

Classification of ecological indicator values

(Van Dam Index)

In this Diatom Flora of the Low Countries the updated data of the Van Dam indices are based on the paper version: 'A coded checklist and ecological indicator values of freshwater diatoms from The Netherlands' by H. van Dam, A. Mertens & J. Sinkeldam in Netherlands Journal of Aquatic Ecology (1994) 28: 117-133.

The data can be used freely, but the authors should be acknowledged in reports and publications.

WARNING: Prior to calculations of weighted average values, all values of R = 6 and T = 7 (indifferent) should be set to R = - and T = - (unknown) respectively. Explanation of the figures are given in the table.

Diatom Flora of the Low Countries

Table: Classification of ecological indicator values (Van Dam Index)

R pH	1	acidobiontic	optimum by pH < 5,5		
	2	acidophyl	mainly by pH < 7		
	3	circumneutral	mainly by pH ~ 7		
	4	alkaliphyl	mainly by pH > 7		
	5	alkalibiontic	exclusive by pH > 7		
	6	indifferent	no clear pH-optimum		
H Salinity			Cl ⁻ (mg/l)	Salinity (‰)	
	1	fresh	< 100	< 0,2	
	2	fresh-brackish	< 500	< 0,9	
	3	brackish -fresh	500 - 1000	0,9 - 1,8	
	4	brackish	1000 – 5000	1,8 – 9,0	
	5	brackish -marine	5000 – 10000	9,0 – 18,0	
	6	marine- brackish	10000 - 17000	18,0 – 30,0	
	7	marine	> 17000	> 30,0	
N Nitrogen ingestion	1	nitrogen autotrophic taxa, tolerant for very low concentrations of organic bounded nitrogen			
	2	nitrogen autotrophic taxa, tolerant for higher concentrations of organic bounded nitrogen			
	3	facultative nitrogen heterotrophic taxa, need periodical higher concentrations organic bounded nitrogen			
	4	obligate nitrogen heterotrophic taxa, need permanent higher concentrations organic bounded nitrogen			
O Oxygen supply	1	permanent high (around 100% saturation)			
	2	rather high (above 75% saturation)			
	3	moderate (above 50% saturation)			
	4	low (above 30% saturation)			
	5	very low (around 10% saturation)			
S Saprobic state			Water quality class	O ₂ -saturation (%)	BOD ₅ ²⁰ (mg/l)
	1	oligo saprobic	I, I-II	> 85	< 2
	2	β-meso saprobic	II	70- 85	2 - 4
	3	α-meso saprobic	III	25 - 70	4 -13
	4	α-meso-/ poly saprobic	III-IV	10 - 25	13- 22
	5	poly saprobic	IV	< 10	> 22
T Trophic state	1	Oligotraphentic			
	2	oligo-mesotraphentic			
	3	mesotraphentic			
	4	meso-eutraphentic			
	5	eutraphentic			
	6	hypereutraphentic			
	7	indifferent			
M Moisture	1	occur never or very rarely outside waterbodies			
	2	occur primarily in waterbodies, but sometimes also on humid places			
	3	occur primarily in waterbodies, but regularly also on wet and humid places			
	4	occur primarily on wet and humid or temporarily dry falling places			
	5	occur almost exclusive outside waterbodies			