Managing Mining Legacies

A newsletter for stakeholders interested in addressing abandoned/legacy mine impacts and embracing opportunities for beneficial post-mining land use

Welcome

Welcome to the Centre for Mined Land Rehabilitation (CMLR) Managing Mining Legacies newsletter.

CMLR celebrated 20 years this month! The anniversary event welcomed 150 guests from the cohort of current and past CMLR staff and students, SMI, industry and government. Presentations highlighted CMLR’s history and current research innovation. Projects such as NextMine™ designer tailings to produce benign wastes facilitating rehabilitation with greatly reduced post-closure liabilities. This project is led by Dr Mansour Edraki.

Thank you to all of you who responded to the survey and to the majority of Newsletter readers who responded with medium/high interest in the newsletter. Suggestions for future articles included:

- North-eastern Tasmania erosion stabilisation,
- statistics on the size of the abandoned mine problem (more technical detail),
- some fast facts for those not immersed in the mining legacy area,
- case studies from different states and overseas,
- successful and unsuccessful closure case studies,
- information from abandoned mine managers on lessons learned - technical, strategic, political, social and economic.

Anyone wishing to submit articles please contact Corinne Unger.

Thanks must go to volunteer Roslyn Howse for assistance with compilation the of this newsletter.

As this will be our last newsletter for 2013 we send our Seasons Greetings to you and the very best for the New Year.

Content:

- MML survey
- Meet Bill Ellis
- AusIMM abandoned mine policy
- Environmental values downstream of Rum Jungle
- Wild law conference 2013
- Mining in a sustainable world conference, Armidale
- Japan’s abandoned ghost island of Hashima
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Managing Mining Legacies survey

The survey was designed to gauge your views on

1) a national hub for abandoned mines,
2) the Managing Mining Legacies newsletter, and
3) a second forum on Managing Mining Legacies proposed for July 2014 in Brisbane.

It contains ten questions and will take approximately five minutes to complete and it is not too late. To take the survey, click the following link: http://www.surveymonkey.com/s/MYHP9ZR

Responses to the survey thus far

A short summary of the survey (from 41 respondents) indicated 95% of respondents felt there was merit in a multi-stakeholder advisory group on abandoned mines. 100% of respondents indicated that successful implementation of the ‘Strategic Framework for managing abandoned mines’ required engagement of stakeholders in industry, government and civil society.

53% were uncertain about the need for COAG’s Standing Council on Energy and Resources to prioritise implementation of the strategic framework before jurisdictions would support a national hub; 24% felt it was necessary and 21% felt it wasn’t necessary and one respondent felt it was already being supported.

46% indicated a preference for a Managing Mining Legacies forum on 21-22 July to follow on from the Life-of-Mine 2014 AusIMM/CMLR conference with 38% indicated they ‘maybe’ interested and nobody said they were not interested at all.

CMLR is willing to host such a forum if there is sufficient interest and sponsorship from industry, government and other stakeholders. We will review this opportunity and make a decision by early February 2014. Thank you Corinne Unger.

Meet Dr Bill Ellis

Bill is an ecologist with a long history of research involving CMLR, dating back to its inception and koala research at Blair Athol Coal Mine in central Queensland.

Along the way, Bill has worked on research projects involving all types of fauna from lizards and frogs in central Queensland to koalas on North Stradbroke Island.

Support from mining companies has allowed Bill to develop a comprehensive catalogue of research projects, and the questions environmental officers have asked over the years have formed the basis for many detailed studies of the biology of koalas in particular. As a result, he has produced new and informative findings in areas such as:
The breeding biology of koalas – at Blair Athol a long term paternity study using genetic markers provided the first ever analysis of the breeding system of this species. Bills research, published in *Wildlife Research* revealed that the so-called “dominant” male was not always so “dominant” when it came to breeding.

Tree use by koalas – in a landmark 2002 study (also published in *Wildlife Research*) around the Clermont mine site, Bill’s team found that koalas were as likely to be found in trees they did not eat as they were in those they preferred. He expanded on this work and produced the definitive 2010 *Australian Zoologist* paper that showed why koalas do this – they sit in the cool trees during the day and head off to feed in the more exposed eucalypts at night. Land managers across the range of the koala are now coming to terms with tree protection strategies that targeted only food trees, but fortunately the mine-site rehabilitation teams working with the CMLR koala team have been catering to the full suite of trees koalas require for many years.

The challenge now is to see the research that has informed planning for post-mining landforms drive the development of sustainable ecosystems on these (and other) sites. Bill has a particular affinity with Blair Athol mine, having tracked his first koalas there in the 1980s and worked with a succession of Environmental Officers under a range of management structures ever since. While Bill has gone from a PhD student to a successful academic over the years, and in the process passed the baton for the koala research at Blair Athol to younger and more enthusiastic researchers, he remains involved on the ground and so, like many, is worried that an opportunity is being missed.

At various sites, koala habitat has grown in post mining landscapes, and Bill documented the return of koalas to the mineral sands mine site on North Stradbroke Island in a 2008 publication (also in *Wildlife Research*) that showed how effective targeted mine site rehabilitation could be for specific species. However, at other sites the future looks less certain, with the profits gone and the costs of rehabilitation all that remains, companies may be less motivated to meet their environmental obligations.

