Nature's numbers

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Our economy may fall over, but it's not just about the financial meltdown. Nature is seizing up, and it's costing big bucks. Putting a dollar value on nature might help, but how much is a bacterium in a lake really worth? Reporter: Di Martin

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Di Martin: Hello, Di Martin here with this week's Background Briefing, and a program about crunching some unusual sets of numbers to keep us healthy and prosperous.

Now this is not about the international financial meltdown, but it does go to the core of our economic system. A system that's been built on exploiting natural assets.

Wentworth Group of Scientists director, Peter Cosier, says we have to change the way we value nature to keep our economy on track.

Peter Cosier: We created wealth in the beginning of the Industrial Revolution by accelerating the destruction of nature. We created wealth by clearing land, by taking water out of rivers and growing crops. The big question for the 21st century is, is that the pathway to future wealth? Or are we going over the limits to which nature can provide those resources, and eventually causing a decline in wealth? The evidence is unambiguous. It will now lead to an eventual decline in our economic wellbeing. So we have to change the economic system. Can we do it?

Di Martin: The answer to that question isn't as pessimistic as you might think.

Australia is already beginning the change, most dramatically in Victoria.

It has a system that's putting dollar values on biodiversity, the full package of Australia's plants, insects and animals. It's a

system that's forcing land developers to pay for clearing bits of native bush.

Conservationist Mike Gooey is a broker in this fledgling market.

Mike Gooey: Very clearly, the developers themselves, whilst they're struggling with it, and certainly there's a lot of political wrangling going on in the background, I'm sure that where developers are saying to government, 'Look, just get rid of these stupid laws because you're making it impossible for us to do our job, and making it ridiculously expensive', but it is, it's actually people having to pay the real cost of their development, whereby I am destroying the biodiversity, so therefore I'm going to have to pay for it.

Di Martin: And endangered bits of biodiversity aren't cheap.

Mike Gooey: We've had people who have purchased a habitat hectare of grasslands for almost a million dollars.

Di Martin: Australia is pricing things we've never tried to price before. We've heard about pricing carbon. But what about ecosystems, and even biodiversity itself?

Biodiversity is the way all bugs, plants and animals coexist. It keeps nature healthy, which keeps people alive. Clean air to breathe, clean water to drink, healthy soil to grow food.

But with too much carbon in the air, too many water licences issued on the Murray-Darling, too much bush bulldozed, Australia's biodiversity is failing.

David Lindenmayer is a world-renowned ecologist.

David Lindenmayer: The best way to summarise what's happening in Australia's biodiversity, is to consider it as a train wreck, and nothing else but a train wreck. Australia has the highest per capita number of threatened species of anywhere on the planet, and Australia has overall the most number of threatened species of anywhere in the world. Now biodiversity loss is a symptom of poor environmental management. So by any yardstick imaginable, Australia leads the world in poor environmental management.

Di Martin: So we're the worst in the world?

David Lindenmayer: We are, absolutely, completely and utterly the worst in the world in terms of poor environmental management, and as a consequence of that, biodiversity loss.

Di Martin: It might sound a bit harsh, considering the environmental rampage taking place around the world. But we are the worst because we're losing so much, so fast. Australia's harsh, dry conditions have created enormous numbers of species. All the plants and creatures have had to carve out little niches in which to survive. But the biodiversity that keeps the water and the air clean is delicately balanced. Even small changes have big impacts.

David Lindenmayer.

David Lindenmayer: We need to care about these things because if we have an atrocious record on poor environmental management, that will undermine the capacity of Australia's landscapes to produce wheat, to produce wool, to produce all the key things that give us the quality of life that we presently enjoy.

Di Martin: So essentially we have run down, over a long period of time, the kind of natural assets that have underpinned our economic prosperity?

David Lindenmayer: Absolutely. Everybody thinks they live in an economy. We actually live in an environment that supports an economy.

Di Martin: Think of 30 years of abuse and over-use of the Murray-Darling Basin. Communities are now faced with not enough drinking water, or water to grow food for the rest of the country. Taxpayers are spending billions to buy back licences and fix up degraded catchment areas.

The CSIRO is one of the organisations trying to highlight the growing economic impact of running down what's left of Australia's natural assets.

It's recently finished a major project on what's known as ecosystem services. Here's Wendy Proctor.

Wendy Proctor: Well quite simply an ecosystem service is something that is provided by nature to improve humans' lives.

Di Martin: Wendy Proctor is an ecological economist based at the historic Gungahlin homestead in Canberra's north. It's home to the CSIRO's Sustainable Ecosystems Division.

