

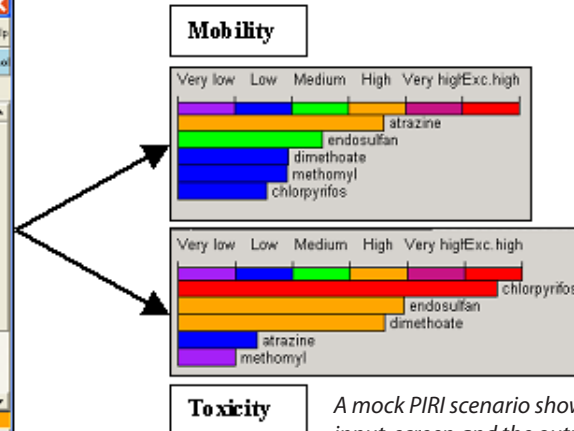
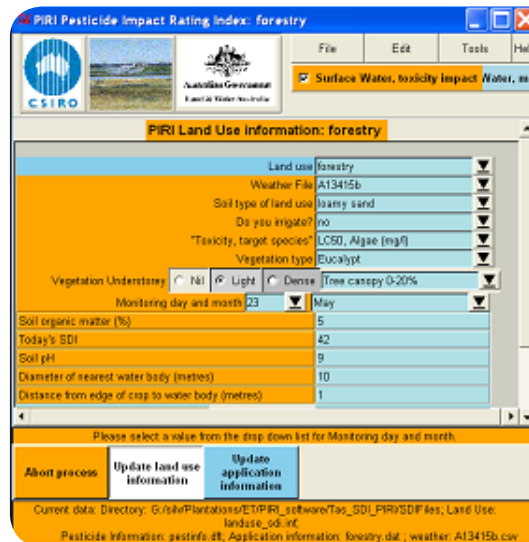
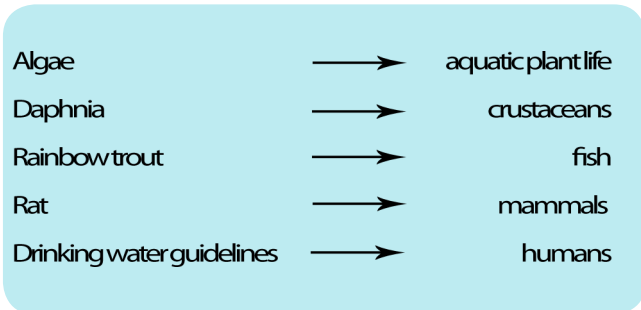
## A Pesticide Impact Rating Index for Tasmania

Erin Trainer

Erin.Trainer@forestrytas.com.au

Pesticides are used in plantation forestry to manage weeds (herbicides), damaging insects (insecticides) or fungi (fungicides). Forestry Tasmania is committed to minimising pesticide use consistent with good forest management. There is a risk associated with every pesticide operation that chemicals may be transported off-site, contaminate waterways and subsequently be toxic to aquatic or terrestrial organisms. PIRI (Pesticide Impact Rating Index) is a risk assessment tool, developed by CSIRO Land and Water, that gives a relative risk of pesticide mobility to waterways and toxicity to organisms, to assist planning and decision-making associated with pesticide operations.

PIRI can assess the toxicity to a user-selected organism (algae, daphnia, rainbow trout and rat) as well as comparison to and drinking water quality guidelines. Each organism is useful as a surrogate for assessing the risk to a whole class of organisms:



A mock PIRI scenario showing input screen and the output risks of mobility and toxicity

PIRI requires site-specific information (soil texture, slope, pH etc.), climatic information such as Soil Dryness Index (SDI), and operational information on the pesticides to be applied and their application rates. It then uses this information, in conjunction with an extensive pesticides database, to perform the risk assessment.

The Tasmanian River Catchment Water Quality Initiative (TRCWQI), an initiative funded by the Commonwealth, had as its primary goal the development and validation of PIRI for Tasmania (PIRI-Tas). The initiative was a collaborative research effort between UTas, DPIW, CSIRO and Forestry Tasmania. Forestry Tasmania's role was in validation and development: having sampled waterways following pesticide operations for over a decade, there was a large pool of Forestry Tasmania data for validating PIRI-Tas in

Tasmanian forest conditions. The appropriate site-specific, climatic and operational data was compiled, matched with water sample results, scrutinised, then subjected to an external audit before being used to validate PIRI-Tas. Previously, soil moisture conditions were not taken into account by PIRI when calculating risk, but this has also been incorporated into PIRI-Tas.

Forestry Tasmania has now commenced the integration of PIRI-Tas into operational decision-making processes. Risk assessment will be a mandatory part of planning pesticide operations within Forestry Tasmania. In the future, PIRI-Tas will provide detailed and valuable information to planners so that risks can be assessed, and reduced where necessary, during implementation and management of pesticide operations.