Table 1 Equations for calculating the fifteen level individual indices.

Individual index level **E**	Description	Equation	Parameter	Remark
E_1	E_1 is average of lowest ten-day water level in a year	$E_1 = \overline{wl_i} = \frac{\sum_{i=1}^{10} wl_i}{10}$	wl_i is the water level of day i during the lowest ten days	Owning to the fluctuated water level during dry season, two thresholds including "low threshold" and "high threshold" values of E_1 were given, that is, if the average of lowest ten days water level was higher than the "high threshold" 10.25, or lower than "low threshold", the water level would be regarded as "unhealthy".
E_2	E_2 is average of highest ten-day water level in a year	$E_2 = \overline{wl_i} = \frac{\sum_{i=1}^{10} wl_i}{10}$	wl_i is the water level of day i during the highest ten days	
E_3	Tributary connectivity is measured by the percentage of entrances that is directly connected to Lake Poyang	$E_3 = n/N$	n is the number of entrances directly connected to Lake Poyang, and N means the total number of entrances including the connected and blocked ones.	/
E_4	Shrinking rate of lake area	$E_4 = A_1/A_2$	A_1 is current lake area, and A_2 . is historical lake area. Both of the two lake areas were selected when the water level reached 19 m at Hukou station, in	

			which the maximum lake area may appear.	
E_5	Annual runoff	$E_5 = \sum_{i}^{n=365} q_i * 24 * 3600$	q_i is daily runoff at Hukou station. E_5 is the summation of runoff over an entire year.	/
E_6	The ratio of protected to unprotected shoreline (physical characteristics) modified by the proportion of structures that are biologically compatible (biological impacts)	$SAI(E_6) = 1 - (P_{ratio} * B_{ratio})$	P_{ratio} is the ratio of the linear length of armored shoreline relative to the total linear length of the shoreline. A value of zero would represent an unprotected natural shoreline, and a value of one would represent a highly modified or 100% engineered shoreline. The biological shoreline indicator B_{ratio} is the ratio of the linear length of biologically incompatible structures (shore perpendicular structures, vertical sheet pile, or concrete walls) relative to the total linear length of the protected shoreline. A value of zero represents the lack of biological or ecological impact (high compatibility), and a value of one represents significant biological or ecological impact (low compatibility).	The resulting SAI ranges from zero, which represents a highly altered biologically incompatible shoreline, to one, which represents a biologically compatible shoreline (even though the shoreline may still be armored).
E_7	Concentrations of TN	/	Annual averages were based on all the sites and all four seasons. We took a straight average of all	/

			sites for each time period and then averaged the time periods to get the annual values.	
E_8	Concentrations of TP	/	/	/
E_9	Concentrations of EC	/	/	/
E_{10}	TLI	/	/	TLI is calculated based on concentration of Chl *a*, TN, TP, COD, and SD according to the relation-weighting synthetic trophic status index described by Wang et al. [1].
$E_{11,12,13,14,15}$	Concentrations of organic pollutants and heavy metals	/	/	The data of organic pollutants and heavy metals applied in this paper were collected from the latest published studies [2,3]
E_{16}	The ratio of blue-green algae biomass	$E_{16} = N_b / N$	N_b is the biomass of blue-green algae, and N is total algae biomass.	/
$E_{17,19,20}$	Berger–Parker index	$E_{17,19,20} = n_{\max} / N$	$n_{\max}$ is the density of the most-dominant species, and N is the total density of phytoplankton, zooplankton, and benthic macroinvertebrate.	Berger–Parker index is one of the most widely accepted and even metrics for measuring the diversity and stability of ecosystem. Therefore, it was also retained in zooplankton and benthic macroinvertebrate aspects.
E_{18}	The ratio of the large Daphnia	$E_{18} = N_D / N$	N_D is the density of large Daphnia, and N is the	The large Daphnia was often introduced in

	population density		total density of zooplankton.	the restoration area to control eutrophication, because nutrient-limited algae are generally accepted as a low-quality food source for herbivorous zooplankton [4]. Therefore, the high density of large Daphnia indicates the low risk of blue-green algae bloom
E_{21}	Total tolerance value	$FBI(E_{21}) = \sum_{i=1}^{n} F_i * N_i / \sum_{i=1}^{n} N_i$	F_i is defined as the tolerance value of benthic macroinvertebrate i, and N_i is the density of benthic macroinvertebrate i.	Tolerance values were obtained from published studies [5-7]
E_{22}	Area of wetland plants	/	/	/
E_{23}	The ratio of four Chinese carps	$E_{23} = W_f / W$	W_f is the weight of four Chinese carps, and W is the total weight of fish.	/
E_{24}	The proportion of the low-age groups of Chinese carps	$E_{24} = W_y / W$	W_y is the weight of fish in years 1 to 2, and W is the total weight of fish.	/
E_{25}	The number of wintering birds	/	/	/
E_{26}	The number of white crane	/	/	/

E_{27}	The ratio of water function zones that reached the drinking water qualification standard	$E_{27} = N_w / N$	N_w is the number of water function zones reaching the drinking water qualification standard, and N is the total number of water function zones.	/
E_{28}	The ratio of infected snails	$E_{28} = N_i / N$	N_i is the number of infected snails, and N is the total number of snails.	/
E_{29}	The ratio of marshlands with the snails	$E_{29} = N_m / N$	N_m is area of surveyed marshlands with the snails, and N is the total area of surveyed marshlands.	/
E_{30}	Flood storage capacity, that is, difference in discharge between inflows and outflow during the flood periods (April to June)	$E_{30} = S_{in} - S_{out}$	S_{in} is the runoff of all the inflows, and S_{out} is the runoff of outflow during the flood periods (April to June).	/
E_{31}	Amount of sand mining with government approval	/	/	/
E_{32}	Area ratio of dish-shaped sub-lakes under management	$E_{32} = A_m / A$	A_m is the area of dish-shaped sub-lakes managed by protected organizations, and A is the total area of the dish-shaped sub-lakes.	Until now, there were Lake Zhanbeihu, Lake Shahu, Lake Dahuchi, Lake Changhuchi, Lake Meixihu, and Lake Zhushihu, which are managed by local protected organizations.

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