Outside, Wendy Proctor points out an example of an ecosystem service and, quite unexpectedly, illustrated the threats to it as well.

Wendy Proctor: We have a huge tree over here which is, even just by itself, providing a huge amount of ecosystem services in

terms of the root system, which is stopping the soil from washing away and eroding. We have the leaves, they're sequestering, or absorbing the carbon dioxide emissions. We have a big highway just near here, so that's obviously taking that in and making the air clean. And the other thing is, I mean in some of the local creeks around here, if you didn't have vegetation beside them, then ...oh, there's a fox running over there.

Di Martin: Is that why you were getting distracted? That's not very good for a sustainable ecosystem is it?

Wendy Proctor: Especially during the day. My goodness, I've never seen one at this time of the day. Sorry.

Di Martin: Increasing numbers of feral animals like foxes, encroaching weeds, massive over-clearing, these are the sorts of things that are preventing Australia's ecosystems from doing their job.

So the CSIRO launched a major project to help local communities better understand the value of their landscapes.

Wendy Proctor spent time in Central Victoria around the regional centre of Shepparton, and there witnessed how tourism is loving the local water catchment to death.

Wendy Proctor: The impact of things like 4-wheel drives on the landscape and the native vegetation, people going out camping, cutting down trees for wood for fires, that sort of thing; even just people walking around, there were a lot of people down there who were still hunting. So we wanted to get some idea of the actual value at least to the tourism industry of those ecosystem services.

Di Martin: Like clean water and amenity and so forth?

Wendy Proctor: Absolutely. And what sorts of practices could be put in place to save some of those services. In the end we actually come up with a solution; having certain areas at certain times of the year cut off from tourism, and this may depend on breeding seasons, that sort of thing. There were to be restrictions on, for example, 4-wheel drives and trail bikes in certain areas. The most important thing though that came out of it, was that people started to realise that if they didn't protect those ecosystem services, eventually their tourism industry would be dead.

Di Martin: Keeping the world's climate on an even keel is the most talked about ecosystem service these days.

We're now effectively valuing that service by slapping a price on carbon emissions. That's created the market to buy and sell carbon credits, and there's big money to invest.

In Melbourne's CBD, conservationist, Michael Looker has been exploring the new market with corporate Australia. He's the Australian director of the Nature Conservancy, a huge private conservation group from the US that operates in 31 countries. It's recently started work in Australia.

As plants sequester lots of carbon, The Nature Conservancy intends to make some money out of its work in the field. Here's Michael Looker.

Michael Looker: Obviously the carbon market is one that is interesting a lot of investment at the moment and there are some very interesting projects I think, that are starting to emerge.

Di Martin: Tell us about some of those.

Michael Looker: Well one of them, for instance, that we're working with is in the Gondwanalink project in the South West of Western Australia, a global biodiversity hotspot where there's been massively cleared land. We've been helping to revegetate some of that land and, of course, the trees that are grown there have an ability to sequester carbon. So we've had a scientist contracted for instance to Gondwanalink who has been doing the assessments of trees. So it's revegetating and what will come back out of that. So we've put a lot of work into the science, and we then have had McKinsey's in fact help us do a pro bono piece of work to look at what the carbon out of that might be, and how we might be able to, you know, what prices they are, and also they did some work for us connecting with various different businesses and so forth, looking at how that might be sold.

Di Martin: Back in Canberra, the CSIRO was involved in a new international effort to take this idea one step further. Instead of trading carbon, the plan is to trade ecosystem services. It will force those harming ecosystems to pay money to local communities to protect the land and the services it provides.

Ecological economist Wendy Proctor is one of 50 experts writing a handbook on setting up an international market to buy and sell biodiversity protection.

Wendy Proctor: A very good example is in Costa Rica, where some of the watershed areas are very well attended by international tourists. And to conserve these areas where these tourists are going, the idea behind these schemes is to get international tourism companies to pay the local communities money to conserve the areas as they are, paying them to not log forests, basically, to maintain the biodiversity.

Di Martin: How are you going to get tourism companies to pay for something they've always had for free?

Wendy Proctor: Well, we have to get governments of these countries on board. So it may be that unless there is some payment going to these local people, they won't allow tourism to operate in that area, for example.

Di Martin: Wendy Proctor says the governments in question are keen, because the scheme helps to protect things like clean drinking water for cities, and remote communities get money for land management.

On the fifth floor of a building elsewhere in Canberra, one of America's top ecologists is visiting the Australian National University.

