AN INTERVIEW CONDUCTED BY BERNARD O'NEIL WITH DR BOB HENZELL AT URRBRAE, SOUTH AUSTRALIA ON 25 NOVEMBER AND 23 DECEMBER 2008 FOR THE PROJECT ON THE HISTORY OF THE ANIMAL AND PLANT CONTROL COMMISSION.
[Square brackets include comments and corrections provided by Dr Henzell in April and May 2009]

Disk 1

An interview conducted by Bernard O'Neil with Dr Bob Henzell of the Animal Plant Group at the Waite Institute on 25th of November 2008. The Group is part of the Department of Water, Land and Biodiversity Conservation. The project is recording the history of the Animal and Plant Control Commission.

[0:23] Bob, thanks very much for agreeing to be interviewed for the project. You're a current employee so I'd like to concentrate a little bit on your working career and aspects of animal and plant control. Perhaps to just throw it open if you could begin with a little bit of your personal background and date of birth, place of birth, that sort of thing, just to tell us who Bob Henzell is?

OK, Bernie. First of all, one minor correction: it's the Animal and Plant Control Group, not the Animal Plant Group.

I was born on 30th of May 1944 in Perth and I did all my primary and secondary schooling in Perth. Went to secondary school at Perth Modern School and then went to the University of Western Australia, where I did a science degree majoring in Zoology and Physiology. I did Honours in Perth and came to Adelaide to do a PhD which I finished in 1972. That was on arid adaptation in Australian lizards, which doesn't really sound like much of a lead-in to a career in pest control but that was the job that was on offer at the time. So I took that and I enjoyed it so much I've been here ever since. (laughter)

That's a very quick overview. Just backtracking slightly. Boyhood interests – what things were you interested in, living in Perth?

I developed quite an interest in native wildlife. One of the projects we had to do at uni, for example, was an insect collection. I ended up with a collection of hundreds of specimens pinned down onto pieces of cork and so on. There was a wonderful swamp near the home that we lived in. There were just thousands of bees and wasps and beetles and bugs and other insects there. It was a wonderful place to go and spend hours catching these things. When I went back there about 10 or 15 years ago for another look at it it had been all filled in. It was now a golf course – been converted from a hotspot of biodiversity with probably hundreds or thousands of species of animals and plants living there to basically lawn with one species of grass with a few human beings wandering around on it. (laughs) It was a great disappointment to me!

Apart from that, a general interest that kids had, playing games, doing a bit of sport, bit of photography. I wouldn't say I was particularly enthralled by my studies, even though (laughs) I did reasonably well at them. Just average childhood, I guess.

Do you recall where that interest in the natural environment came from? Parents' influence or friends or teachers?

Originally it started off with a tutor we had at the University of Western Australia, who was a quite inspirational tutor. When I first went there … I did enrol for a Science degree – I wasn't even going to do zoology, that was a last-minute change of mind on my part to do it – and Don Bradshaw was the tutor in zoology that we had. He was so good and so inspirational that I went on with zoology and that ended up becoming my career, and developing more and more of an interest in it. So it was really an accident of history from that point of view.

But were you someone as a boy who would collect insects the way other people would collect stamps or something like that?

No, no. I did collect stamps, but ... (laughter)

As well!

As well, yes. The interest in insects really came about during my degree at the University of Western Australia.

So it's a later development, in that sense.

Yes, that's right, yes.

You didn't necessarily see zoology being a career?

Not initially. I did in the end, because it was what fascinated me. I became more and more interested in it; but originally no, that was just a fourth subject to do.

Then you came to Adelaide to do the PhD.

Yes, that's right, yes.

The particular attraction for Adelaide?

Was the ecology school at the University of Adelaide. Professor Andrewartha was leading that and he had an international reputation. He'd written a major book at that stage. It was presented to me as a good place to come, so I came here.

Were there other opportunities around Australia at the time?

There would have been, but this was I think the preferred one. It was the one-and-only.

And what did you see the outcome being? You'd come to do your PhD here ...

Oh, at the time?

You mentioned this became your career here, but was that the expectation at the time?

No, no, certainly not. My expectation was I'd move elsewhere, either overseas or to a different place in Australia. My original intention had been more to work with native animals rather than introduced ones; but the job opportunity was there and so I took it, maybe a bit reluctantly at

the time, but I liked it so much and it's such a good place to work that I stayed there ever since, 30-odd years later. (laughs)

[5:45] Yes. It's just I suppose I'm focusing on it a little bit because it's such a new area, in a sense – early or mid '70s by this stage, the environmental movement's becoming a bit more proactive, a bit more of an awareness about the natural environment, perhaps.

