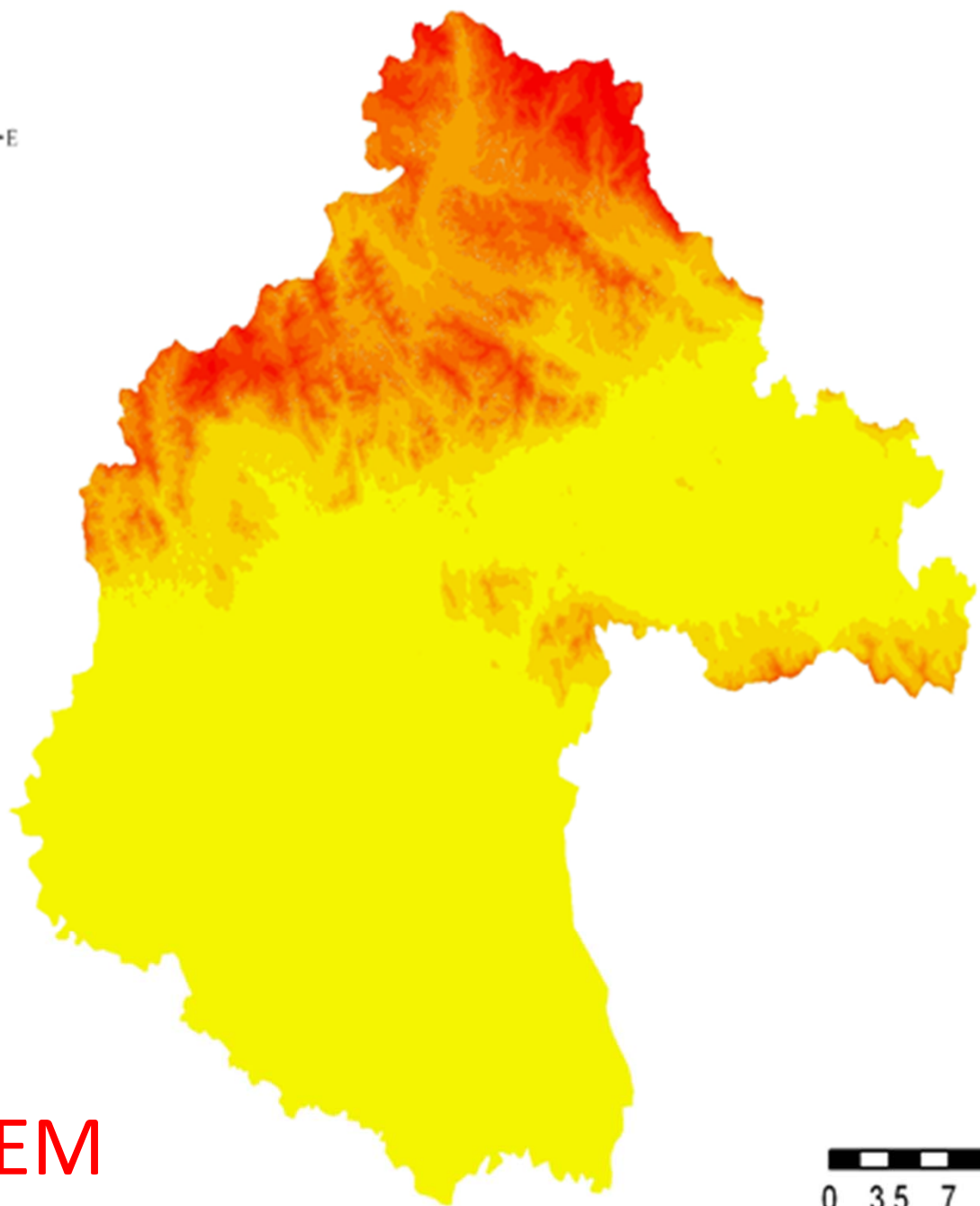


Land use



Landscape















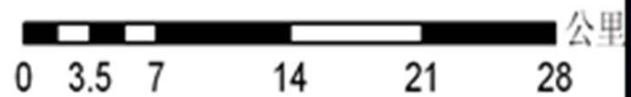
图例

DEM

高程值: 米

-  1 - 35
-  36 - 96
-  97 - 170
-  180 - 240
-  250 - 300
-  310 - 380
-  390 - 470
-  480 - 590
-  600 - 750
-  760 - 1,000