Gene Likens has been studying ecosystems for more than 40 years, and says there's a lot of money to be saved by protecting the environment. He works halfway between New York City and the Catskill Mountains, a landscape that's worth billions to the city.

Instead of building a mammoth water filtration plant, city planners protected the Catskill Delaware Watershed area, and then piped the water down to New York.

Gene Likens: The current estimate is some $9 billion would be required to treat the water for New York City -- if nature were not doing it for free through this system of reservoirs and aqueducts providing water into New York City.

Di Martin: It's argued that if we really understood the dollar value of nature, we'd do a better job protecting it. Here's Gene Likens.

Gene Likens: There have been attempts recently to try to value it in terms of monetary value. How much is a clean lake or river worth to you in terms of dollars? How much is a forest worth in terms of dollars?

Di Martin: Gene Likens says American politicians have become quite addicted to dollar values on nature. It makes their lives easier when it comes to weighing up conservation against other budget items.

But Gene Likens says dollar values are problematic. Especially putting a price tag on the aesthetic, cultural or spiritual values of nature.

Gene Likens: It does miss the mark in terms of being so simplistic. And it's always a very difficult issue to discuss in terms of talking to a politician or a decision maker, or the public, because it often does come down to a monetary value: how much is it

worth?

Di Martin: There are also strong disagreements about nature's economic benefits. Gene Likens remembers a debate on the financial impact of acid rain.

Gene Likens: I can argue to you, as I have in debates that I've been in in the past, that every bacterium in a lake is worth one dollar. So that makes the lake extraordinarily valuable, doesn't it? And so if we change that lake by acid rain, as happened in eastern North America very widely, then I can argue that, 'Oh, that has this economic cost'; but you could argue that, 'Well no, every bacterium is not worth a dollar', and I could say, 'Well, prove that it's not worth a dollar'. So you get into those kinds of arguments that soon become almost meaningless, but the point is there, that these systems, natural systems, provide us with the clean water, the clean air, the clean soil, the clean food that we are dependent upon; our survival depends upon. So that's pretty clear.

Di Martin: Gene Likens says valuing nature in dollar terms does have its place. But there are dangers as well, like the potential to skew conservation spending.

If the koala really is worth a billion dollars a year to the Australian economy, and if the conservation budget does get really thin, will governments spend up big on the koala, at the expense of other species? And if functioning landscapes are good for our health, how do you put a dollar value on healthy kids?

Gene Likens' Cary Institute has come up with a groundbreaking example, proving the link between disease and letting biodiversity run down.

Gene Likens: Scientists at my Institute have been working on the problem of Lyme disease. It's widespread in the United States. In some places it's in epidemic proportions, unfortunately. It's a tick-borne disease and it's debilitating in the serious form: loss of memory, arthritic pain, a variety of symptoms that are really quite nasty.

Di Martin: Scientists knew that small mammals provided transport for the Lyme disease-carrying ticks. What they didn't know was that the ideal tick taxi, are mammals that prosper in biodiversity badlands.

Gene Likens: And if you're bitten by a tick in an area that has this kind of degraded, not diverse small mammal population, your chances of getting Lyme disease are more than 90%, the scientists have found. But they've also found that if the small

mammal population is much more diverse, that if there are skunks, raccoons and a variety of small mammals in addition to the mice and the shrews, that the possibility of acquiring Lyme disease from a bite goes way down, maybe less than 20%. That's a huge difference.

Di Martin: And appealing to our own self-interest, which is a good standard to aim for if you're looking at conservation efforts?

Gene Likens: Well it's one of the first and best examples I know of, of the real value of biodiversity and its relationship to human health.

Di Martin: American ecologist Gene Likens says even if a landscape doesn't appear to benefit humans, we need to take another look. A wetland may increase the incidence of mosquito borne disease, but it may also filter our water.

Gene Likens says we need to conserve biodiversity for a range of reasons, beyond our own self-interest.

Gene Likens: It's one of the problems that I have with the current popular term 'ecosystem services', is that it is focused entirely on the benefit to humans. We frame these issues in relation to ourselves. We are very selfish in that regard, and they have to benefit us. Well there's a really strong argument that if the system is going to function properly and well and benefit us -

Di Martin: The ecosystem, the natural system.

Gene Likens: That's right, the natural system. It has to be robust and healthy on its own. And that means for all the creatures that comprise it.

Di Martin: Australia's most advanced practical example of valuing nature is in the state of Victoria.

