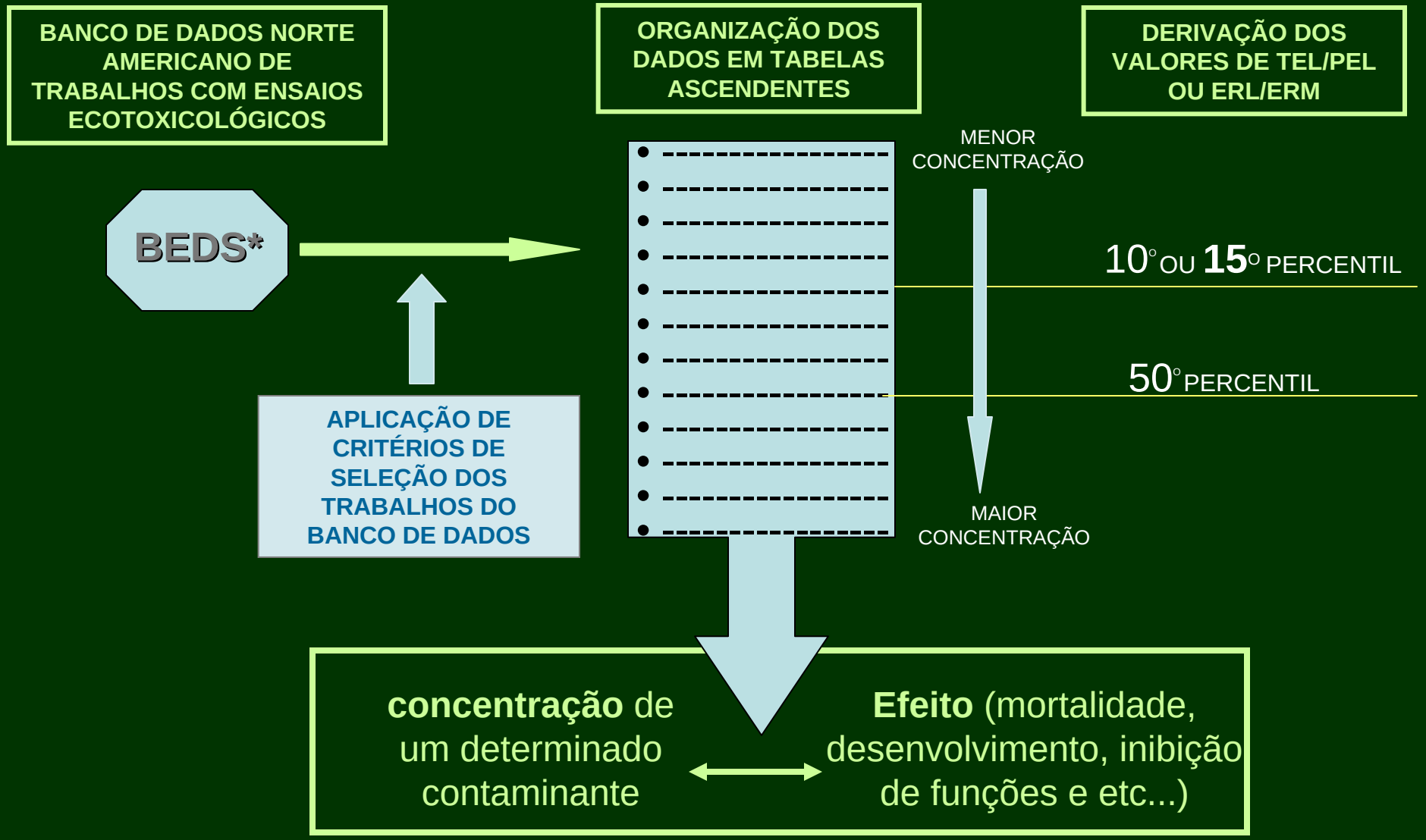
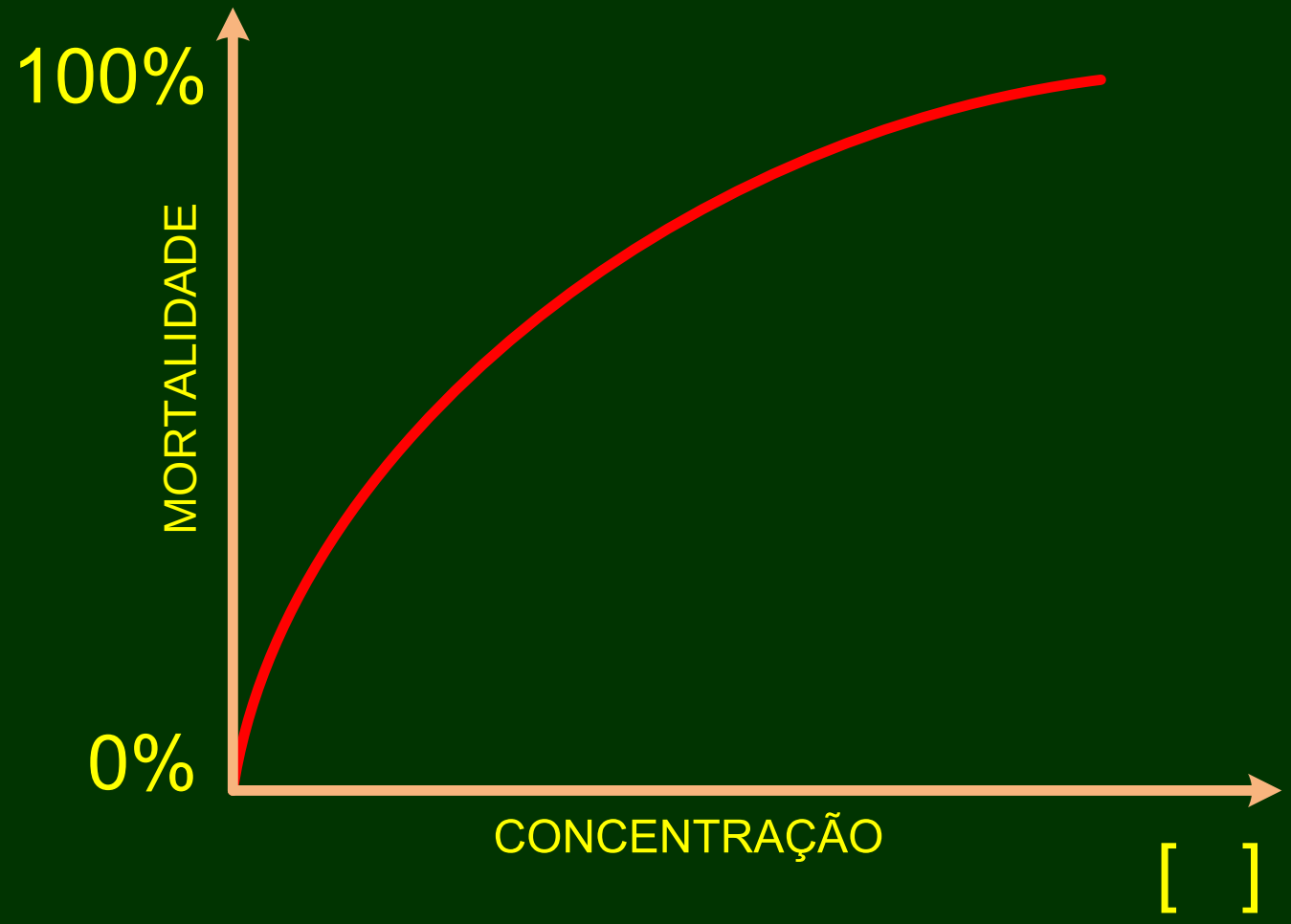
MÉTODO DE DERIVAÇAO DOS VALORES DA TABELA DA RESOLUÇÃO CONAMA 344/04