Yes, there was. But the interest in pest control probably started off 20 years earlier or more than that with the rabbit problem that we had, which became the subject of scientific research during the early 1900s. So there was quite a track record for work with invasive species, as we would now call them, even going back then.

But is that something you were I presume aware of? But were you much interested in it when you were doing your PhD and so on?

No. No, not at all. (laughter) That interest did develop later. Possibly partly because the goat is such a fascinating animal: it's the companion of man and yet it can be a terrible pest if it's not adequately managed, and so it's this duality of the species that became one of the things that interested me about them.

So you were able to specialise in your own interest once you had a working career?

Yes, yes. The project on goats was a given, but then within that I had considerable freedom as to which angles I took on it. I didn't go my own way completely. This was all discussed with colleagues and the boss at the time, John Bromell, who was, looking back on it, a really very good leader of the group. He gave us a lot of freedom, he didn't try and pin us down too much, and yet he made sure that what we did was up to standard all the time.

[7:30] So this is about 1976 or so, joining the Vertebrate Pest Control Authority?

Yes, that's right. That was 1976, February something, some day in February 1976 was my first day.

So you jumped straight from your PhD to the job?

No. I had a temporary job at the University of Adelaide as a temporary lecturer for about three [years] in between time. Before that I was working as a technical officer for Professor Andrewartha on some work he was doing on grasshoppers, plague grasshoppers, trying to look at the factors that made them so well-adapted to Australian conditions. They were a major issue at the time.

Would it have been possible for you to have continued that research-type work? Was there a future in that through the academic institutions?

It was a theoretical possibility but there wasn't an opportunity, there was no job available in that field, so I had to look elsewhere.

[8:30] I presume you were at the age, and maybe even personal situation-wise, where you needed to have a job.

Well, yes, yes. I had a partner at the time. We didn't have a family at that stage, that didn't come in till later, but definitely I wanted to have a job. (laughs)

Looking to settle down.

Yes, I guess even then. I didn't think of it in those terms, but that's how it ended up, of course. I settled in Adelaide and I've been here ever since. But at the time I probably thought even then that I might still want to move elsewhere at some stage. I guess I just didn't have a long-term plan in that sense.

So the job you were coming into, was that a permanent position in the sense that they'd take people on a temporary basis or probation or whatever, but were you a permanent officer?

Yes, I was, yes. The contract situation was nowhere near as prevalent as what it is now, so most employees were permanent employees once they'd been through their probationary period.

So what were some of your earlier say tasks or projects? You mentioned goats. What things were you expected to be doing as a novice public servant?

I was really looking at the goat from a scientific point of view, from its pest potential. So it was a question of is or was the goat a pest, and what biological factors about it predisposed it to being a pest, and what could we do about it? So it was essentially all applied research, but some elements of it were original work, as well as some was applying techniques which had been developed elsewhere to a new species. But there was a considerable degree of flexibility in how I went about it, within those overall limitations of trying to solve a problem essentially.

You mentioned you had your own interest in the goat, the animal. What was the interest from the Authority's point of view? Why were they taking you on to work on goats?

The key issue at that time was the damage that feral goats were alleged to be doing in the Flinders Ranges. There was a fair degree of pressure being brought on the politicians to do something about this and that's where it started, that's why the position was created. At that stage there was no real … It wasn't like a contract position, where you've got five years to do the job. It was open-ended; and when we thought the problem had been solved or investigated as far as we could take it then I might move onto something else. Eventually that did happen, but I've always retained the interest in goats.

So were you the lone goat specialist, so to speak?

I was the goat specialist. I had a field assistant back in those days when the Public Service was better endowed than what it is these days. (laughs)

Who was that?

There were several of them.

So you had a series, over time, of people?

Yes, that's right, yes. Basically they went on to different things. They liked the job and stayed there for a few years and then found something different to do. They didn't have that same professional involvement with it that I did.

With a mention of a 'field assistant', by implication therefore you're going out into the field; or were they more a laboratory-type assistant?

No, primarily field assistants; in fact, that's what they were called, they were called 'field assistants'. Their prime purpose was to help me do the job as I saw it should be done. But of course a good field assistant doesn't stop there; they make their own contribution and solve the problems that they actually see themselves in the first place. So it was quite a good working relationship between them.

[12:35] I know you provided a copy of your CV and there's an extensive list of articles and publications and so on. But, perhaps just briefly, what were some of the main aspects of the goat work at that time? Going out in the field, you weren't necessarily trapping, you weren't necessarily counting numbers. What were you doing?

I was doing those things, but I was doing other things as well.

Yes.