If you've ever flown in to Melbourne, and peered out your window to the west, you would have seen what looks like some unremarkable scrub and scattered trees. But what you're actually staring at is a series of endangered ecosystems, a whole clutch of endangered plants and animals, some so rare that there are virtually no self-sustaining populations left. They're endangered because these ecosystems have been largely bulldozed to make way for Melbourne's new suburbs.

Just to the north of the airport, right on the urban fringe, property developer Stephen Bradbury owns 300 hectares.

Stephen Bradbury: We're out in Sunbury in the northern parts, and in front of us we're looking at 300 hectares of land that's

quite varied, and towards the south we've got a central hill that's covered with box ironbark, which hasn't been cleared. And then moving further to the north, in front of us, we see a sloping landscape that has been grazed and it goes up to a plateau which is a basalt plain which is very flat, extending back several kilometres.

Di Martin: Stephen Bradbury plans a multi-million dollar development here, but the land has several endangered vegetation groups on it. He's been a developer for eight years. If he'd bought the land when he first got into the game, he probably could have bulldozed the lot.

But that's all changed. Victoria now has laws that give more protection to native plants and animals than any other state, and they're attracting international attention.

The system is called the Native Vegetation Management Framework.

Also with us at Sunbury is Mike Gooey from the private conservation group Trust For Nature. He points out why it's important to protect remnant bits of bush.

Mike Gooey: Look, just above the box ironbark forest on the hill up there, is a pair of wedge-tailed eagles circling around, playing in the wind, wonderful hunters on the wing, and obviously within that wooded country up there in the box ironbark, there are probably some big hollows where there's possums as well as rabbits to eat, and places to nest. And it is the fundamental reason why it's important to protect nature and notionally the native veg framework is the way in which we do that.

Di Martin: Mike, in the past, Australia hasn't put a value, an economic value, on native vegetation. There's been value on the land, there's been value in chopping down the tree and making it into pulp, but we haven't actually put a value on native veg per se. In Victoria that's what's being done now, isn't it?

Mike Gooey: Look, that's right. The native veg framework is all about trying to ascribe a value to something which hasn't been valued before.

Di Martin: Essentially Victoria's laws set up a three-step approach to all native vegetation on land to be developed. The first step is to avoid any clearing. The second is to minimise harm to native vegetation.

This is what Stephen Bradbury's doing. He plans to keep most of his native bush, and then use it as a selling point for his other

blocks. He's asking the Council to approve higher density living on the land he can develop, to cover his costs.

Stephen Bradbury: Traditionally, a developer would come in, look to clear native vegetation and there would be an uproar from the community. A much smarter approach is to come through and incorporate good quality large open spaces for the people, because they're going to have smaller house lots.

Di Martin: If Stephen Bradbury did want to get rid of some of his box ironbark, he could apply to do that. But he'd have to pay compensation.

This is the third step of Victoria's native vegetation laws. If you bring in the bulldozer, you have to pay to protect and manage another equivalent bit of vegetation somewhere else.

This is called offsetting.

Before we can talk about how much offsets are going for, we need to ask how on earth anyone can find an equivalent bit of bush.

Victoria has pioneered a system to do this. It scores biodiversity so it can be broken down into blocks. These blocks are called Habitat Hectares, and they become like pork bellies, or iron ore or anything else that's traded.

Here's Mike Gooey from Trust for Nature.

Mike Gooey: Okay, the scoring for Habitat Hectares is based on a whole range of factors. So it's to do with the trees themselves, what sort of quality and what sort of nick are they in, are they growing well, what sort of age structure, class, all those sorts of things, and what's the under story, the shrubs and the things down there.

Di Martin: So you might have four hectares over there, but only one Habitat Hectare because there's rabbits and there's weeds and a few of the trees are dying, and things like that?

Mike Gooey: That's right. That is the general rule, that about four hectares will equal about one Habitat Hectare, depending on what sort of vegetation you're talking about.

Di Martin: So this scoring mechanism, this Habitat Hectare, breaks biodiversity down into tradeable units?

Mike Gooey: Pretty much. It becomes the trading currency for biodiversity.

Di Martin: And here's where the market comes in. If Sunbury developer Stephen Bradbury wants to clear his box ironbark, he

has to buy a box ironbark offset.

But that offset has to be better than what he knocks over. Victoria's laws say there has to be net gain for vegetation, not just holding the line.

So if Stephen Bradbury bulldozes one big old ironbark tree, he'll have to go and protect something like eight mature ironbarks somewhere else.

Stephen Bradbury could buy that offset and manage it himself, or he could pay someone else to do it. The offset price is the business of the buyer and the seller. And it's not cheap. Mike Gooey gives an example.