DERIVAÇÃO DOS VALORES DA TABELA DA RESOLUÇÃO 344/04



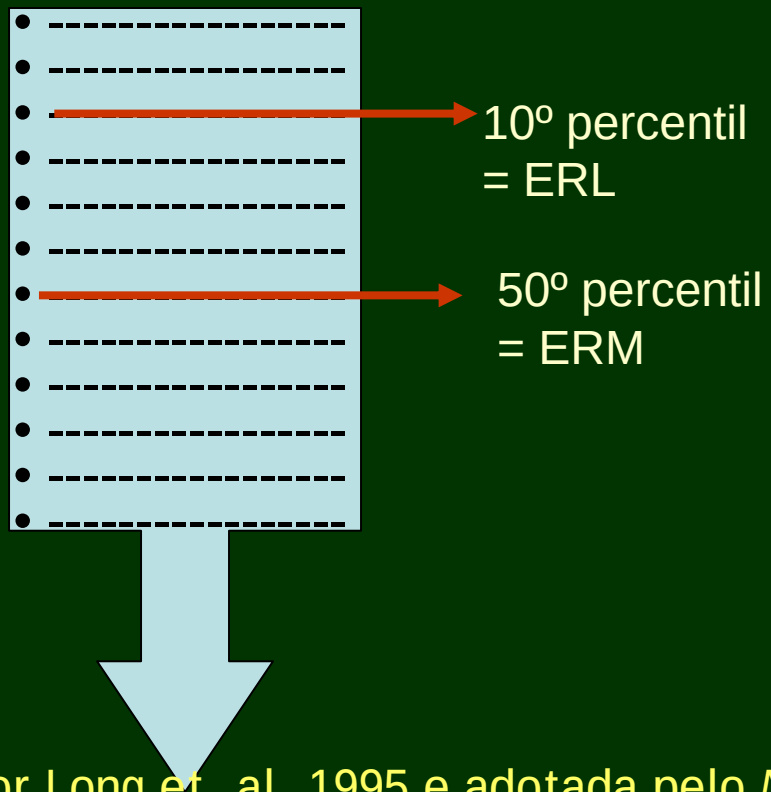
**Biological Effects Database for Sediments*