One of the main elements of the study was a biological study of goats on Canegrass Station, which was a pastoral property about 500 km^2 east of Burra. It's in an area of dense woodland with a chenopod shrub understorey. As I discovered during the course of my work, this was the habitat, the diverse shrubland, that just suits goats down to the ground. It was a goat heaven and the goats thrived there. I was looking at things like what they were eating, how quickly they were growing, how quickly they were breeding, essentially to try and calculate the potential rate of increase of the population, Then, when you know that – when you know, say, if you started off at the beginning of the year with 1000 goats how many you'll have 12 months later and the answer to that was we estimated about 1700–1750, there was a 75% increase a year – then you know what you've got to do, to take off, to just even hold the population constant. Of course it's that increase over the year, about 750 goats, which was about 43% of the population, just to hold the population steady. Unless you're doing that the population in fact will go up; you've got to exceed the 40% a year to reduce the population. That's the management implications of the research, that it can allow you to determine those sorts of parameters.

But, in addition to that, we were looking at the diet of goats and doing work on the vegetation there (on Canegrass), but also on the Flinders Ranges, Once we had some idea of how goats were operating in that environment, then we started some more practical work on controlling them, building trapyards and things like that.

One assumes you were doing things like – perhaps not you personally, but control-wise – things like shooting goats or trying to control numbers that way. Am I right in assuming that's the flavour of that period in the early '70s, mid '70s?

Yes, yes. We did actually shoot goats, but that was to collect samples to look at their biology.

That's the odd one or two sort of thing.

Yes, that's right. In the end it was over 1000 over a number of years. But the control methods which were in place at that time were … Shooting was probably a minor one. Most of it was mustering – mustering with motorbikes, on horseback in the Flinders Ranges. There was some trapping which we tried to promote without getting all that much of an uptake on it. I thought that trapping around watering points had a lot of potential, because we knew that in a dry summer every goat had to drink every few days and so in theory you should be able to catch every goat. But that didn't have a high uptake on the part of the pastoral community. So there were issues.

I guess what that leads into, one of the main lessons of my working career, is the real issues involved in pest control don't involve the pest so much; they involve the people who are managing it. Unless the commitment and the will to do something about the pest is there not much is going to happen. Our job is to make people aware of the problem and to give them the tools to do the job, but then it comes up to the landholders to get in there and do it.

I was going to ask you about that, because I presume you can't go onto this property, for example, without the landholder's permission and their interest in solving the problem.

Yes, that's correct, yes. We could force our way onto a property but we never did so. It would just be an invitation to a fairly unproductive project if you did that, if you were working on a property where you weren't welcome. So we always got on well with the landholders of the properties that we worked on. They were very nice people and very genuine and concerned about the environment. It was good.

I suppose you end up forming some personal rapport, personal relationship with those – whether it be at that property or elsewhere – you've got to get on well with those people.

Yes, that's right, yes. In fact in the case of Canegrass, the person who owned the lease when we first started working there, David Radford, he rang me many years later because he heard a radio interview I gave, (laughs) tracked me down and rang me up to say how much he'd enjoyed it. That was years after he'd sold the place and he'd retired into Adelaide at that time. Yes, it's always been one of the rewarding parts of the job.

What was the, for want of a better term, success rate like in Canegrass and how effective was the control program that you developed?

So-so. As I said, it depended really on the pastoralist. The reason why we started working on Canegrass originally was the Pastoral Board told us that David was a good manager, David Radford was a good manager, but in fact he hadn't really done a huge amount about the goats at

that stage and so we would have an opportunity to study them there without him taking them all off from under our noses, sort of thing. He did start mustering them – I guess he saw the dollar signs were there as a resource that could be sold – so he did end up controlling them. Then he sold the place and other people moved in who also controlled them. But there were always enough goats there for us to get our samples to do our work.

What was the main activity on his station then, if goats I presume were a sideline that he's mustering?

Yes, he ran sheep there. They were essentially a wether property because it wasn't good breeding country for sheep. He had a lambing percentage of about 40%, so he wasn't in the lamb production game. It was pretty much purely a wool-producing operation.

Were there other pest animal problems on that property?

There would have been a few foxes, but the goat was the main one.

Rabbits?

Very few. It was because of the density of the shrubland. There was very little grass and ephemeral growth there most of the time, and that other biomass of the less-digestible forage type, which suited the goat very well, it's not high enough quality for rabbits and so the rabbits were very scarce on Canegrass. A few around some of the dams where the sheep had removed most of the shrubbery and it was in those places that you did get some grass and ephemerals growing and that's where the rabbits were concentrated, but they were very localised and nowhere near as much of a problem as they were in other parts of the State.