DEM



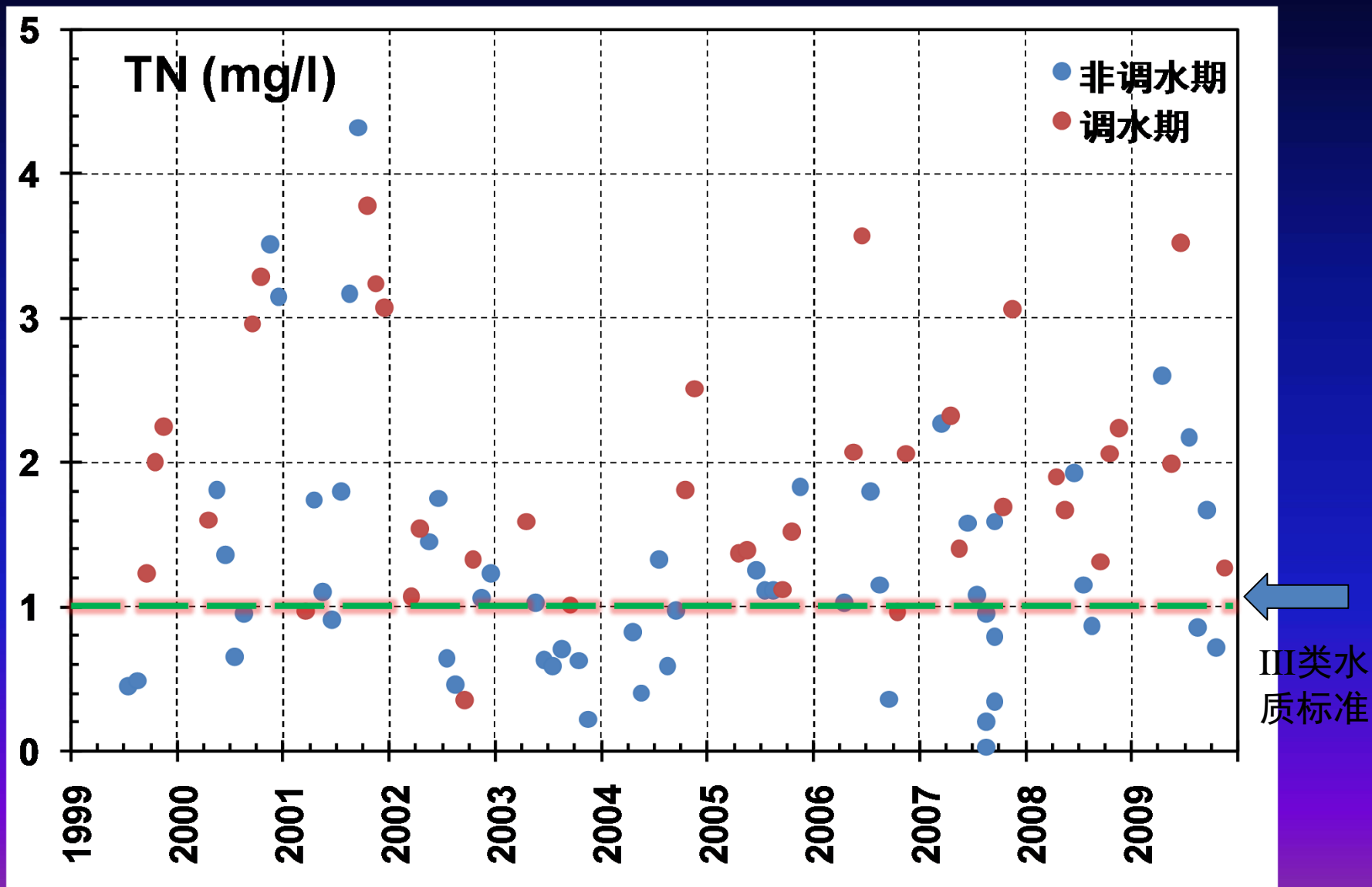
Flat north shore



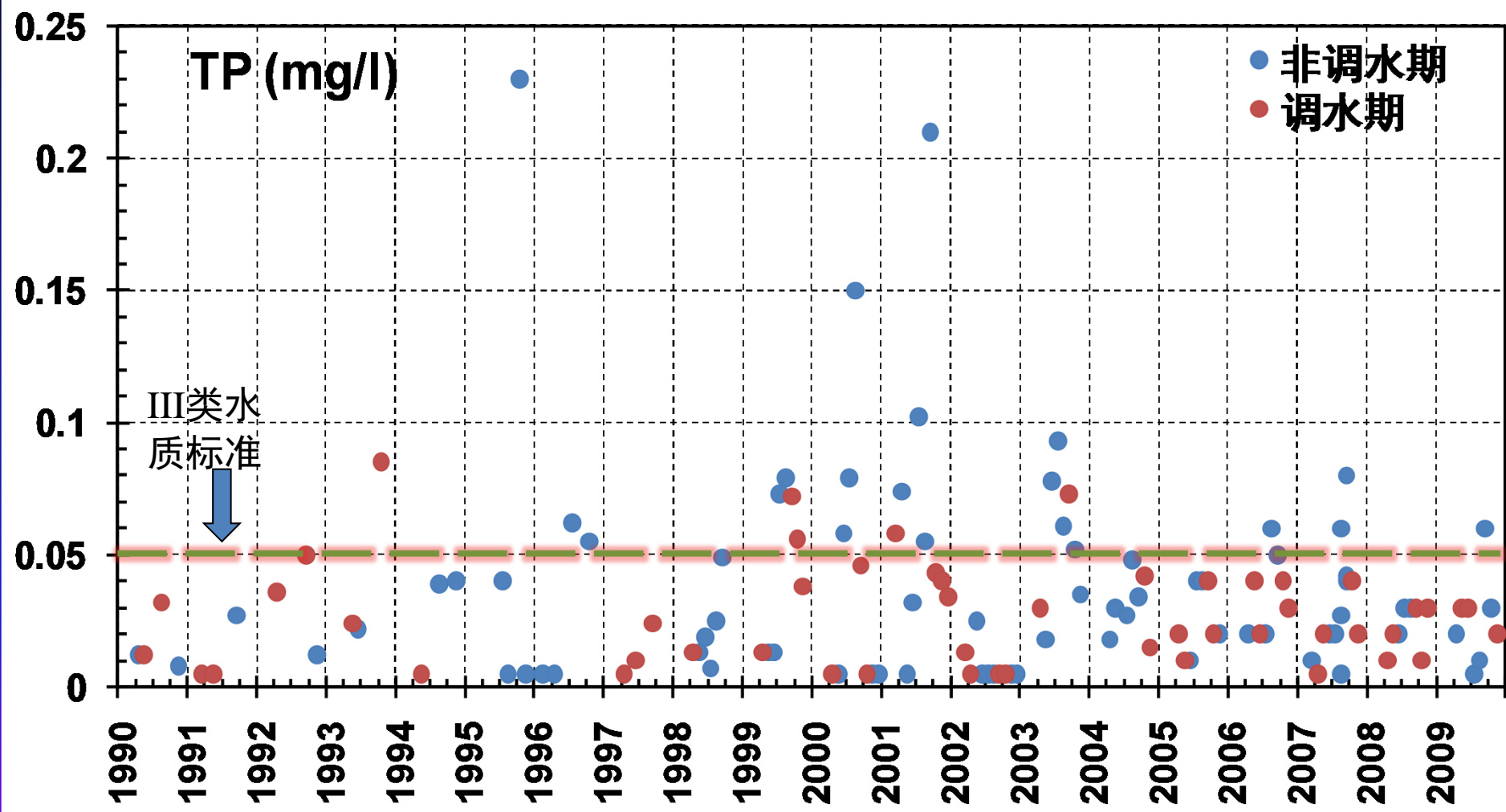
Sloping south shore



Water quality of Yuqiao Reservoir



Water quality of Yuqiao Reservoir

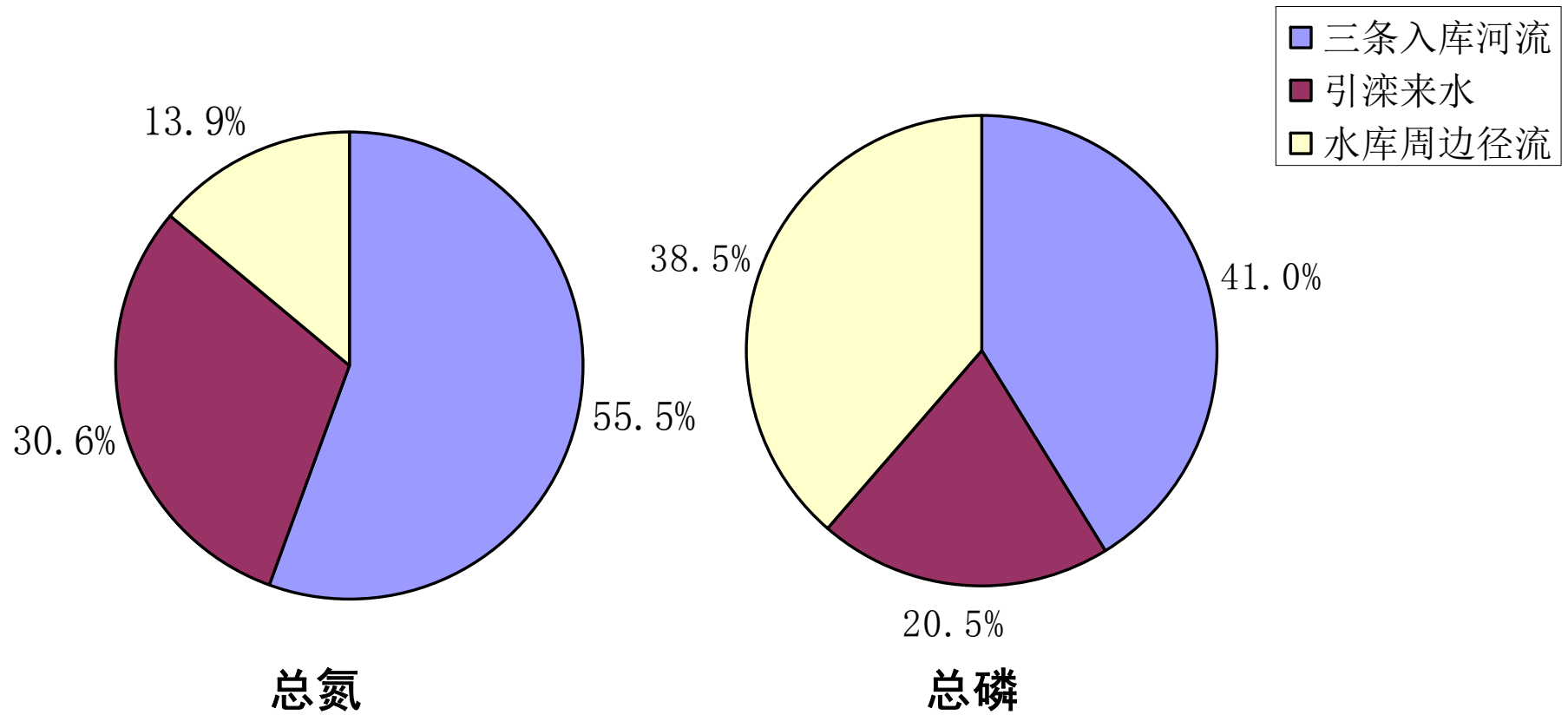


Water Balance

Water Balance for 1983-2008

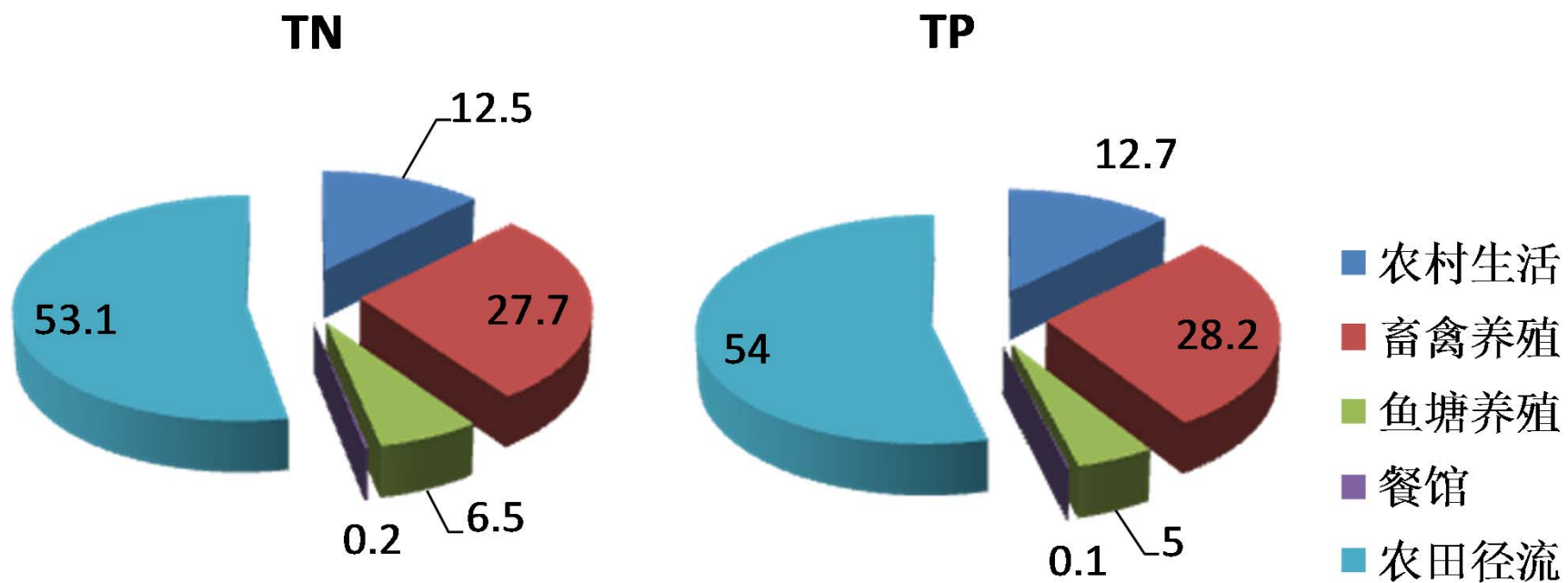
输入		水量 (亿m ³)	比例 (%)	输出	水量 (亿m ³)	比例 (%)
引滦实际入库量 ²		123.00	56.3	库区总渗漏量 ³	0.6	0.3
水库流 域汇入	蓟县周边汇入 ⁴	23.18	10.6	总放水量	199.04	91.2
	上游汇入	58.02	26.6			
库区水面总降水		14.16	6.5	总蒸发损失	18.73	8.5
合计		218.36	100	——	218.36	100

于桥水库全流域营养盐输入



Perhaps we should re-think it again from the viewpoint of P-fractionation.

于桥水库库区周边营养盐负荷比例



Identification of Sensitivity Zones for Non-point Source Pollution Using Modified Universal Soil Loss Equation (USLE)

USLE

$$A = R \times K \times LS \times C \times P$$

A: the potential long term average annual soil loss in tons per acre per year;

R: the rainfall and runoff factor by geographic location;

K: the soil erodibility factor;

LS: the slope length-gradient factor;

C: the crop/vegetation and management factor;

P: the support practice factor.

Modified USLE

$$A = R \times K \times LS \times C \times P \times Z$$

A: the potential long term average annual soil loss in tons per acre per year;

R: the distance factor;

