DOLMANT - Development Of Lake MANagement Tools

This project is part financed by the European Union's INTERREG IVA Cross-border Programme managed by the Special EU Programmes Body

This AFESD work, crossing both Fisheries and Aquatic Ecosystems Branch and Agri-Environment Branch, will develop lake management tools that integrate the biological, hydromorphological, and physicochemical properties of lakes with lake and lake catchment variables in the INTERREG region. The models will provide frameworks for evaluating the effects of measures, adopted in catchments, to improve or maintain the ecological status of lakes. This will allow Northern Ireland and the Republic of Ireland to create an effective programme of measures and help meet requirements under the EU Water Framework Directive and Nitrates Directive.

The project involves a number of work packages:

1. Fish stock assessment at selected small lakes (Fig. 1 & 2)
2. Fish stock Assessment of Lough Neagh (Fig. 3)
3. Phytoplankton assessment of selected small lakes (Fig. 4 & 5)
4. Phytoplankton assessment of Lough Neagh and Lough Erne
5. Zooplankton assessment of selected small lakes
6. Zooplankton assessment of Lough Neagh and Lough Erne (Fig. 6)
7. Macrophyte (lake plant) assessment of selected small lakes
8. Macrophyte assessment of Lough Neagh and Lough Erne
9. Linking the lake catchments to lake chemistry and biology:
   - Statistical models will be used to link the different biological elements and study indirect and direct relationships (Fig. 7).
   - Nutrients from the lake catchments will be incorporated where possible to improve the lake models.
   - The statistical models will help predict changes in different biological groups due to changing nutrient status.
   - This will benefit legislators implementing European Directives in both Northern Ireland and the Republic of Ireland.

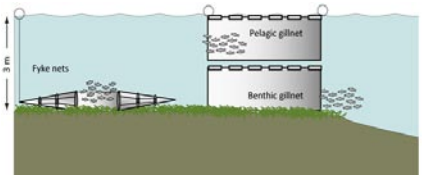


Figure 1: Descriptive of CEN sampling method

Figure 2: Example of fish (*Tinca tinca*) caught during small lake survey.

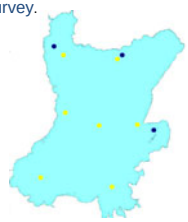


Figure 3: Lough Neagh fish sampling sites:
Blue points: Larval sampling sites. Yellow points: Draught/gill netting sites.

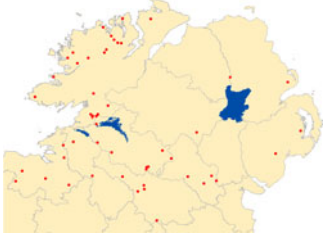
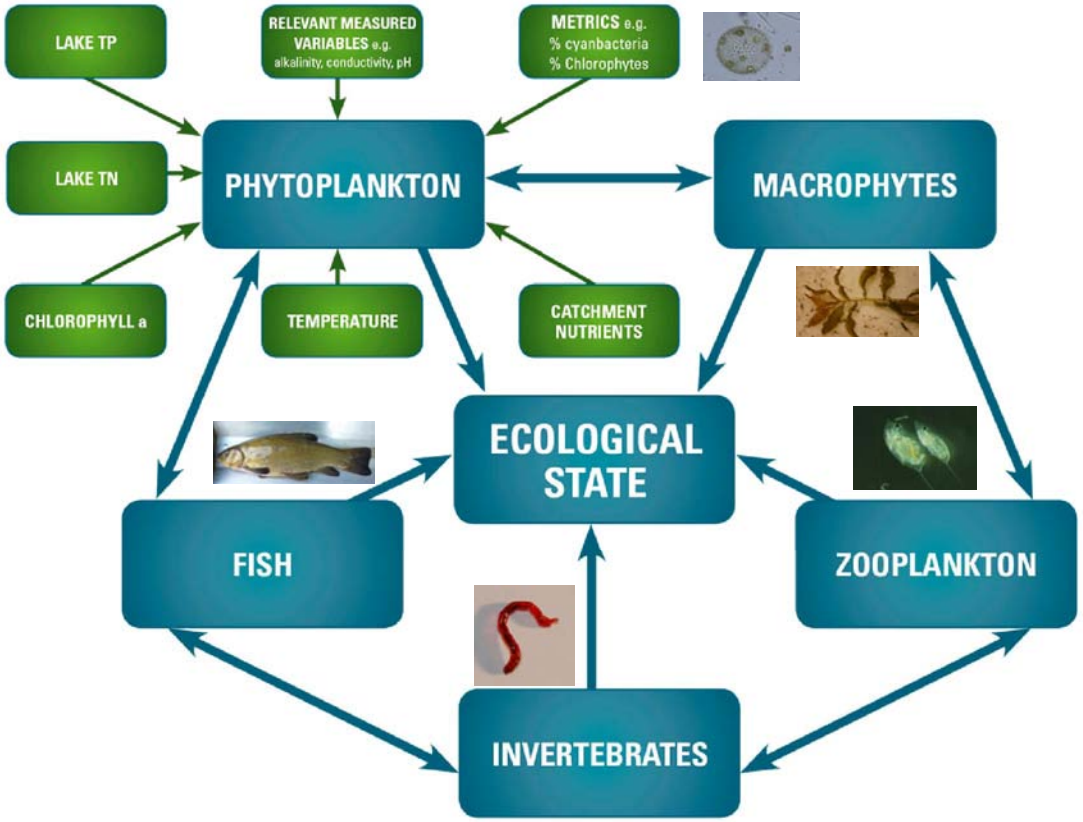


Figure 4: Sample locations in the INTERREG region

Figure 7: Linking lake ecology



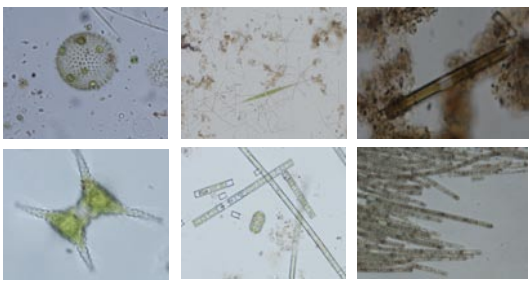


Figure 5: Phytoplankton from INTERREG lakes

Figure 6: Zooplankton taxa from INTERREG region

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