It's interesting how you get that regional variation in your type of pest.

Yes, that's right, yes. Canegrass gave me an insight into what makes a place suitable for rabbits, from that point of view, yes.

It's probably first nature to you, but for an outsider looking in it's interesting to realise that. How much time would you have spent working out there in the field – I'm thinking here of the early years. What ratio of office work:fieldwork, and fieldwork at Canegrass in particular?

Probably in the early years, when I was learning about goats, maybe 3 months a year in the field. We'd go to Canegrass half-a-dozen times a year to look at the biology of the animals. Each one of those trips might be a week long. Then there was the other work of the vegetation monitoring up in the Flinders and then looking at control techniques for dealing with goats. It all added up probably to about 3 months a year.

So how then were things in the Authority itself, working in town, working in the office situation? How did you find that?

That was fine. We all had our desks and office space and facilities for doing our work, so that was always there for whenever we came back again.

Interaction amongst the staff members? I mean you're the lone goat specialist, so to speak as I said before. You've got your field assistant, but the other people were working on other animals and problems.

Yes. We all had our different specialty. There was only one of us working on each pest. We cooperated together and shared ideas, as you would do with a good working environment.

Sometimes, though, that breaks down, just the nature of the people or people develop their own pet interests and they ignore the others and so on. I'm just wondering how the group would have interacted. It was obviously a smallish group.

No, that didn't really happen in our case. Maybe this had something to do with the people who were selected to go into those jobs that they always talked to each other, shared ideas and helped each other out when we had to. It was a good place to work.

[22:10] You mentioned John Bromell as the boss fellow.

Yes, that's right, yes.

What was John like?

He was great. He had a research background himself working with dingoes in CSIRO [Commonwealth Scientific and Industrial Research Organisation] before he came here. So he knew the problems that we had to deal with as research people. He did his best to protect us from a lot of the political influences that could have otherwise taken up a lot of our time. He was very good, in fact, at doing that. He left us to get on with the research and the policy side of it was dealt with, in the early years, by other people in the group.

So he was not so much the fall guy, but he was able to handle all that and you just ...

Yes.

[23:55] It leads me ask, Bob, what about liaison with, I suppose not so much within South Australia, other departments, but certainly Australia-wide? There wouldn't have been many goat specialists in Adelaide, so did you get involved in Australia-wide situations with colleagues interstate and so on?

There weren't too many colleagues interstate. There were a couple of guys in New South Wales who were working with feral goats. We were pretty well it in the early days with looking at goats as a pest. CSIRO had quite a large program working with goats in western New South Wales where they were looking at them as a possible tool to control the so-called woody weed problem, the proliferation of unpalatable perennial shrubs – most of the *Eremophilas* and *Dodonaeas*. There's a fairly complex combination of factors that led to that. The problem CSIRO were given was 'How can pastoralists deal with it and try and open the country up and make it more suitable for sheep production?'. Goats were one of the tools they were looking at, in combination with the use of fire.

It sounds like you're almost creating another problem by using the goat – the potential's there to ...

That's what they were looking at – could goats be used to do the job. The way the work panned out in the end was that these *Eremophilas*, although goats would actually eat them, they were

pretty unpalatable to goats as well and so to get rid of the *Eremophilas* you essentially had to eat everything (laughs) on the property, and then the *Eremophilas* would be reduced, but in order to get to that point you had to do a fair amount of damage to the other vegetation there as well. Whether that was a price worth paying was not our judgment to make because this wasn't a problem we had in South Australia; it was more of a problem in New South Wales than here.

Is there a sense there that you're participating with a particular … because of your particular expertise and interest, but it's not really your problem, it's New South Wales, and you're not spending much time on it?

When I first got the job here I was sent over there for two or three weeks to look at the work they were doing there. The reason for that was to get to know the people but also to look at the techniques they were using to monitor vegetation, because it was always seen that part of my job would be an examination of the effect that the feral goats were having on the vegetation in the rangelands. To do that you've got to have the techniques to measure that, to make an evaluation of it.

So that involvement with bodies interstate, other departments, CSIRO and so on, has that been ongoing for you? I suppose I'm asking did that evolve into a bigger thing, the goat work?

No, not really. CSIRO, I'm not quite sure why the program stopped, but the program on looking at goats for woody weed control didn't continue probably much beyond the early 1980s. I can't remember the exact date at which it was closed down. There then wasn't a huge amount of interest in the pest side of goats in the rangelands. A lot of the pastoralists were actually controlling goats, but from the more production-oriented side of things; we didn't really have a huge amount to do with that.