CURVA DOSE-RESPOSTA

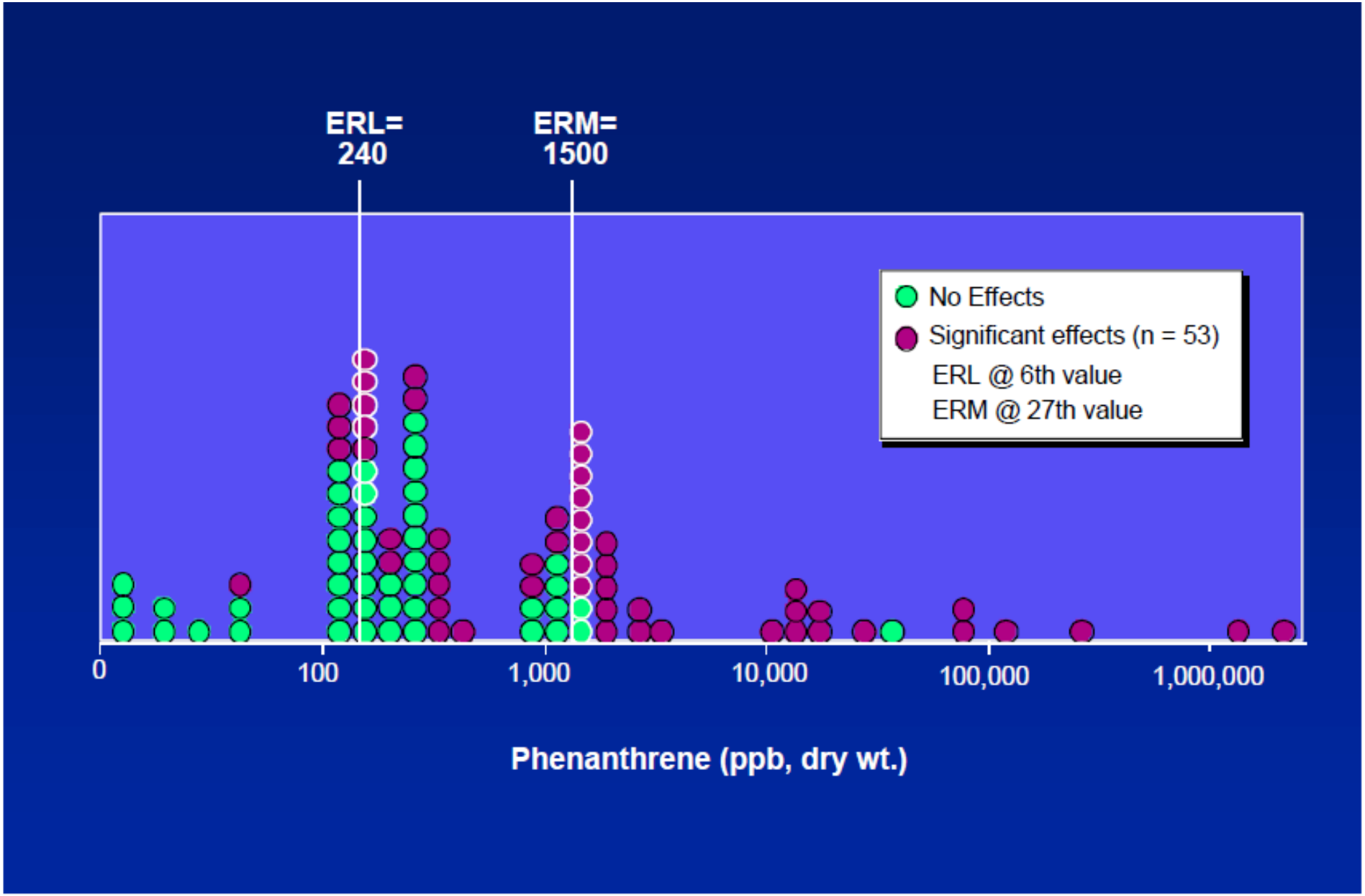


DERIVAÇÃO SEGUNDO O NOAA

Tabela ascendente de Concentrações correlacionadas OU NÃO a algum efeito biológico



Metodologia desenvolvida por Long et. al, 1995 e adotada pelo *National Status and Trends Program* do NOAA



Dados para fenantreno. Símbolos verdes indicam dados não relacionados a efeitos tóxicos e em roxo relacionados a efeitos tóxicos

