DOES DREDGING IMPACT WATER QUALITY?

- **Context and Objectives:**
  - The dredging management Plan of VNF for Seine basin and limited in situ experimental monitoring on small sites
  - Estimate the environment sensibility and define methodological tools of monitoring
  - VNF / Cerema partnership; a steering committee: environmental police, AFB, VNF, basin agency, Cerema

- **Four monitoring sites in 2015-2017**

<table>
<thead>
<tr>
<th>Sites</th>
<th>Dates of follow-ups</th>
<th>ch/eco logical state</th>
<th>Sediments</th>
<th>environ Sensibility</th>
<th>Yield m³/j</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oise Isle-Adam (95)</td>
<td>2015 2016 2017</td>
<td>good/good</td>
<td>inert</td>
<td>high</td>
<td>240-360</td>
</tr>
<tr>
<td>Amançon Migennes (89)</td>
<td>2016</td>
<td>good/good</td>
<td>inert</td>
<td>high</td>
<td>609</td>
</tr>
<tr>
<td>Seine aval Moisson (78)</td>
<td>2016 2017</td>
<td>good/good</td>
<td>inert</td>
<td>high</td>
<td>408</td>
</tr>
<tr>
<td>Canal Asnières Courcy (51)</td>
<td>2017</td>
<td>med/coarse</td>
<td>inert</td>
<td>low</td>
<td>240</td>
</tr>
</tbody>
</table>

- **Physico-chemical protocol 2015**
  - Before dredging, initial state by literature review (AFB and VNF)
  - During dredging, physico-chemical monitoring:
    - pH, dissolved O₂, T°C, turbidity, conductivity, reduction potential, NH₄⁺, NO₃⁻
    - Upstream fixed monitoring
    - Downstream mobile monitoring (vert./long. profiles)

- **Turbidity and Suspended solids:**
  - good indicators of dredging impact
    - Decrease quickly upstream of the dredger and increase with depth
    - The impact distance: 50-70 m upstream of the dredger; return in the initial state towards 200 m

- **Other slightly varying parameters**
  - Dissolved oxygen: the regulation limit is always observed (> 4mg/l)
  - Good correlation between suspended solids, sediment grading and yield of the dredging operation

- **Conclusions**
  - The variation of the various parameters is limited in time and space
  - Hydrobiological study is ongoing
  - Future recommendations for the asset manager

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