

REHABILITATION

Industry Principles & Commitments



Upper Hunter
Mining Dialogue

2020 Results and Analysis

Since 2012, the Upper Hunter Mining Dialogue has been collecting and reporting on annual rehabilitation data from Upper Hunter mining operations, providing information to the community and improving transparency regarding the amount of progressive rehabilitation across the region. The mining industry has agreed to a set of common rehabilitation principles and commitments to drive improvements to rehabilitation. More information regarding these principles and commitments can be found on the following page.

The table below provides a yearly overview of the newly rehabilitated land and newly disturbed land during each calendar year. As cumulative figures are presented for all operations in the Upper Hunter rather than at a site-specific level, the total figures in any given year may be impacted by the establishment of a new operation or the expansion of an existing site. Sites commencing operations generally disturb land at a higher rate than sites which are later in their lifecycle, where rehabilitation is more likely to increase nearer to closure. However, all mines are required to progressively rehabilitate disturbed land throughout the duration of operations.

It is also important to note that there is only a limited amount of land that is available to be rehabilitated during the active operation of a mine site. Much of the land reported as disturbed and awaiting rehabilitation, will not actually be available for rehabilitation during the reporting period as it is likely this is being actively used in some capacity by mining operations during the reporting period.

In 2020, a further 848 hectares were rehabilitated, taking the total amount of land under rehabilitation to 14,282 hectares or just under 38 percent of all land disturbed by mining in the Upper Hunter. During the same period, 1,380 hectares of disturbance was recorded. The annual rehabilitation to disturbance ratio of 0.61 means for every hectare disturbed, 0.61 hectare of rehabilitation was undertaken.

Rehabilitation	2012	2013	2014	2015	2016	2017 [8]	2018	2019	2020 [12]
A: Total land area disturbed and not yet rehabilitated at the beginning of the reporting period (hectares) [4]	17,830	18,098	18,479	20,171	21,180	21,472	21,816	22,276	22,726
B: Total amount of land newly disturbed within the reporting period (hectares)	1,163	1,148	1,057	1,424 [6]	1,270	1,008	1,666	979	1,380
C: Total amount of land newly rehabilitated [1] within the reporting period (hectares)	895	962	801	856	907	763	1,071	869	848
D: Total land area disturbed and not yet rehabilitated at the end of the reporting period (D=A+B-C) (hectares)	18,098	18,283	18,736	21,008	21,304	21,770	22,411	22,518 [10]	23,259
E: Total area of rehabilitation at all operations at the end of the reporting period (hectares) [2]	8,791	9,145	10,023	10,783	11,653	12,315	12,714	13,470	14,242 [11]
F: Annual rehabilitation to disturbance ratio (C:B) [3]	0.77	0.84	0.76	0.6	0.71	0.75 [7]	0.64	0.89	0.61
G: Overall proportion of disturbed land rehabilitated	32.7%	33.3%	34.9%	33.9%	35.4%	36.1%	36.2%	37.4%	37.9%
Other Managed Land [5]	2012	2013	2014	2015	2016	2017	2018	2019	2020
Estimate of total land held as biodiversity offsets (hectares)	10,973	13,164	22,607	22,773	25,466	41,768	41,139	41,803	43,689
Estimate of the total area of land managed for agricultural use (e.g. grazing, cropping, viticulture) (hectares)	57,533	60,174	44,252	44,632	40,146	59,320	59,212	59,209	59,160
Estimate of total buffer land (hectares) [9]	N/A	N/A	N/A	N/A	N/A	N/A	47,063	47,179	48,175

Note: Please see over the page for Contextual Notes that provide further information to the figures in the above table.

To find out more, visit miningdialogue.com.au

Industry rehabilitation data for 2020 was kindly provided for this project by Glencore, Yancoal, The Bloomfield Group, BHP, Muswellbrook Coal Company, Peabody Energy, Mount Pleasant Operation, Bengalla Mining Company and Malabar Coal.