DERIVAÇÃO SEGUNDO O CANADA

Tabela ascendente de Concentrações correlacionadas a algum efeito biológico

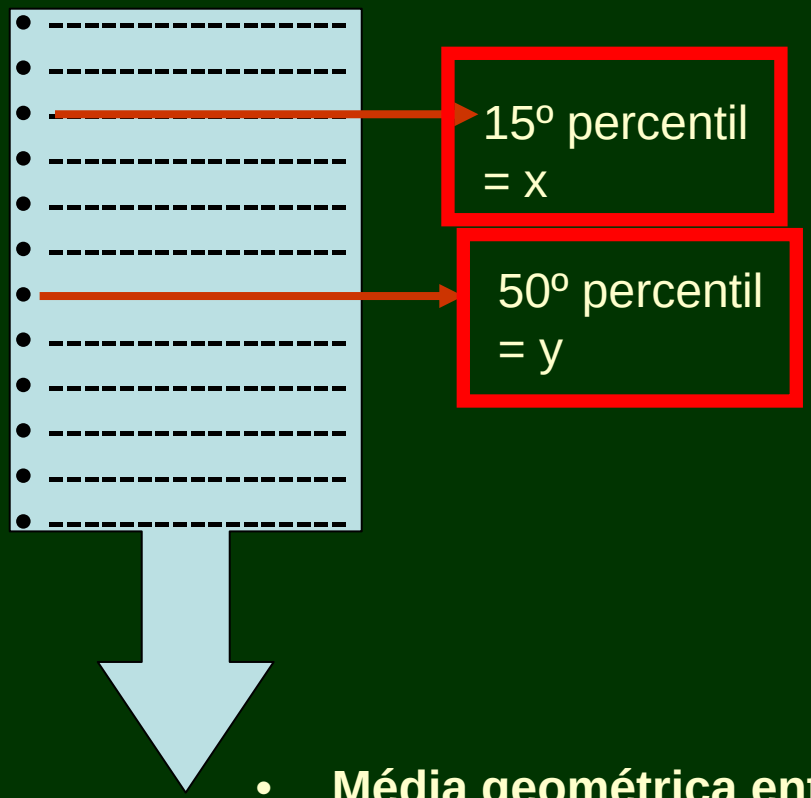
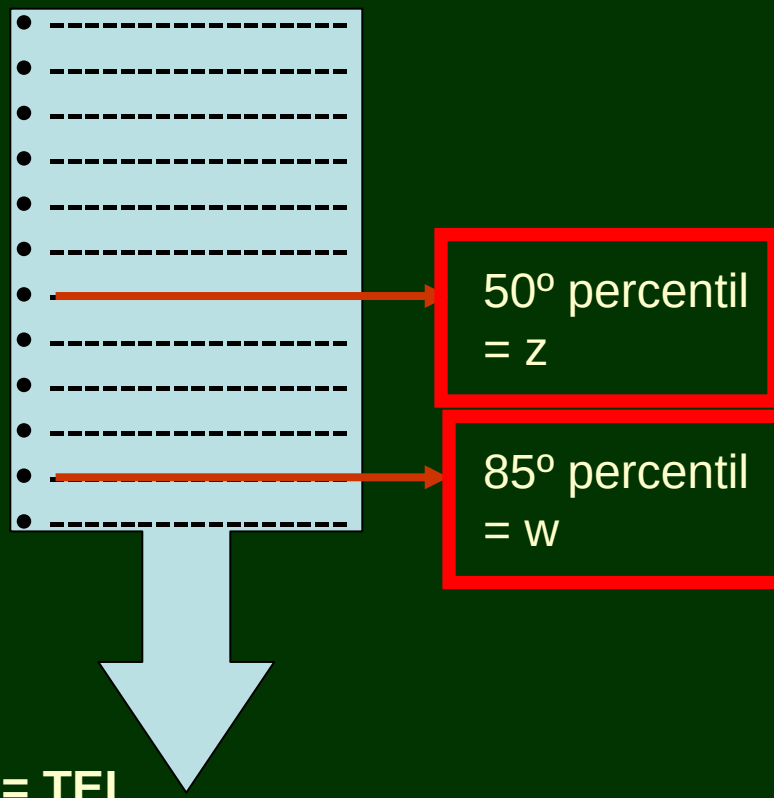
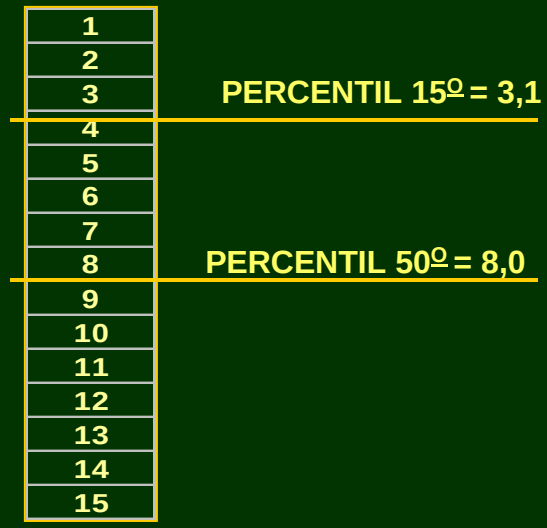


Tabela ascendente de Concentrações <u>não</u> correlacionadas a algum efeito biológico



