# Article information:

Detecting the dynamics of vegetation disturbance and recovery in surface mining area via Landsat imagery and LandTrendr algorithm - ScienceDirect  
<https://www-sciencedirect-com.proxy.lib.uwaterloo.ca/science/article/pii/S0959652618300611>

# Article summary:

1. The LandTrendr algorithm and Landsat imagery can be used to detect and map the dynamics of vegetation disturbance and recovery in surface mining areas.

2. The cumulative Disturbance to Recovery ratio can be used as an indicator of environmental sustainability in the mining industry.

3. Remote sensing techniques provide a practical solution for monitoring mining disturbance, and time-series analysis can be used for long-term monitoring and data reconstruction.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article "Detecting the dynamics of vegetation disturbance and recovery in surface mining area via Landsat imagery and LandTrendr algorithm" provides an overview of the use of remote sensing techniques to monitor vegetation cover dynamics in mining areas. The article highlights the importance of monitoring vegetation cover changes for environmental sustainability and mining regulation. The authors propose the use of the LandTrendr algorithm and Landsat imagery to detect vegetation change and characterize historical dynamics.

The article presents a detailed analysis of the Curragh coal mine site in Australia as an illustrative application. The authors report that more than 2982 ha out of 4573 ha of disturbed land in entire Curragh had been covered by vegetation, while 95% of the oldest part of the operation (Central Curragh) has been seeded and rehabilitated. The average value of cumulative Disturbance to Recovery ratio for entire Curragh mine site was about 59%. This suggests that the Curragh mine has been complying with mining legislation by undertaking progressive rehabilitation and vegetation establishment efforts.

The article is well-written, informative, and provides valuable insights into using remote sensing techniques for monitoring vegetation cover dynamics in mining areas. However, there are some potential biases and limitations that need to be considered.

Firstly, the article focuses on one specific case study, which limits its generalizability to other mining sites or regions. Secondly, while the authors highlight the importance of monitoring vegetation cover changes for environmental sustainability, they do not discuss potential risks associated with mining activities such as water pollution or soil degradation. Thirdly, while they propose using LandTrendr algorithm and Landsat imagery as a practical solution for monitoring mining disturbance, they do not explore potential limitations or challenges associated with these techniques.

Overall, this article provides valuable insights into using remote sensing techniques for monitoring vegetation cover dynamics in mining areas. However, readers should consider potential biases and limitations when interpreting its findings.

# Topics for further research:

* Risks associated with mining activities such as water pollution or soil degradation
* Limitations and challenges associated with remote sensing techniques for monitoring mining disturbance
* Best practices for progressive rehabilitation and vegetation establishment efforts in mining areas
* Environmental regulations and policies related to mining activities
* Impacts of mining on local ecosystems and biodiversity
* Case studies of successful and unsuccessful rehabilitation efforts in mining areas

# Report location:

<https://www.fullpicture.app/item/829a75fdfec8842590d0c944dde1cc63>