

Revegetation of the Pardoo mine: planning to execution to monitoring

Abstract

The Pardoo Direct Shipping Iron Ore Project (the Project), located in the Pilbara region of Western Australia, is owned by Atlas Iron Limited (Atlas). Mining commenced in October 2008 and ore reserves were depleted by October 2013. The Project consisted of 11 open pits, six waste rock dumps and mining infrastructure. Closure planning commenced in 2010, with closure works across most Project areas undertaken between 2013 and 2014.

Our presentation will describe the risks to revegetation and the investigations that Atlas undertook to mitigate these risks. The revegetation monitoring data will also be presented along with a comparison of revegetation performance against agreed closure criteria.

During the closure planning process, a comprehensive risk assessment was undertaken to identify all closure risks, with a poor revegetation outcome acknowledged as one of the key risks for the Project. The identified causes of this risk included insufficient or hostile growth medium, inappropriate or poor quality seed, grazing pressures, poor climatic conditions and weed occurrence. To mitigate these risks, and others, Atlas undertook a series of targeted closure investigations to ensure that potential knowledge gaps were filled, and appropriate control mechanisms were implemented.

Atlas has adopted the approach of using the best achievable rehabilitation as the benchmark against which to compare rehabilitation performance for perennial plant cover, species richness and weed cover. Considerable effort was invested in developing robust closure criteria to measure and demonstrate revegetation performance over time. These closure criteria were workshopped with, and reviewed by several internal and external stakeholders including regulators, industry peers, the local community and the pastoralist.

The closure investigations, closure criteria and stakeholder engagement informed the development of a revegetation plan and specific work instructions for contractors. Completed closure and revegetation works were then verified against specific work instructions.

Revegetation performance has now been assessed for five years. Vegetation parameters such as species richness and plant cover are tracking as expected and closure criteria have been met at a number of monitoring sites. Weeds are present in revegetation areas, but are generally not impacting native vegetation growth.

Revegetation success at the Project was attributed to the identification of key risks, investigations which closed knowledge gaps and stakeholder engagement early in the closure planning process.