Mike Gooey: Well we're actually standing in front of the easternmost point of Victorian Volcanic Plains grasslands. And we've had people who've purchased a Habitat Hectare of grasslands for almost $1 million.

Di Martin: It's not clear what the top price is, because these are private deals.

But the prices will increase. Some of Victoria's ecosystems, like the Basalt Plains grassland, are down to the last of the last. The rarer they are, the more expensive they get.

Which is not all bad news for some developers sitting on a lot of native bush. Like Folkestone Development Company.

Folkestone's John Lincoln squeezed in an interview after flying into Tullamarine airport. He says the laws are complicated, and make it more expensive to develop land.

John Lincoln: From a development perspective, it's a pain, because you obviously want to be able to develop all of the land that you purchase.

Di Martin: But John Lincoln also says that Folkestone stands to make some money from the native bush it owns. So he doesn't mind people paying a million dollars for some grasslands.

John Lincoln: I'm on the flipside right now. I've got roughly 15 Habitable Hectares for sale, on a parcel of land. I'm happy to hear the costs are that high.

Di Martin: So you're on both sides of the market?

John Lincoln: Just at the moment, yes, I am.

Di Martin: The Habitat Hectares for sale -- what kind of vegetation community types?

John Lincoln: A combination of grasslands, and the redgums, the woodlands.

Di Martin: So you're actually making money on the land that you have with native vegetation that you can sell as a credit, so that's compensating for the lost land?

John Lincoln: Yes, we are actually improving the land that we have on our site, and that then makes it actually worth more for us to be able to go and sell. Because if you spend the money, you're going to get it back twofold or tenfold, or as you've heard, half a million dollars to a million dollars per habitable hectare. Whereas it won't cost us that to improve it.

Di Martin: But all is not well with Victoria's Native Vegetation Framework.

Not far from the airport in the northern suburb of Strathmore lives Steve Mueck. He scores native vegetation for a living. He's usually found wandering around paddocks with a GPS unit, working out how many Habitat Hectares are on people's land.

But this morning, *Background Briefing* found Steve Mueck at home. He certainly supports the Native Vegetation Framework.

Steve Mueck: It's a massive leap forward on where we were before the Framework came into play, because before then, native vegetation wasn't in the economic equation. You got a permit to clear native vegetation, that was it. Game over. Vegetation bulldozed, no compensation, no offsets, the environment loses out completely.

Di Martin: Steve Mueck has also seen the Framework's flaws up close.

He says offsets are becoming harder to find as vegetation becomes rarer. He also says the Framework hinges on an accurate Habitat Hectare score, so prices properly reflect the value of what's being cleared.

But he says the scoring system is very complicated, and there are inexperienced and overworked people using the system.

Steve Mueck: It is an accounting system, it's very much like wading through tax law or something like that. You need to have the ability and the experience to be able to work out what's native and what's not and then you need to be able to have a good eye to be able to work out the relative proportions of the cover of that vegetation.

Di Martin: The most damning evidence that the Framework is struggling comes from the government itself. It's published a report on how the laws are tracking. The report's found there's still significant clearing going on, especially on private land. Even though the aim is to increase native vegetation stocks, overall Victoria lost 4,000 Habitat Hectares in just one year. Illegal clearing is one reason for the loss. Here's Steve Mueck.

Steve Mueck: We're still witnessing a lot of illegal clearing; there is still a great reluctance of government to prosecute people who clear illegally, and there's still a difficulty in perception from landowners as to what represents native vegetation. A lot of people will look at a stand of trees and go, 'Well yes, that's native vegetation', but the orchids and the lilies and the grasses and stuff underneath, they won't recognise that as native vegetation, and a farmer or a land developer or whatever will just say 'Oh well, these areas need to be cleaned up', and so they'll go and cultivate underneath, and destroy 99% of the biodiversity at a site by doing so. And say, 'I didn't clear any native vegetation, look, the trees are still there.'

Di Martin: Do you think this is a matter of ignorance or do you think this is a matter of convenience?

Steve Mueck: I think that there's a bit of both in those.

Di Martin: *Background Briefing* approached Victoria's environment minister, Gavin Jennings for an interview. He declined. Instead, a manager from his department agreed to speak.

Kimberley Dripps agrees illegal clearing is a problem, but she says the Native Vegetation Framework is doing its job.

Kimberley Dripps: We don't see the Framework as having failed at all. We see the Framework in fact as having built the foundation of a long-term aspirational goal for the Victorian government. It's important to realise that since clearing controls were first introduced into Victoria in 1989 the amount of that loss has decreased substantially. So we are on a pathway towards net gain.

