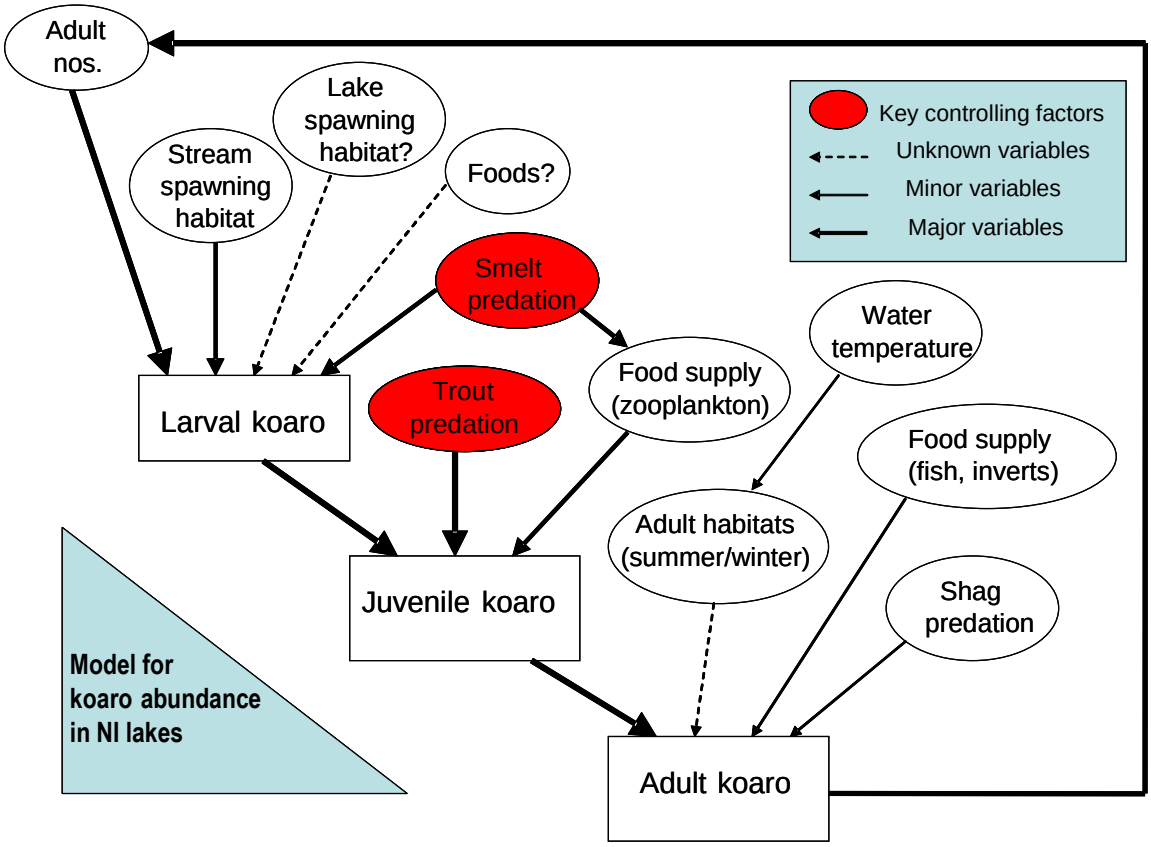
# Koaro Conceptual Model

Dave Rowe

The figure below describes the current understanding of factors influencing the distribution and abundance of koaro in the Te Arawa lakes. The model identifies key controlling factors (smelt predation and trout predation) which together contribute to the quality and quantity of koaro in the lakes. Other factors are also known to be important (white boxes). The arrows describe the relationships between factors and their relative importance. A description of each of these variables is listed in the table below. This model can be used to identify possible management priories, as well as test hypotheses and provide research ideas.

For a more detailed description of factors influencing koaro in the Te Arawa lakes refer to Rowe D; Kusabs I (2007) Taonga and mahinga kai species of the Te Arawa lakes - koaro. (https://www.niwascience.co.nz/maori/research/te_arawa_lakes/koaro)



| Variable name | Variable description |
|---|---|
| Adult nos | Number of adults |
| Stream spawning habitat | Available habitat for spawning in inlet streams |
| Lake spawning habitat? | Do koaro spawn in lakes and if so, what physical conditions are needed? |
| Foods? | What are the food requirements of larval koaro? |
| Smelt predation | Smelt prey on larval koaro and compete for food and space with juvenile koaro |
| Trout predation | Predation on juvenile koaro likely to have been a major contributor to the demise of koaro populations |
| Food supply (zooplankton) | Juvenile food supply generally not an issue, except where competition with smelt |
| Water temperature | May influence adult habitat preference |
| Food supply (fish, inverts) | Adult food supply is generally not an issue in lakes |
| Shag predation | May be a significant predator in lakes |
| Adult habitat | The habitats and season movements of adult koaro are poorly understood |