



# RESULTS OF WATER MONITORING AT SELECTED PROJECT SITES

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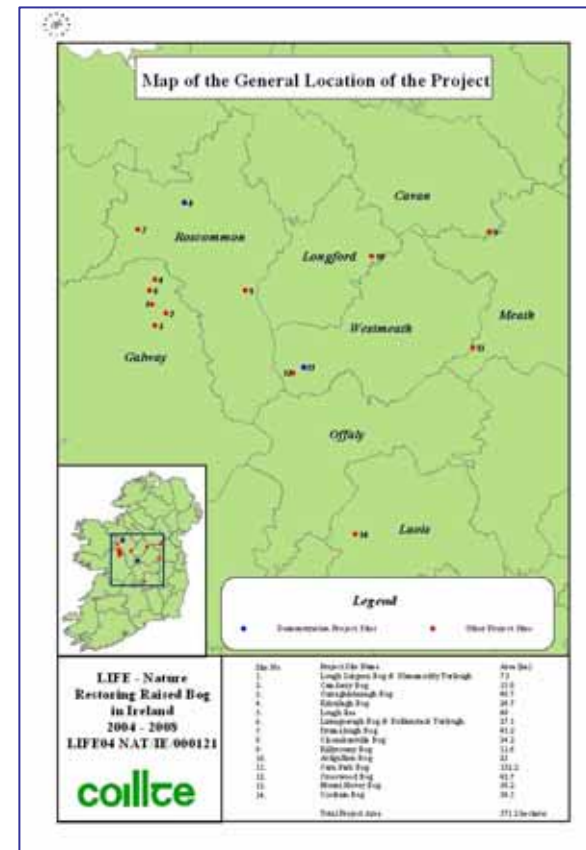
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# Purpose of Water Monitoring

- Eutrophication identified as the greatest single threat to the quality of the country's rivers and lakes.
- Contribution of forestry to eutrophication in Ireland largely unquantified.
- Need to monitor impacts of bog restoration measures which will entail:
  - Larger than normal feeling coups
  - Non conventional harvesting techniques
  - Blocking of forest drains





# Monitoring Sites

## → Selection criteria:

- Presence of a significant watercourse
- Environmentally sensitive areas

## → Methodology:

- Automatic sampler
- Grab sampling





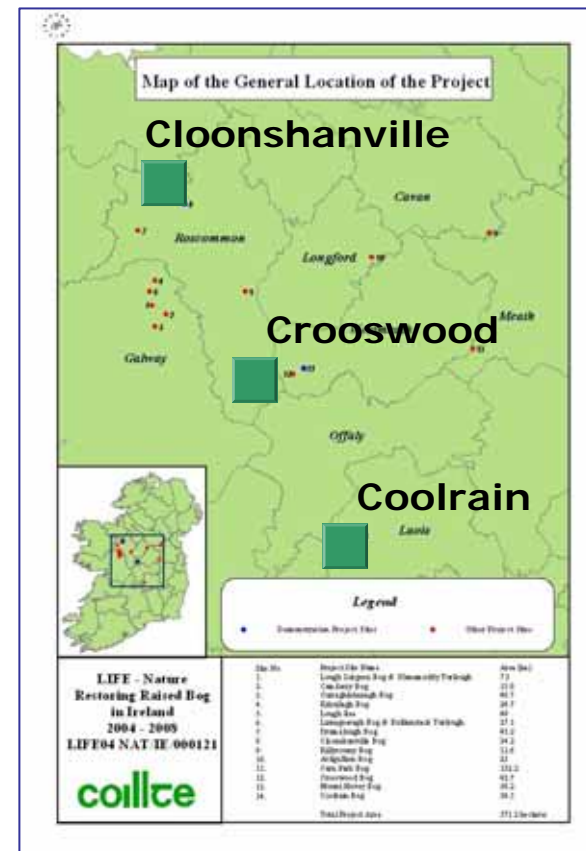
# Monitoring Sites

## → Sampling frequency:

- Automatic sampler (24/7)  
Daily composite sample  
(comprising of taking a sample every hour during a 24 hr period)
- Grab sampling  
Approximately every week

## → Parameters analysed:

- Colour, pH, Total Suspended Solids, Conductivity, Alkalinity, Hardness, Potassium, Ammonia, Nitrate, Chloride, Sulphate, Ortho-phosphate and Total Phosphorus