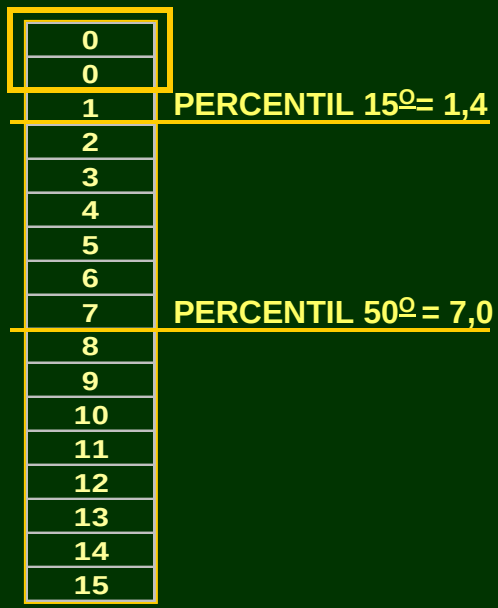
- **Média geométrica entre x e z = TEL**
- **Média geométrica entre y e w = PEL**

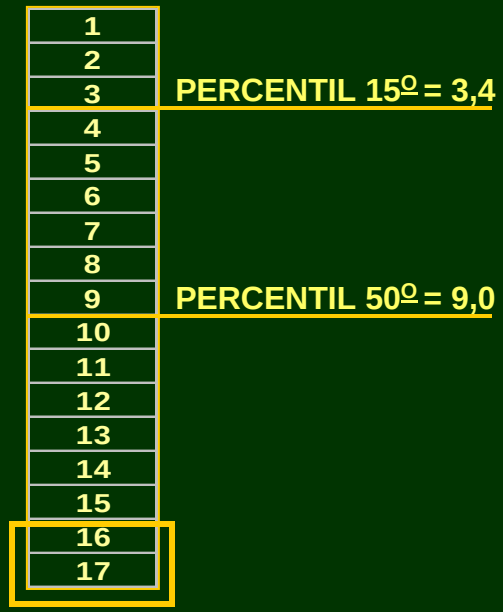
PERCENTIS – a influência do banco de dados, exemplo:



15% dos dados desta lista são menores ou iguais a 3,1

50% dos dados desta lista são menores ou iguais a 8,0





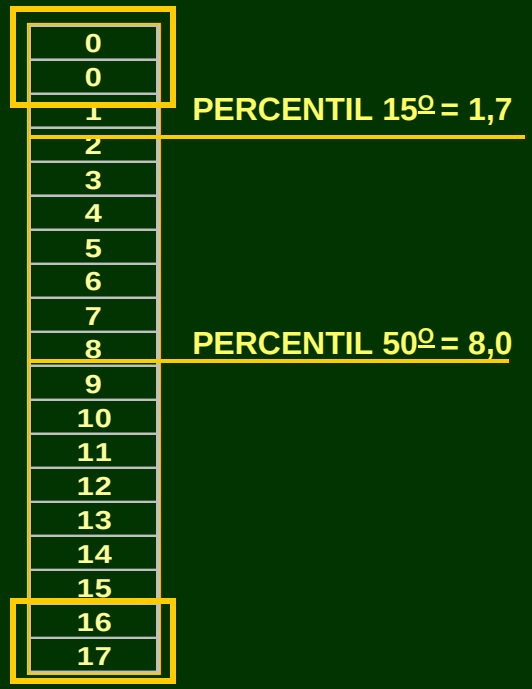


TABLE LOWER LEVEL

Item	Column 1 Substances	Column 2 Concentration
	Metal	
1.	Cadmium and its compounds	0.6 mg/kg (dry weight)
2.	Mercury and its compounds	0.75 mg/kg (dry weight)
	Organic compounds	
3.	Total polycyclic aromatic hydrocarbons (PAHs)	2500 µg/kg (dry weight)
4.	Total polychlorinated biphenyls (PCBs)	100 µg/kg (dry weight)
	Other substances	
5.	Persistent plastics and other persistent synthetic materials in a comminuted form	4% by volume

Disposal at Sea Regulations

SOR/2001-275

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5. (1) Waste or other matter referred to in section 4 that contains any of the substances set out in column 1 of the table to that section at a concentration above the concentration set out in column 2, shall be assessed using three marine or estuarine biological tests for sediment assessment, namely, an acute lethality test and

(*a*) two sub-lethal tests; or

(*b*) one sub-lethal and one bioaccumulation test.