Di Martin: The report highlights native grasslands as a big area of concern. Even though some grasslands are critically endangered, 3,000 hectares were cleared in a year. The report says much of this clearing...

Reader: Appears not to be considered in regulatory processes.

Di Martin: This means that grasslands are slipping through the net. But Kimberley Dripps disagrees.

Kimberley Dripps: Well the evidence that I have is that the grassy areas in fact are being considered under regulatory systems, and in my work...

Di Martin: Hang on, in your report, the First Approximation Report this is a quote. Do you want to contradict your own report?

Kimberley Dripps: No, I'd like to build on my report and say since the First Approximation Report identified the issues with grassland, the government has been putting substantial effort into working with councils to identify the areas of highest value grasslands in their areas, and to assist them and work with them in appropriately considering those grasslands as part of planning applications.

Di Martin: There are 79 councils in Victoria. This level of government has the least resources and expertise. Yet it's the most responsible for interpreting and implementing the complex native vegetation laws. It also has conflicting interests at work.

In Melbourne's north lies Hume City Council. Here's town planner, Kerri Birtwistle.

Kerri Birtwistle: The frustration I think that most town planners would experience in interpreting this legislation is that there is an inherent tension between retaining native vegetation but also promoting growth, which is being an urban growth council, that's our focus.

Di Martin: Kerri Birtwistle says it's small to medium-sized developers who are the hardest to deal with when it comes to protecting native vegetation.

Kerri Birtwistle: So our first hurdle is actually getting people to appreciate that the site that they think is a weed-infested dust bowl actually has some degree of significance.

Di Martin: Are you seeing frustration amongst these kind of small and middle-sized developers, such that they're trying to get around the Framework? You know, there might be clearing their native vegetation, or letting it degrade to the point where it's not worth much?

Kerri Birtwistle: I think as the story grows in the community about how difficult it is to get approval, I think that will be something that we face in the future.

Di Martin: As council workers explain, there might be big fines for clearing native vegetation but there's none for letting it degrade through overgrazing or letting the weeds encroach.

Councils are also nervous about the long-term management of native vegetation offsets. Developers only have to look after them for ten years. Then councils will have to take over in many cases to keep the weeds down, the ferals out and the biodiversity intact for evermore.

A Senior botanist at Melbourne University says resourcing is a real issue when it comes to making these native vegetation laws work. Brendan Wintle says if councils gloss over the Framework's details, it could have a big impact on the ground.

Brendan Wintle: There are a lot of differences between vegetation types. And those subtle differences are really important for threatened species for example. So a mature bit of grassy woodland habitat cannot be replaced by ten times as much immature grassy woodland habitat if you're a powerful owl, or a sugar glider, or various threatened species depend on having mature vegetation of a high quality in order to survive.

Di Martin: So the like for like idea is not working?

Brendan Wintle: No, it's a problem. It's also a problem that if you try and restore a bit of native vegetation either from a paddock or a degraded site, it takes a long time to restore.

Di Martin: And we don't know really how to do this, do we?

Brendan Wintle: No, it's a very complex issue, restoration. And it's also a fairly young science, the science of native vegetation restoration. And there are huge amounts of uncertainty about what happens to a patch of native vegetation when you try and restore it to its original state.

Di Martin: *Background Briefing* has been told that Victoria's support for its Native Vegetation laws is half-hearted. The policy might sound good, but the resources to implement it are not enough, and species will become extinct.

The observation was made that if Victoria really wants to build up its native vegetation stocks, it has to treat it like any other growth industry. Like the export industry, ecosystems need help to help themselves.

Melbourne University's Brendan Wintle says the other thing that needs to change is getting conservation issues on the planning table much earlier.

Brendan Wintle: And in doing so, we will avoid nasty situations where people have invested large sums of money in planning for the development of a particular area, and then an annoying greenie or scientist comes along and tells them that they can't do it there because that's the last location of a yet-to-be-described Golden Sun Orchid.

Di Martin: Brendan Wintle says there are many problems with protecting native vegetation. But he says grasslands post the most difficulties, partly because they've got an image problem.

Brendan Wintle: There's been a perception that these areas don't really contain important biodiversity values.

Di Martin: Because they look like flat paddocks for all intents and purposes, don't they?

Brendan Wintle: They can look a bit like flat paddocks and not that long ago, the Honourable John Thwaites mentioned...

Di Martin: This is the former environment minister in Victoria.