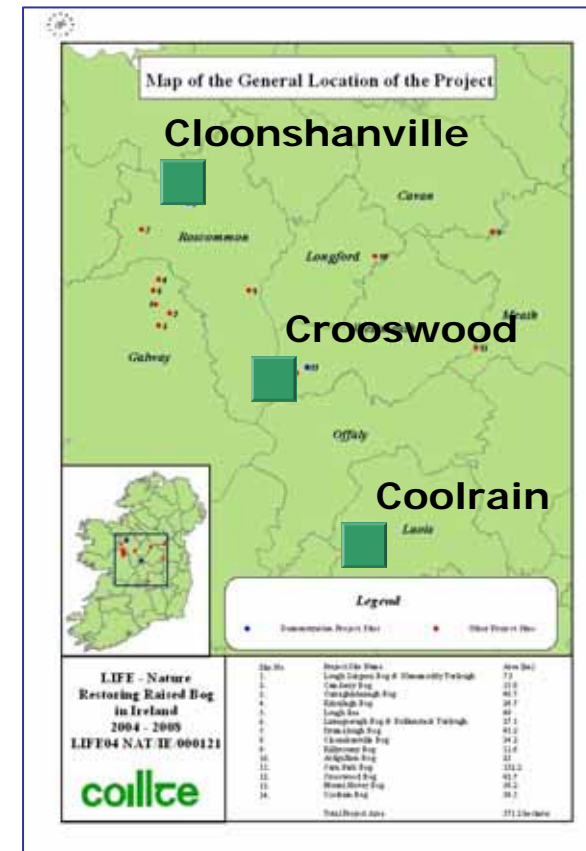




# Monitoring Sites

## → Forest operations

Demonstration site	Area (ha)	Commercial (ha)	Fell to waste (ha)	% of demonstration site felled
Coolrain	56.5	17.8	11.2 (11.2)*	51
Cloonshanville	34.2	5.2	24.0 (17)*	85



\* Windrowed

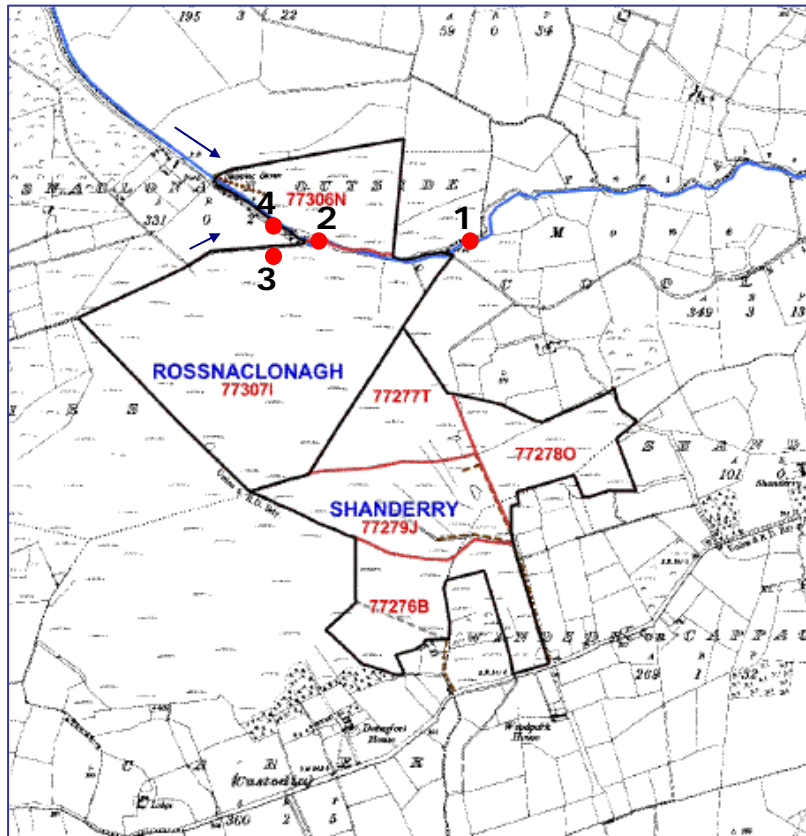
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## Sample Pts – Coolrain Bog



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## Results – Coolrain Bog (14/7/05-31/7/07)



	TSS (mg/l) (25)*	Ortho-P (ug/l) (20)	Total-P (ug/l) (60)	N-NH3 (mg/l) (0.20)	N-N03 (mg/l) (11.0)
Median	2	3	14	<0.02	0.65
Max	8	17	57	0.03	1.43