What we do know is that across central Queensland the impacts of mining operations on koala (and other fauna) habitat is significant, but the potential to invest in the future of this habitat, both through the creation of post-mining landforms and targeted protection through developing other sites, is massive. To date, no land in central Queensland has been returned as viable habitat after mining, yet the presumption that this will occur underpins the environmental conditions of each new mine approved. Bill’s research has shown that it is possible to create koala habitat after mining has ceased, so perhaps companies should invest in the future while it is still the future, using the profits of today: The promises of mining companies would not have to endure the test of time, they could be put in place today.

**The Minerals Institute (AusIMM) abandoned mine policy**

Following the publication by the Australian government of the Strategic framework for managing abandoned mines in the minerals industry (MCMRP/MCA, 2010) the Minerals Institute’s (AusIMM) Sustainability Committee, (now the Community and Environment Society), developed an abandoned mine discussion paper and policy,
The policy statement and accompanying Annex document are available online.

Corrine Unger

Environmental Values Downstream of Rum Jungle

The first remediation of the Rum Jungle former mine was performed in 1977 with further remediation in 1983-88 and 1990-91. As mentioned in our last newsletter further remediation planning is underway and the Australian Government has allocated $14.5 million. Reports generated as part of this current remediation are publicly available and enable us all to learn about the planning processes involved. The following reports provide an example of the application of ANZECC/ARMCANZ (2000) water quality guidelines to the development of downstream water values at the Rum Jungle former mine: Hydrobiology Environmental Values Downstream of the Former Rum Jungle Mine site - Phase 1 & Phase 2

Roslyn Howse

Wild Law Conference 2013, Brisbane

‘Living within our ecological limits: law and governance to the Earth Community’ was held in September and organised by AELA (Australian Earth Laws Alliance).

Corinne Unger chaired the session on mining and Coal Seam Gas. The topics were diverse with Nati Greene from the Fundacion Pachamama (Ecuador) sharing her insights on the revision of their Ecuadorian Constitution to include ‘Rights of Nature’ or Pachamama Article 71 of Seventh Chapter.

Roslyn Howse

Mining in a Sustainable World Conference, Armidale

The Sustainable Minerals Institute’s Will Rifkin (CCSG), Corinne Unger (CMLR), Carol Bond (CSRM) and Isabel Buitrago-Franco (CSRM) presented at the Conference ‘Mining in a Sustainable World: Environmental, Social, and Political Economic Issues’. The Conference was hosted by the faculty of Peace Studies at the University of New England and aimed to explore the relationship between mining and sustainability.

Roslyn Howse

Japan’s abandoned ghost island of Hashima

To digress for a moment from the usual facts, figures and web links, the video accessed via the following link is haunting. We have plenty of ghost towns in Australia and some as remote as that of the island of Hashima; nothing quite as incredible as this.

According to the website:

For nearly a century (from 1887 to 1974), the island was a bustling coal mining facility that housed thousands of workers. Mitsubishi bought it in 1890 and built Japan’s first large concrete building, at nine stories high. With a population of 5259 people in 1959, the 6.3ha island was the most densely populated place per square metre in the world. When the busy mine closed, Hashima Island fell into ruins.

Some may recognise the island from scenes in the James Bond film ‘Skyfall’

Roslyn Howse

In the news

- The Minamata convention is a global treaty which was signed by 92 countries including Australia on 10 October 2013. The objective of this Convention is to protect the human health and the environment from anthropogenic emissions and releases of mercury and mercury compounds. This protocol has relevance to the clean-up of contaminated mine sites and downstream environments where mercury was used in historic gold extraction.

- AMD from past coal mining in the Hunter Valley captured the headlines as ‘Creek poisoned by acid for old mines’. Articles by Donna Page in the Newcastle paper ‘The Herald’ and the ‘The Sydney Morning Herald’ describe the ongoing frustration by Col Maybury of the Kurri Kurri Landcare group
regarding the lack of effective remediation from the Neath Colliery resulting in AMD contaminated water discharging off site.

- Interviewed by Lisa Herbert ABC rural at the 'Mining in a Sustainable World: Environmental, Social, and Political Economic Issues' Corinne explained the need for the Australian government to lead on the implementation of the national Strategic Framework for abandoned mines. She also referred to the NSW Auditor General’s report which identified that derelict mines potentially pose the State's largest category of contamination liability.

- Mongolia’s Uyanga valley, people from all over the country come to set up their yurts and fossick for gold. Because they wear black overalls and are 'invisible workers', they are nicknamed ninjas. The big mining company left a decade ago, but the ninjas pick over what’s left and just manage to make a living from the gold they find. But their growing population is becoming a burden on the local townsfolk.

- A parliamentary inquiry makes recommendation that the Queensland Government integrates all tenure data sets and maps to address surface and subsurface tenure issues as a priority. It also highlights the current difficulties current and prospective landowners have in accessing accurate spatial data on abandoned mines and capped shafts. See Section 7.5 for more information.

- Legacy mine collapse in WA highlights challenges of abandoned mines. The WA mines department stated that this mine is the responsibility of the mine owner as the Lake Johnston Mine is not closed or abandoned.