

# Scientists lay path to global restoration

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(Phys.org) —Scientists have proposed a practical way to tackle the urgent need to restore huge areas of badly-degraded forest and grassland worldwide, based on Australian environmental experience.

In the latest issue of the journal *Decision Point*, Professor Richard Hobbs of the National Environmental Research Program's [Environmental Decisions](#) Hub and University of Western Australia (UWA), says that large-scale [environmental restoration](#) – like that set as a goal by the recent Earth Summit – often faces high costs and major setbacks.

With up to 80 per cent of the Earth's land surface area now transformed by human activity in some way, governments and scientists agree it is time to act to restore key environments.

"The Rio+20 Summit set a worldwide target of restoring 150 million hectares of badly-degraded landscape – that's an area two thirds the size of the State of Victoria. However most environmental restoration tends to occur in small patches, not across huge areas like this," he explains.

Not only do costs grow with the area to be restored, but complex factors like water flows and impact on industries and communities also need to be factored in.

"Australians have learned from our experience in combatting salinity that very often, when tackling big restoration projects, there is a tendency to try to do too much with too few resources. As a result, the \$1.7 billion National Action Plan for Salinity and Water Quality

achieved little it set out to. Repeated national audits have found similar things for other large-scale environmental projects

"We have taken the lessons from that experience and applied them to the challenge of restoring the huge areas of the Earth which are now in urgent need of recovery, such as [tropical rainforests](#) and savannah grasslands."

Prof. Hobbs says that cheap and quick solutions, like replanting damaged landscapes with monocultures of [pine trees](#) or eucalypts often fails to achieve the many benefits sought, such as [ecosystem services](#) or preserving the full range of native wildlife.

"Many initiatives start with good intentions but fail to achieve effective restoration goals. For instance, China's Great Green Wall may not be the most effective way to achieve multiple outcomes: this 4500 kilometre band of fast-growing non-native trees has been found to have a number of unwanted side-effects – like losing a billion poplar trees to disease in 2000.

"The lesson is that when you do things at a big scale, things going wrong can have big impacts."

However, early recognition of similar problems with the large-scale restoration of the WA jarrah forest led to environmental research which has largely managed to put them right.

Built on the Australian experience, Hobbs and colleagues have proposed a series of 'rules' to guide the global roll-out of large scale eco-restoration. These include:

1. Identify focal regions with the most urgent restoration demands (eg. drylands, which will suffer greatly from climate change)

2. Identify knowledge gaps and prioritise research needs
3. Create restoration knowledge hubs
4. Publicise the political viability of restoration by showing the economic and social benefits that restoration will provide.

However, Prof. Hobbs cautions, "[restoration](#) ecology is not yet at the stage of being able to provide instant, biodiverse ecosystems. This means we need to be extra careful before embarking on tradeoffs, like clearing one area for development on the basis that we may be able to copy the same ecosystem somewhere else and still keep all its species intact.

"This also means that governments and society would do well to recognise that preventing environmental loss and harm is still a far better and most cost-effective option than trying to restore landscapes after the damage has already been done."

Provided by NERP Environmental Decisions Hub

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