Brendan Wintle: Yes. He described a visit to the grasslands when he was starting to deal with one of these first issues, and he said he'd got out of the car and he looked around and he said, 'Oh, you're joking aren't you? There's nothing of value here.' And I think if you go to the grasslands at the wrong time of the year, that's the sort of impression you might get.

Di Martin: Everyone agrees that political will is critical. But politics is about dealing with competing interests. And when biodiversity comes up against new housing developments, biodiversity often comes off second best.

One example in Melbourne's west starkly illustrates the problem. The old Laverton Air Base contains 275 hectares of the highest quality native grassland; critically endangered species listed at both the federal and state level. One government botanist called it 'the jewel in the crown of the Port Phillip region'.

But Laverton is also a big open space, close to Melbourne, and it's near a freeway and a railway line. The site has been approved for a new housing estate and is being cleared as we go to air.

A conservationist from Environment Victoria, Andrew Booth guided *Background Briefing* out to Laverton.

Andrew Booth: We're just coming into the edge of Hopper's Crossing, just next to the Laverton Air Base on the other side of the freeway.

Di Martin: And this is right in the west of Melbourne, isn't it?

Andrew Booth: Yes, it's on the western edge of Melbourne. On the edge of Melbourne's industrial precinct.

Di Martin: Just a short drive later, we arrived at the edge of the Air Base. *Background Briefing* requested access, but the developer said no-one was available to take us around. So instead, Andrew Booth and I stood on the fenceline, watching graders beginning their work in the distance.

Andrew Booth: We're here on the northern edge of what was the Laverton Air Base, looking across the broad expanse of native

grasslands. This is one of the best quality remnants of endangered grassland in the Port Phillip region. Because the Air Base was managed with occasional slashing rather than being ploughed or heavily grazed or cropped, it still supports a rich diversity of rare and state and nationally listed species.

Di Martin: Which I believe is being bulldozed as we stand here, really.

Andrew Booth: Yes, the work here's starting around the edge, as we can see.

Di Martin: I can see the flashing light on the grader up there.

Andrew Booth: The developer has got approval to destroy most of this grassland and so that will be a great tragedy; it's irreplaceable.

Di Martin: The Native Vegetation Framework was not applied to Laverton, partly because it was sold before the laws were introduced. But a recent rezoning did give the planning minister the chance to apply the Framework. He did not.

Instead, the developer had to pay a block sum of half a million dollars to buy grassland elsewhere.

But conservationists say if the Framework was applied, the developer could have been paying ten times this amount.

At Melbourne University, Brendan Wintle says good environment protection laws are simply being bypassed.

Brendan Wintle: In the case of Laverton there was a highly political decision made to not apply the requirements of the Native Vegetation Framework to the areas that were being bowled over for the development. And this is a recurring theme, I guess; we often see the ministerial discretion kick in to override the threatened species values, and the threatened ecosystem values in favour of other social values like expanding the housing estate. And this is, it comes down to a question of social priorities. Are we really prepared to incur some financial cost to looking for alternative places to expand housing that aren't going to involve losing some of the last of the last of a particular ecosystem.

Di Martin: Victoria's planning minister, Justin Madden, declined to be interviewed.

The Principal Solicitor from Victoria's Environment Defender's Office says the housing crisis has put a lot of pressure on conservation policies around Australia.

Brendan Sydes is also worried about how offsets are being used more and more frequently.

Brendan Sydes: Offsets and offsetting is very slippery, a very problematic concept. The danger with a system that we've got I

suppose is that although the priority is to avoid the clearing of vegetation, the availability of offsets tends to encourage people to move fairly rapidly to offsetting.

Di Martin: Straight to the bulldozer.

Brendan Sydes: The problem with offsetting is that it's in some cases, in many cases probably, just another way of not saying no. Of allowing business as usual to proceed as business as usual. It's kind of like the Middle Ages in some respects I suppose, in this whole concept of papal indulgences, where rather than stopping sinning, you could just pay the Pope some money and keep on your merry way.

Di Martin: And yet legislators around the country are putting much faith in offsets. A similar scheme to Victoria's is just starting up in New South Wales. And offsets are available under the Federal Environment Protection Act as well.

Now it's time to return to the question at the beginning of this program, a question from Wentworth Group of Scientists director, Peter Cosier. Here it is again.

Peter Cosier: We have tipped past the point where destroying nature improves our economic wellbeing. So we have to change the economic system. Can we do it? Absolutely.

Di Martin: Amid the hubbub of Canberra airport, Peter Cosier was on his way home after talking with a series of government departments about a key part of this economic change.