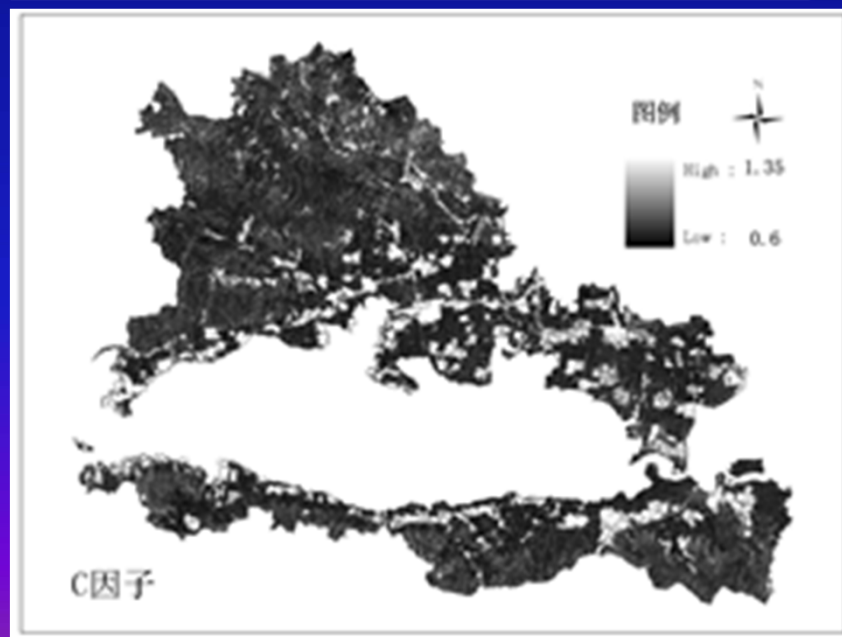
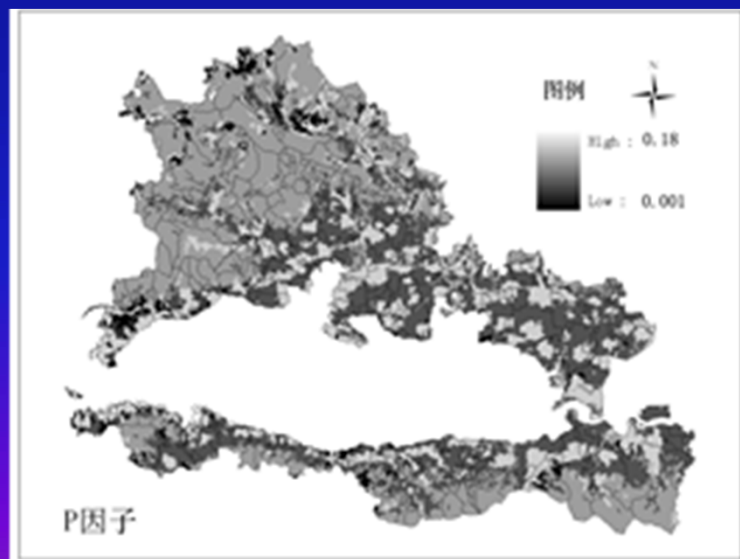
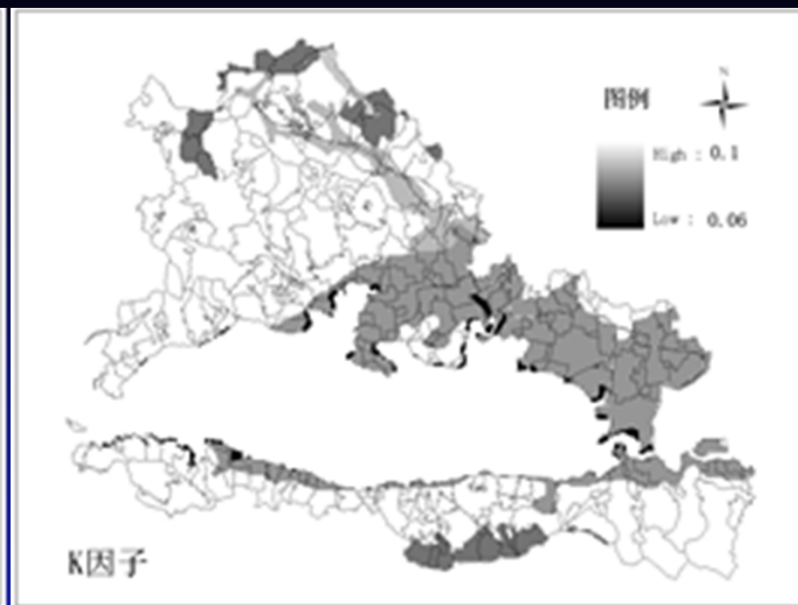
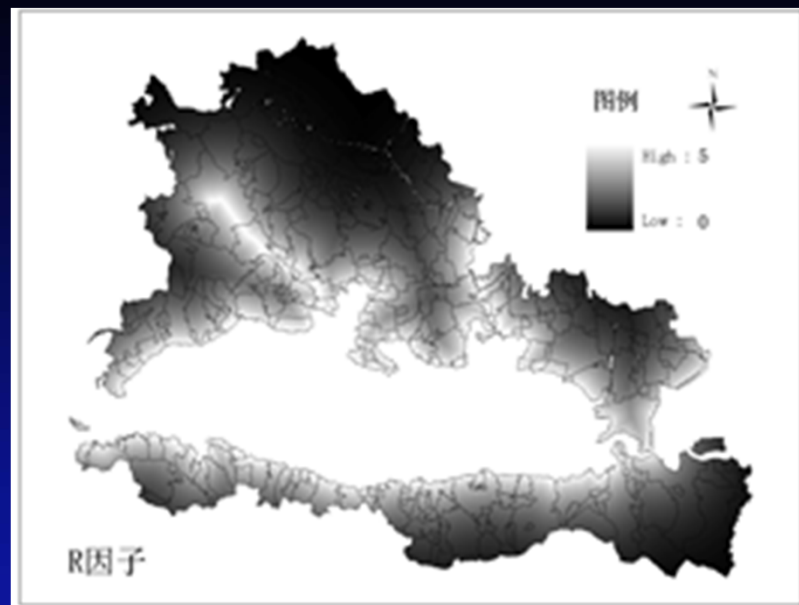
K: the soil erodibility factor;