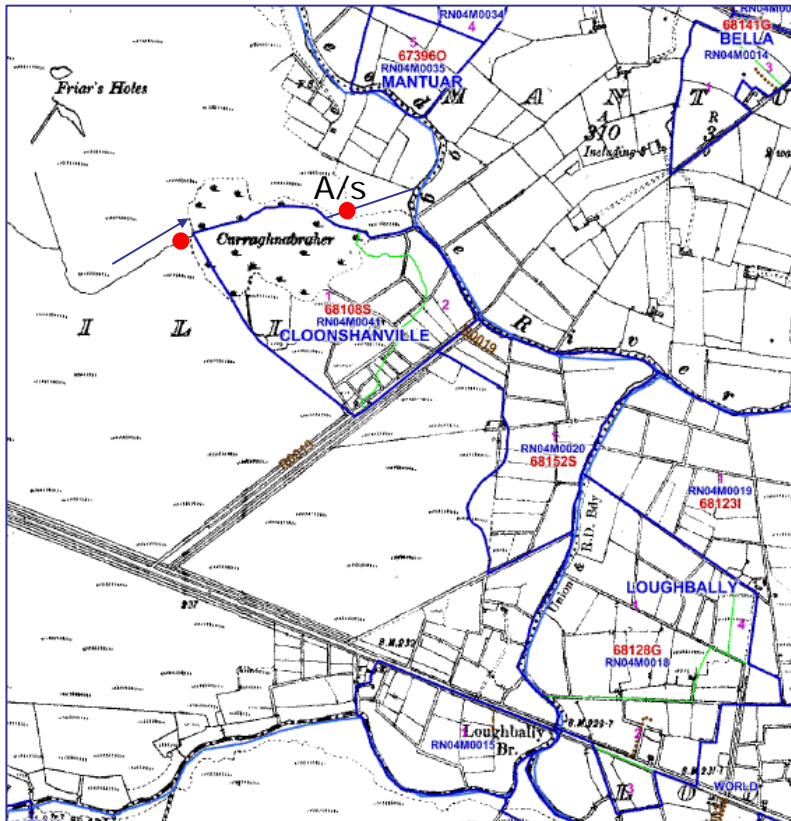
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# Sample Pts – Cloonshanvile Bog



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## Sampling Problems – Cloonshanvile Bog



- Autosampler damaged in flood – Sept.'06
- Repaired and reinstated –Dec.'06
- Damaged in 2nd flood - Mar.'08
- Autosampler currently under repair –May'08

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## Results – Cloonshanville Bog

Above site – Grab sampling (10/6/05 to 23/11/07)