At its simplest, it's about counting what's in nature and how nature is changing.

Like a set of economic accounts allows us to manage a complex and unruly economy, the Wentworth Group of Scientists is urgently calling for a set of national environmental accounts.

Peter Cosier is hopeful that they'll be introduced.

Peter Cosier: I believe we are on the cusp of achieving this Holy Grail for environmental management.

Di Martin: Peter Cosier says our past environmental management has been guesswork, and a set of environmental accounts would get the best bang for our environment buck.

Peter Cosier: At the moment we're going off instinct. I cannot tell you whether one river is more healthy than another, and to what extent. I can't tell you whether they're improving or degrading from one year to the next. So I don't know where to invest

my scarce resources in managing those catchments.

Di Martin: Peter, would you argue that at the time the various state governments were handing out water licences on the Murray-Darling system like lollies, that had we actually understood and assigned a value to the biodiversity, to the ecosystem service of that system, we would have come up with a very different situation than we see ourselves in today?

Peter Cosier: We would not be spending $10 billion of taxpayers' money to fix up mistakes that were made in the 1970s and '80s if we had an accounting framework in place. Because we wouldn't have done what we did.

Di Martin: Australia has only just started accounting for nature. One of the first examples is called a Sustainable Rivers Audit for the Murray-Darling.

Peter Cosier explains how an audit back in the '80s would have averted disaster.

Peter Cosier: If we had the sustainable rivers audit in place then, we would have been able to quite quickly, with good science, estimate the impact of allocating water licences on the health of those river systems. So we would have then had a public debate: do we sacrifice the health of these river systems for economic development? Or do we not? And so that conversation would have taken place in the 1970s and 1980s before we made the mistakes.

Di Martin: Peter Cosier says there's one example in south-east Queensland that's working to avoid bad planning mistakes in future, an example that's attracting international attention.

It's an accounting system that lets government work out how to squeeze another million people into south-east Queensland without destroying the Moreton Bay estuary. The project is called the Healthy Waterways Partnership. Peter Cosier.

Peter Cosier: It has been for over a decade now, scientifically measuring the health of its waterways and the Moreton Bay estuary, such as pollutants in the river, how many organisms live in the river, things that science knows are good indicators of healthiness of the river. And they measure them; something like 400 sampling sites measured monthly for ten years. And using the data from their environmental accounting framework to now start predicting and advising where to invest, to maintain the health of those waterways in the face of population growth.

Di Martin: So instead of like the economic system, where you measure the number of unemployed people, or the number of new jobs, you measure the number of critters, or how clean the water is?

Peter Cosier: Yes. The number of birds and bugs and bees in the system. It's impossible to measure all of the biodiversity in Australia all the time. What you need is to find indicators, or surrogates for the biodiversity. And birds, the things we see flying in the sky every day, are very, very good indicators for the health of our native vegetation, of the habitat for all animals, for all biodiversity.

Di Martin: So you're saying that instead of thinking about counting birds as the province of your strange aunt, that it is actually fundamental for the future health of the Australian economy?

Peter Cosier: Absolutely. So what used to be an activity of the eccentrics, and many of my friends are going to kill me for saying that, in the next ten years could well become the most important activity conservation does in Australia, because it will be providing the information we need to manage biodiversity in Australia. So measuring birds, bugs and bees is the first step to sustainability of the Australian landscape. And eventually the Australian economy.

Di Martin: That's Peter Cosier, from the Wentworth Group of Scientists.

Back at the Australian National University, David Lindenmayer's room looks out towards Federal Parliament House. He's been keeping the environmental heat on politicians for more than a decade.

David Lindenmayer is all in favour of a set of environmental accounts. So, will properly valuing nature make the difference to what's decided in Parliament House?

David Lindenmayer: That's a really hard question, to work out what resonates most with politicians. Because sometimes your numbers one day will really stun them, and another day it doesn't make any difference. What resonates best with politicians? When you can find that out, let me know and then I'll go for it even harder, because we've got to turn this environmental mess around in Australia.

Di Martin: *Background Briefing*'s co-ordinating producer is Linda McGinness; research and website, Anna Whitfeld; Steven Tilley is this week's technical producer, and Kirsten Garrett is executive producer.

Further Information

The Wentworth Group

CSIRO Sustainable Ecosystems

The Nature Conservancy Australia

Cary Institute of Ecosystems Studies

Native Vegetation Net Gain Accounting Department of Sustainability and Environment Victoria

ecoMarkets Department of Sustainability and Environment Victoria

Williams Landing development

Credits

Presenter Di Martin

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