

**Monitorização de Sistemas Ambientais 2018-2019**  
**Trabalho prático II & III – ASSETS preparação de dados e**  
**aplicação do modelo**  
**<http://mosam.org/P2&3.pdf>**

## **Duração**

Duas horas

15m de apresentação (push)

75m de planeamento

30m de apresentação (pull) – 5 grupos, 5m por grupo

## **Organização**

Grupos de 4 pessoas

## **Objectivos**

1. Preparar dados de entrada no Assessment of Estuarine Trophic Status (ASSETS) para o estuário do Tejo
2. Introduzir dados de síntese para o estuário do Tejo no modelo Assessment of Estuarine Trophic Status (ASSETS), baseados nos cálculos efectuados na Prática II e em dados fornecidos neste protocolo;
3. Preparar *oito* slides para apresentação – Let's avoid death by Powerpoint
4. Fazer a apresentação da abordagem e dos dados, resultados do modelo e discutir a sua aplicação prática

## **Metodologia**

1. Obter os dados necessários para correr o ASSETS com base em ficheiros de SIG, dados do estuário do Tejo bem como nos recursos disponíveis na internet
2. Fazer download e instalar a aplicação ASSETS, [www.eutro.org/register](http://www.eutro.org/register)

3. Cálculo da Pressão
4. Cálculo do Estado
5. Cálculo da Resposta

## **Dados de apoio**

### ***Cálculos específicos***

1. For the General tab of ASSETS i.e. the opening screen:

How many salinity zones exist, and their areas in km<sup>2</sup>.

2. Pressure tab of ASSETS

For an estuary:

Mean salinity in the estuary

Mean salinity offshore

Mean nitrogen concentration in river ( $\mu\text{mol L}^{-1}$ )

Mean nitrogen concentration offshore ( $\mu\text{mol L}^{-1}$ )

Estuary volume ( $\times 10^6 \text{ m}^3$ )

River flow to the estuary ( $\text{m}^3 \text{ s}^{-1}$ )

Tidal range (m)

Stratification (upper layer volume as percentage of total volume)

3. State tab of ASSETS

For each zone defined in 1, the following:

i) For chlorophyll and dissolved oxygen, the percentile 90 and percentile 10 respectively. Qualitative knowledge of the spatial and temporal extent of the symptom, for instance, if the chlorophyll P90 value is in the hypereutrophic class, >60, does it affect a very low area, etc, and is it e.g. periodic, or episodic, etc.

ii) For opportunistic macroalgae, HAB and SAV, qualitative knowledge of the scale of the symptom, together with: (a) for macroalgae, temporal extent; (b) for HAB, duration and frequency; (c) for SAV, magnitude of change. All these are done based on expert knowledge.

#### 4. Future outlook (response) tab of ASSETS

Expert knowledge on either:

i) In general terms on whether the nutrient pressures will decrease or increase (relative scale of magnitude)

ii) In more detailed terms, the same issue, but broken down into agricultural and urban (sewage)

5. Completing these will allow users to (a) view the state score of the combined various zones, and (b) view the overall score in the ASSETS tab.

### ***Estações de amostragem***

Site: <http://mosam.org/>

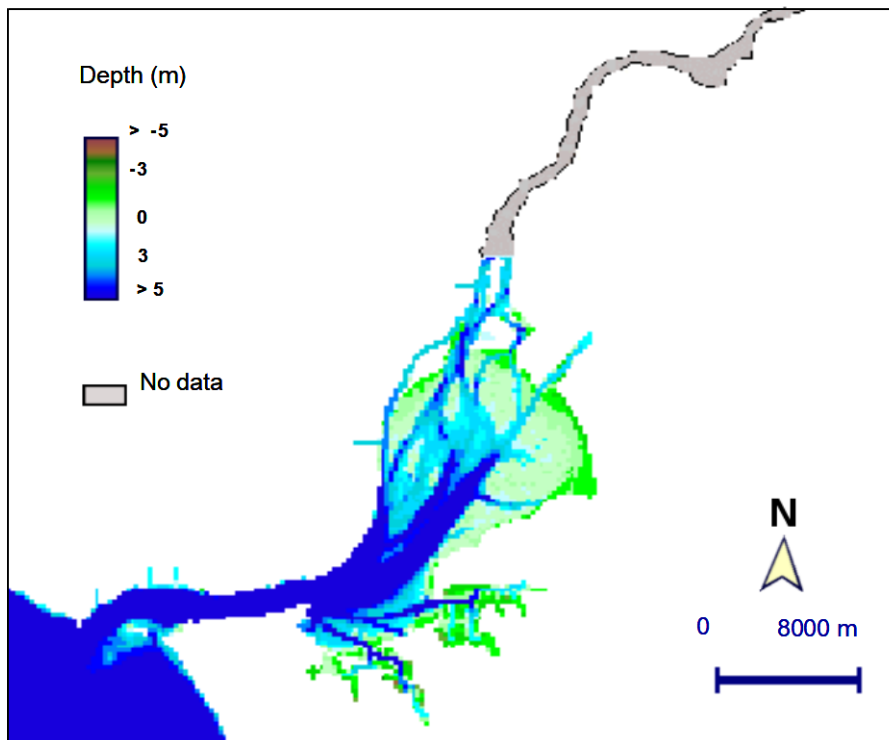
Ficheiro: MOSAM Pratica II GIS files.zip

### ***Dados de qualidade da água***

Site: <http://mosam.org/>

Ficheiro: ASSETS Tagus data workup.zip

## Batimetria



## Estações de amostragem



## Dados de apoio

### Zonas de salinidade

Salinity zones	km2
Tidal freshwater	13.9
Mixing	77.6
Seawater	216.3

### Dados qualitativos de estado

#### Tidal freshwater zone

	Value	Spatial	Temporal
<i>Primary symptoms</i>			
Chlorophyll a		Very low (0-10%)	Periodic
Macroalgae	No problems		Not applicable
<i>Secondary symptoms</i>			
Submerged Aquatic Vegetation	Not applicable	Not applicable	
Nuisance and toxic blooms	No problems	No problems	No problems
Dissolved oxygen	No problems	Not applicable	Not applicable

#### Mixing zone

	Value	Spatial	Temporal
<i>Primary symptoms</i>			
Chlorophyll a		High (>50%)	Periodic
Macroalgae	No problems		Not applicable
<i>Secondary symptoms</i>			
Submerged Aquatic Vegetation	Not applicable	Not applicable	
Nuisance and toxic blooms	No problems	No problems	No problems
Dissolved oxygen		High (>50%)	Periodic

#### Seawater zone

	Value	Spatial	Temporal
<i>Primary symptoms</i>			
Chlorophyll a		High (>50%)	Periodic
Macroalgae	No problems		Not applicable
<i>Secondary symptoms</i>			
Submerged Aquatic Vegetation	Not applicable	Not applicable	
Nuisance and toxic blooms	Problems observed	Days	Episodic
Dissolved oxygen	No problems	Not applicable	Not applicable

#### Notas:

Se o valor de P<sub>90</sub> de clorofila for >5, usar  
 Very low (0-10%) Periodic

Se o valor de  $P_{10}$  de oxigénio dissolvido for  $\leq 5$ , usar:  
High (>50%) Periodic