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Contextual Notes to the Rehabilitation Progress Table	
[1]	Rehabilitation is defined by the Mining Act 1992 as the treatment or management of disturbed land or water for the purpose of establishing a safe and stable environment.
[2]	Row E2013 may not equal Row C2013 + Row E2012 as areas that have been previously rehabilitated, then re-disturbed are excluded from the total area of rehabilitation of all operations at the end of the reporting period.
[3]	The rehabilitation to disturbance ratio indicates how many hectares of rehabilitation are undertaken for each hectare of land disturbed during the year. A ratio of 1 would indicate that the area of rehabilitation and disturbance in that year are the same.
[4]	Row A(Year) does not necessarily equal Row D (Year -1) because some companies have reconciled their figures and corrected them over time.
[5]	There have been substantial changes in the amount of 'Other Land Managed' between 2013 and 2014 because: (i) significant increases in additional offset areas have been established, and (ii) because some of the land previously identified as being used for agriculture is now being used for mining purposes or biodiversity offsets.
[6]	The increase in land newly disturbed in 2015 is predominantly due to the establishment of the Bulga Optimisation project.
[7]	The 2017 data included the first year of rehabilitation and disturbance information from Mount Pleasant Operation, which commenced operation during the calendar year. Typically, during the initial stages of a mining operation a larger amount of disturbance is conducted to establish the mine and associated infrastructure. As the mine develops, progressive rehabilitation is conducted and much of the initial disturbance is rehabilitated. While the rehabilitation to disturbance ratio was 0.75 in 2017, if the new operation's data is not included, this figure becomes positive at 1.03. This demonstrates that the industry conducted more rehabilitation than disturbance in 2017, putting aside the development of the new operation. Total figures from the 2017 results have also been adjusted following the discovery of a reporting error from one site that caused an over-reporting of newly disturbed land, which was in fact a cumulative total from previous years.
[8]	Total figures from the 2017 results have been adjusted following the discovery of a reporting error from one site that incorrectly reported cumulative disturbance as newly disturbed land, which resulted in an over-reporting of the actual amount of disturbance across Upper Hunter operations.
[9]	The Dialogue introduced a new reporting category as part of the 2018 results, where the total amount of buffer land owned by the mining companies operating in the Upper Hunter is now being reported. The total amount is also broken down into various categories.
[10]	The reported D and E figures for 2019 do not align with previously reported data. This is due to a site reporting that 170 ha of previously reported rehabilitation is being reclassified as a result of an Independent Rehabilitation Review conducted in 2019. Approximately 40 ha of this amount was reported as rehab disturbance in 2019, however a remaining discrepancy of 130 ha was removed from the rehabilitation reporting due to the fact that these were seeded to cover crops, but not the final seed mixes. These areas will be seeded to the final seed mixes in 2020 and 2021 and will feed back into the rehabilitation reporting figures in the coming years.
[11]	The 'E' figure that identifies the total area of rehabilitation completed at the end of the reporting period is usually derived from adding the existing aggregate total to the new rehabilitation undertaken during the reporting year. However, the 2020 'E' figure is impacted by the disturbance of previously rehabilitated areas across two operations for dump space, resulting in a lower than expected aggregate rehabilitation total in 2020.
[12]	The United Wambo Joint Venture (UWJV) commenced on 1 December 2020. Data reported by Glencore and Peabody in 2020 now reflects the new arrangements (i.e. Peabody and Glencore have reported on their respective sections of responsibility of UWJV). Given the transition in reporting arrangements, there may be minor discrepancies in the data reported, which may have an impact on the total results reported, such as the difference between the 'A' figure for 2020 (total land area disturbed and not yet rehabilitated at the beginning of 2020) and the 'D' figure for 2019, which are generally similar figures. Differences in figures between 2019 and 2020 data is also partially due to several sites amending their figures between the close of the previous year's reporting and the start of the new calendar year.

Upper Hunter Mining Dialogue Temporary and Final Rehabilitation Principles and Commitments

All Dialogue member companies have agreed to a set of common principles and commitments, developed by the Joint Environment Working Group, to encourage improvements in the speed of rehabilitation and to provide aggregate data to the community about total land disturbed and rehabilitated. The Principles are as follows.

- 1. Include rehabilitation planning in mine planning** - Planning for rehabilitation should be integrated into the mine planning process and should include allocating adequate and dedicated resources to achieve the planned rehabilitation outcomes.
- 2. Undertake progressive rehabilitation** - Companies should undertake rehabilitation progressively, with the objective of ensuring that rehabilitation is as close as possible to active mining.
- 3. Minimise time that disturbed areas are left without vegetation** - Companies should actively seek to minimise the time that land is left without cover during mining. This should include:
 - Taking steps to ensure that rehabilitation is commenced within 12 months of land becoming available for rehabilitation.
 - Utilising methods of temporary rehabilitation*, such as aerial seeding of overburden and other disturbed areas where permanent rehabilitation has not commenced.
- 4. Prioritise areas of rehabilitation and temporary cover to reduce impacts** - Companies should prioritise rehabilitation and temporary cover in those areas where leaving land exposed will have the most impact. The following areas should be considered to have priority:
 - Areas that have the greatest impact on visual amenity, such as areas that face townships, residences, or the highway
 - Areas that have the potential to generate dust leaving the site.
 - Areas that are important for biodiversity, such as rehabilitation adjoining or providing connectivity to remnant vegetation.
- 5. Meet target for rehabilitation progress identified in the Mining Operations Plan** - Each company should meet the annual target for rehabilitation quantity (area) set in the Mining Operations Plans for each of its mines.
- 6. Set quality targets for rehabilitation in the Mining Operations Plan and implement a monitoring program to measure performance** - Each company should include quality targets for the various types of rehabilitation in the Mining Operations Plan for each of its mines. A monitoring program to measure the performance of rehabilitation areas against the quality targets should be implemented at each of its mines.

* Temporary rehabilitation describes reshaping, revegetation and other rehabilitation techniques that are used for purposes other than final rehabilitation. This includes such initiatives as seeding overburden emplacement areas, which are only temporary, to reduce erosion.

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