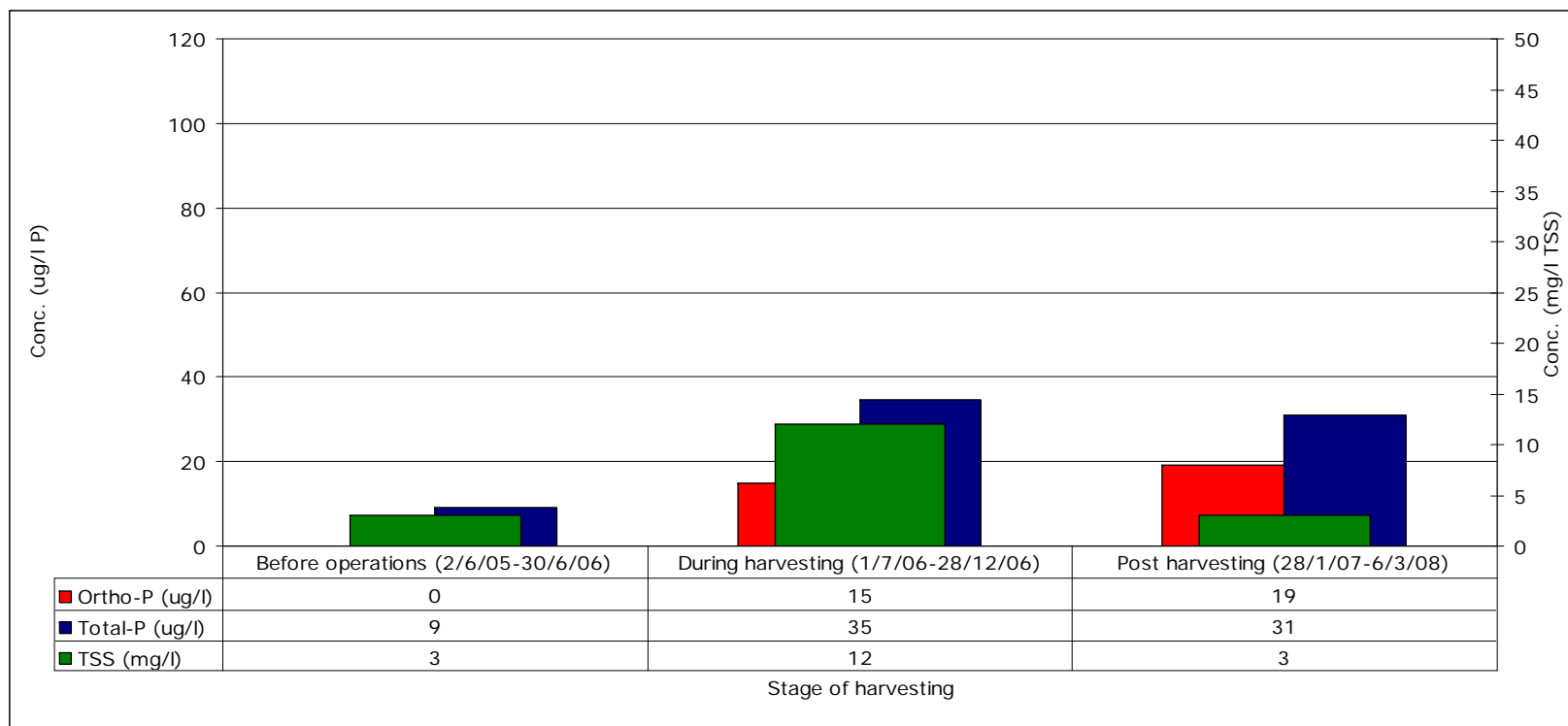
	TSS (mg/l) (50)*	Ortho-P (ug/l) (30)	Total-P (ug/l) (60)	N-NH3 (mg/l) (0.20)	N-NO3 (mg/l) (11.0)
Median	2	6	19	0.33	0.08
Max	121	168	220	1.61	0.92

\* Assumed critical threshold



# Results – Cloonshanville Bog

Median – OP, TP & TSS (A/s)



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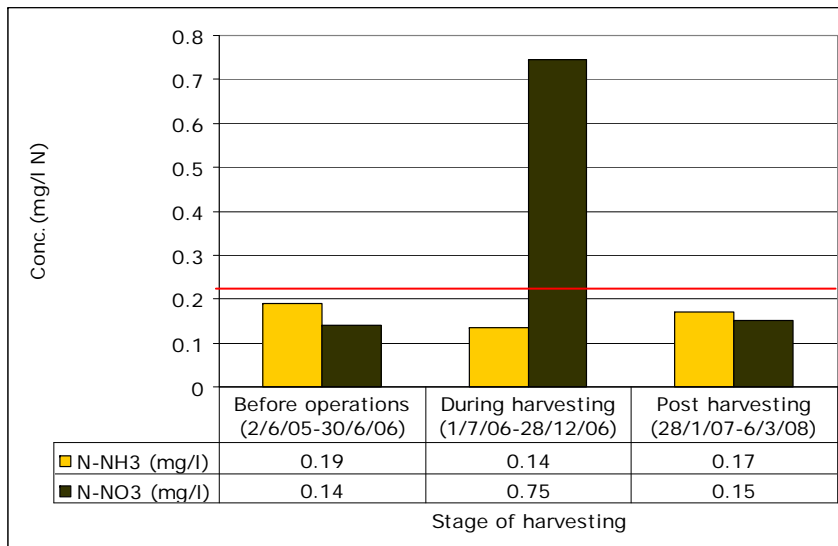




