

NEAP: WORKED EXAMPLE #3 (ANCILLARY CALCULATIONS)

In-lake Condition Module: Joe's Lake

This module takes the output from the Phosphorus Loading Module, and predicts what the mean annual in-lake concentration of Total P is likely to be. In this example Joe sees that the Predicted Value exactly matches his observed values - something unlikely to occur.

| | | |
|-------------------------------|--------------------|-----|
| Observed mean annual total P | mg m ⁻³ | 114 |
| Predicted mean annual total P | mg m ⁻³ | 114 |
| Predicted - Observed | mg m ⁻³ | 0 |

TSI Module: Joe's Lake

In this module Joe must enter values of Total Phosphorus and Chlorophyll-a, and NEAP provides a indication of the Trophic Condition in two formats:

| | | |
|---------------------|--------------------|-----|
| Total phosphorus | mg m ⁻³ | 114 |
| Chlorophyll-a | mg m ⁻³ | 26 |
| Secchi transparency | mg m ⁻³ | 2 |

| Carlsons Indices | | |
|----------------------|----|--------------|
| Total P | 71 | Hypertrophic |
| Chlorophyll-a | 67 | Hypertrophic |
| Secchi transparency | 50 | Eutrophic |
| OECD Boundary Method | | |
| Total P | | Hypertrophic |
| Chlorophyll-a | | Hypertrophic |
| Secchi transparency | | Eutrophic |

Chlorophyll-a Prediction Module

This module takes the output from the Phosphorus Loading Module and uses it to predict annual mean and maximum concentrations of chlorophylla. The module performs this calculation for both shallow and deep lakes, and both outputs are provided in this version of NEAP.

| Shallow waterbody | Chla, mg m ⁻³ | |
|-------------------|--------------------------|-----|
| | Mean | 60 |
| | Max | 254 |
| Deep waterbody | | |
| | Mean | 30 |
| | Max | 84 |