Disposal at Sea Regulations

SOR/2001-275

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6. If the results of the three marine or estuarine biological tests set out in subsection 5(1) meet the criteria set out for those tests, the waste or other matter shall subsequently be considered to be below the Lower Level of the National Action List.

7. If the results of either the acute lethality test set out in subsection 5(1) or the two other tests set out in paragraph 5(1)(*a*) or (*b*) fail to meet the criteria set out for those tests, the waste or other matter shall be considered to be above the Upper Level of the National Action List.

8. If the results of the acute lethality test set out in subsection 5(1) and one of the tests set out in paragraph 5(1)(*a*) or (*b*) meet the criteria set out for those tests, the waste or other matter shall be considered to be below the Upper Level but above the Lower Level of the National Action List.

SOR/2001-275 Published by the Minister of Justice at the following address: http://laws-lois.justice.gc.ca

http://www.epa.gov/OWOW/oceans/gbook/gbook.pdf

United States
Environmental Protection
Agency

Department of The Army
U.S. Army Corps of Engineers

EPA 503/8-91/001
February 1991

Office of Water (4504F)

Evaluation of Dredged Material Proposed for Ocean Disposal

Testing Manual

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Table 1. Overview of approaches used for dredged material management in several European countries

Approach	Countries
Action levels (ALs)	
2 ALs	Belgium,[a] Finland,[b] France, Germany,[ab] Latvia,[b] Spain[ab]
1 AL	The Netherlands,[a] Poland
5 Categories	Portugal
Case-by-case + ALs	Ireland,[a] Norway, United Kingdom[ab]
Case-by-case	Denmark,[b] Italy,[ab] Sweden

[a] Bioassay.
[b] Under revision.

REFERËNCIA:

Integrated Environmental Assessment and Management — Volume 3, Number 4—pp. 539–551

Sediment Quality Assessment and Dredged Material Management in Spain: Part II, Analysis of Action Levels for Dredged Material Management and Application to the Bay of Cádiz