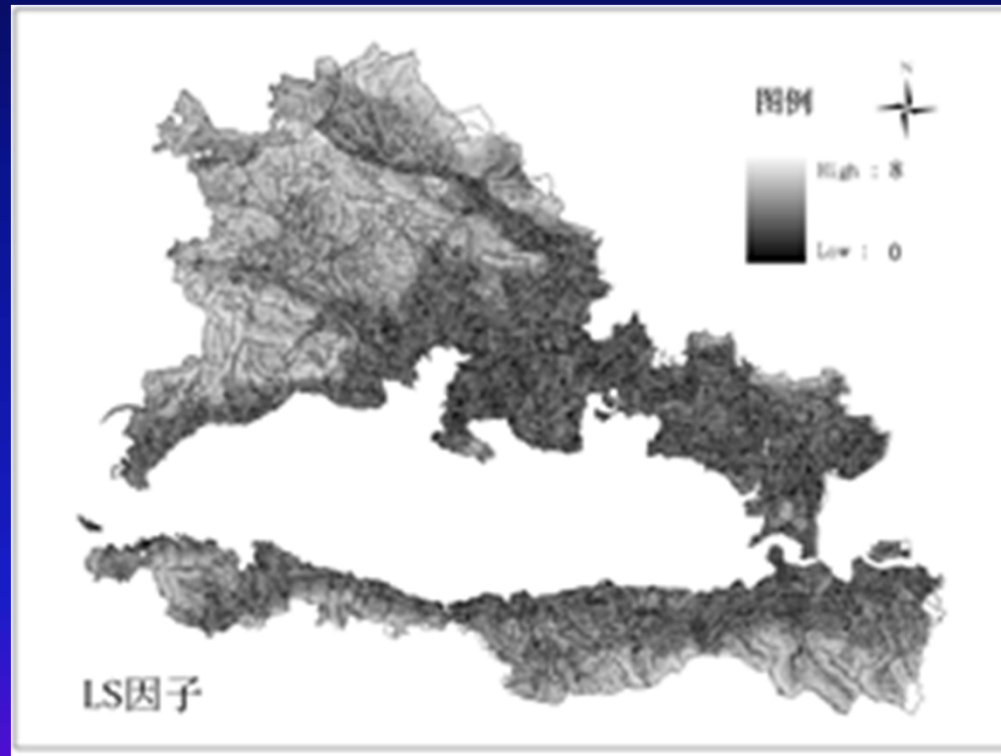
LS: the slope length-gradient factor;