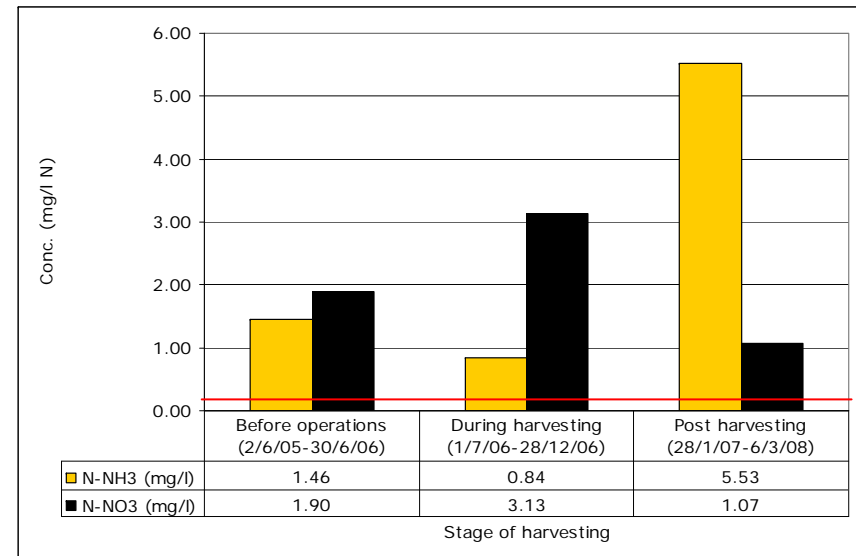
# Results – Cloonshanville Bog

Median – N-NO3 & N-NH3 (A/s)

Max – N-NO3 & N-NH3 (A/s)



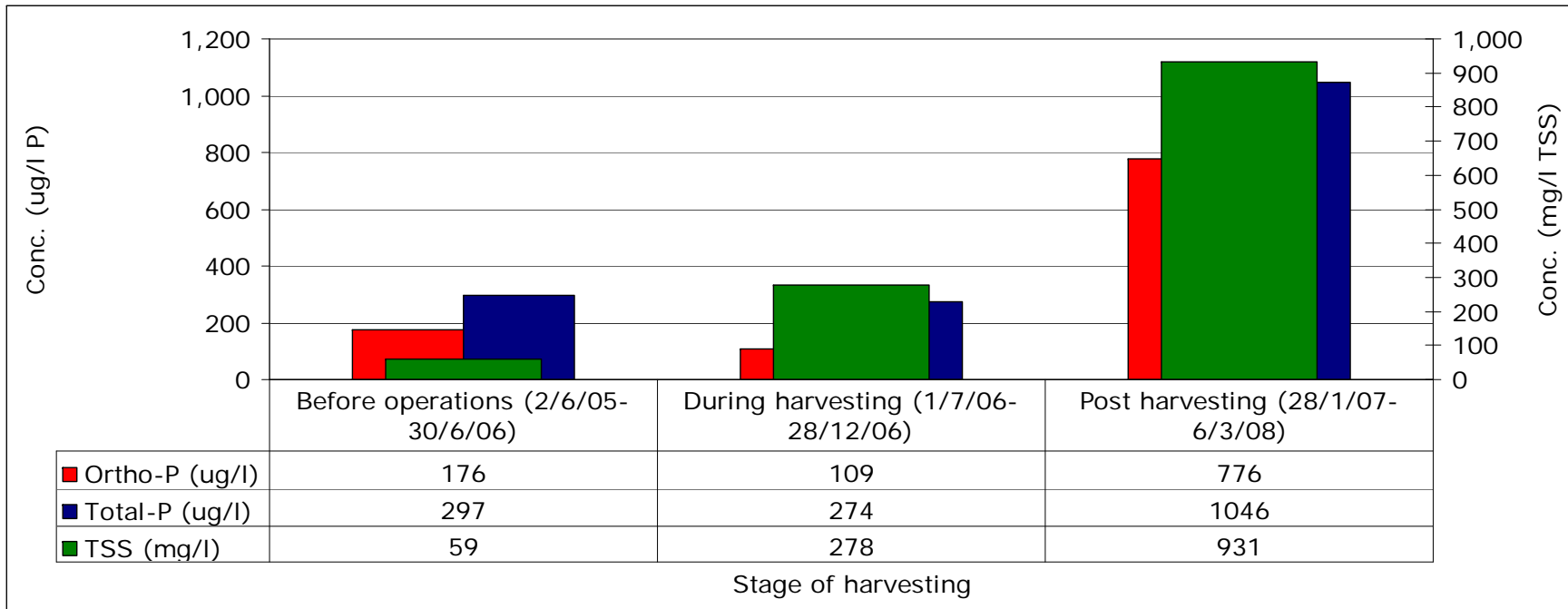
— Critical Threshold for N-NH3





# Results – Cloonshanville Bog

Maximum – OP, TP & TSS (A/s)





## Conclusions



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