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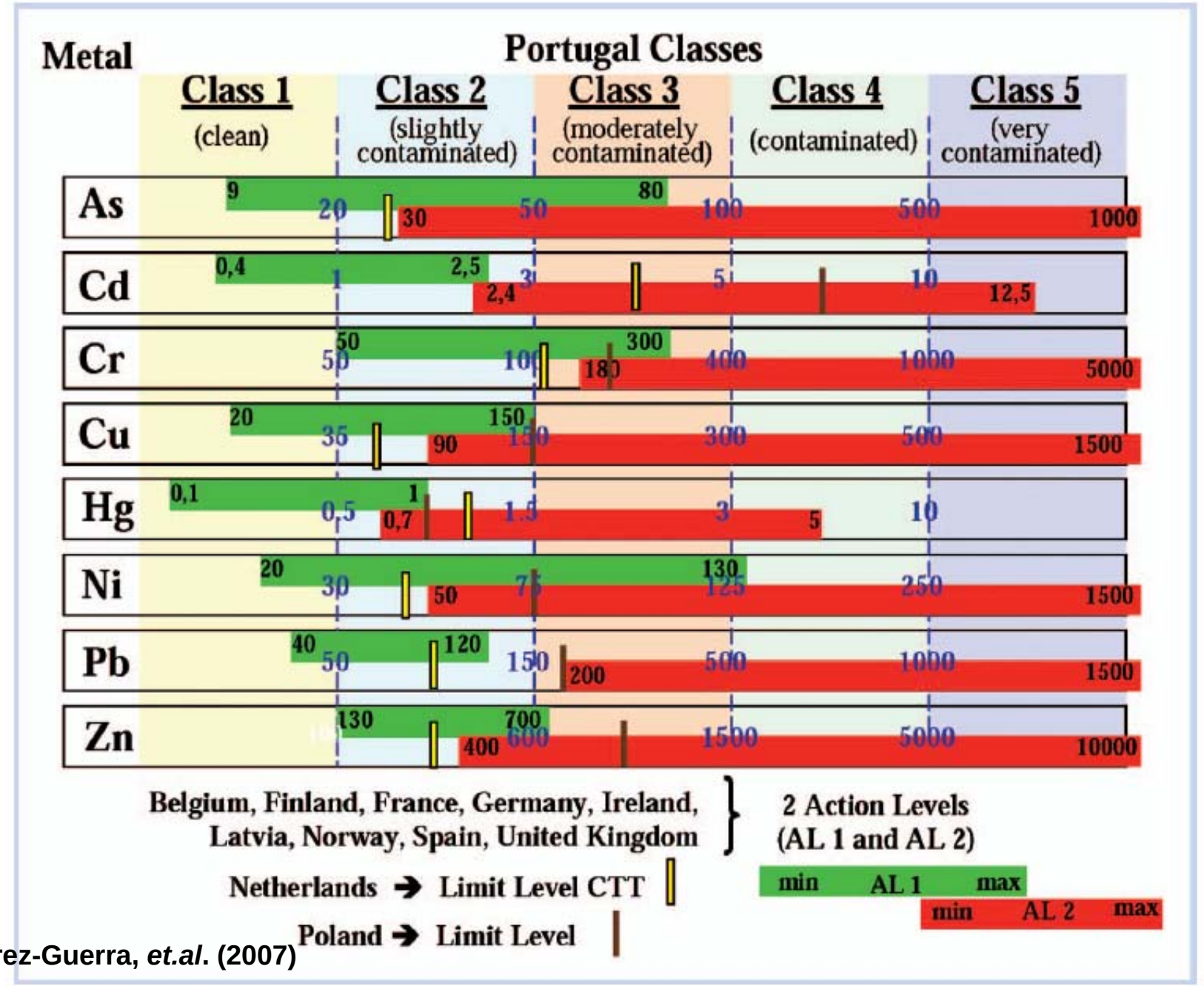

Alverez-Guerra, *et.al*. (2007)

Figure 1. Action levels used by different European countries for metals to regulate dredged material disposal at sea. Comparison of the values (mg/kg dry weight) for countries that use a 2–action level approach (green and red rectangles for ranges of values of the AL1 and the AL2, respectively) with the values of other kinds of action level approaches (5 classes in Portugal and the individual limit levels set in The Netherlands [yellow bars] and Poland [brown bars]).

		As	Cd	Cr	Cu	Hg	Ni	Pb	Zn
Belgium	AL1	20	2.5	60	20	0.3	70	70	160
	AL2	100	7	220	100	1.5	280	350	500
Finland	AL1	15	0.5	65	50	0.1	45	40	170
	AL2	60	2.5	270	90	1	60	200	500
France	AL1	25	1.2	90	45	0.4	37	100	276
	AL2	50	2.4	180	90	0.8	74	200	552
Germany	AL1	30	2.5	150	40	1	50	100	350
	AL2	150	12.5	750	200	5	250	500	1,750
Ireland	AL1	9	0.7	120	40	0.2	21	60	160
	AL2	70	4.2	370	110	0.7	60	218	410
Latvia	AL1	20	1	100	100	1	20	100	200
	AL2	30	3	300	200	3	50	200	400
Norway	AL1	80	1	300	150	0.6	130	120	700
	AL2	1,000	10	5,000	1,500	5	1,500	1,500	10,000
Spain	AL1	80	1.0	200	100	0.6	100	120	500
	AL2	200	5.0	1,000	400	3	400	600	3,000
United Kingdom	AL1	20	0.4	50	30	0.25	30	50	130
	AL2	70	4	370	300	1.5	150	400	600

Alverez-Guerra, *et.al*. (2007)