C: the crop/vegetation and management factor;

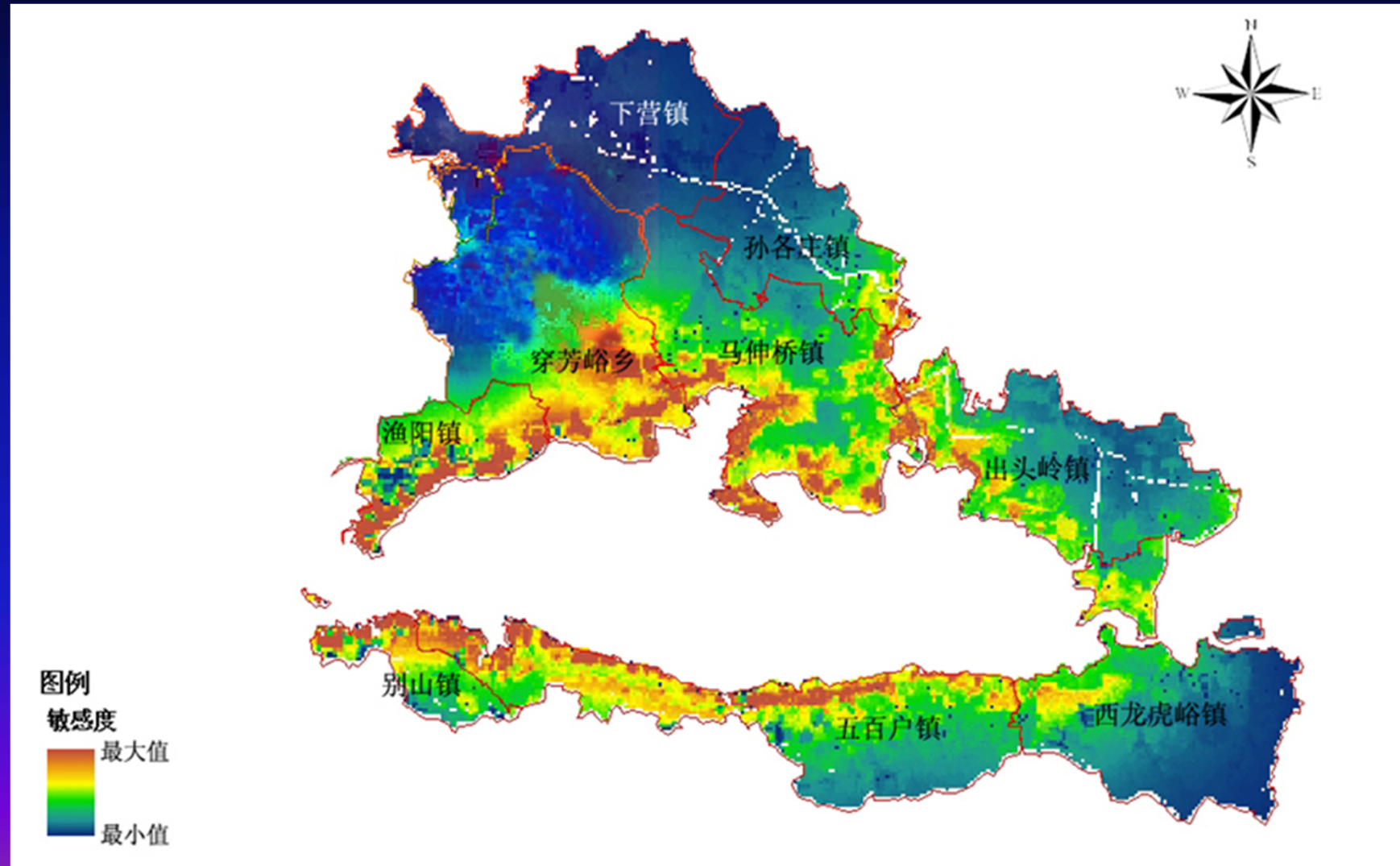
P: the support practice factor;

Z: the self-purification factor.





Sensitivity Zones



Thank you!