In the 1980s a project was commenced in Western Australia to look at the possibility of using goats for rangeland production. I had some involvement with that work for the first two or three years before it went its own way and I was no longer part of that project over there.

[27:00] So, it has led to collaborations interstate. Probably the most rewarding one of those occurred much later as a result of the 'Judas goat' work we did. The Judas goat work was initiated ... Judas goats are a technique for controlling goats. It was originally developed in Hawaii. It entails putting a radio collar onto a feral goat and letting it go. Goats being social animals, the Judas goat will join up with its feral conspecific animals in the environment. You can then track down the Judas goat with radio-receiving equipment and shoot any of the feral goats that's associated with it, trying not to shoot the Judas goat, which you then let go [to] join up with other feral goats, and just keep on repeating the process. The people in Hawaii were claiming quite good results with this technique. At the time, in the mid 1980s, we got involved in the [Department of] Woods and Forests land around the South Para Reservoir, where we had

a fairly well-entrenched feral goat problem they'd been trying to deal with for years without much success, We started Judas goat operations in there and within a few months we'd cleaned the feral goats out. They were just all gone. We got to the point of eradication in the mid 1980s. Even these days there are still no feral goats there, they haven't reinvaded that area. So that was quite a big success story.

But that work then led onto the Judas goat method being promoted, if you like, as a tool for goat control and exotic disease [control], because it wasn't particularly disruptive. One of the issues with controlling exotic diseases is that if you've got an exotic disease such as foot and mouth disease in feral goats you don't want to spread the goats because if you do that you'll spread the disease. The Judas goat method was not particularly intrusive. Nothing like using a helicopter, for example, which has got the potential to disperse goats – whereas [with] Judas goats you move quietly through the environment and pick them off without creating much disturbance. This was picked up then by the brucellosis and bovine TB eradication program, BTEC [Brucellosis and Tuberculosis Eradication Campaign], where they were having problems with the buffalo in the top end of the Northern Territory. They started 'Judas buffalo' operations as a result of the work we'd been doing with Judas goats. That was very successful. They upped their kill rate for buffalos by a factor of threefold, just by using Judas animals.

[29:50] I was wondering, as you were outlining the procedure, whether it did have applicability to the donkeys or horses, the feral pests there. Can the method be used otherwise?

Yes, well, it can be. It's been used now with donkeys and buffalo and also pigs and deer, but it works best with goats. This must be because the goat is just such a social animal that these Judas goats … When you shoot the companions away from around them and you leave them on their own, they'll just go out and look for another feral goat. (laughter) They're so good at it that in the work at South Para, when we were getting close to the point of eradication, we didn't realise that we'd virtually cleaned out all the feral goats because the Judas goats were still joining up with feral goats at more or less the same rate. Whenever we went there there were always ferals with the Judas animals. Suddenly it just got to the point it just stopped, there were no more feral goats, We kept on going for another few months and didn't see any more, and at that point we realised they had actually all gone. But it just showed how good the Judas goats were at finding the feral goats and in a way that's much better than any human being could ever do. Goats, in fact, are better at doing that than any of these other species are.

You'd locate the feral goats and then they'd be shot?

Yes, yes, shot or ...

You had shooters for that, or were you doing it yourself, or ...?

I did a bit myself; but the field assistant I had was doing most of this work. The guy who worked at South Para was Phil Griggs, Philip Griggs, and he was just excellent at it. He was

determined and resourceful and quite up to the work physically. He essentially made that program succeed.

I presume there's not much alternative. The goat's a fair-sized animal, so in that sense it's a good target, but how else would you kill it?

(laughter) Funny you should ask that because the Woods and Forests Department, who were trying to control the problem at that time, they'd tried free-feeding the goats and trying to get them into trap yards. They even got lines of university students to march through the scrub to try and drive them out and force them into a pen. Just at the time I was getting involved I went up to watch one of these operations with the uni students and there was this thin line of university students driving it would have been about 30 goats up into a fence with a pen in it. You could see as the goats got closer and closer to the pen they got more edgy and they then eyed this line of students off and suddenly they just made a break for it. (laughter) There's this phalanx of goats headed out to the students, who parted company and let them through! At that point that's when we decided to start the Judas goat operations, with great results.

So when was that happening, just to give us a time?

Oh, the 1980s.

Throughout the '80s, do you think, or ...?

No, no, it was probably about 1985 or thereabouts that we got to that point of eradication, and so we then monitored the situation for another year or so and decided we'd eradicated them and then took out the remaining Judas goats. But we've been back in there looking since and we get reports from the locals in the area and they say they've never seen a feral goat in there since.

But are there 'tame' goats, so to speak, do people in that area keep goats on farms or properties?

Yes, yes, yes. There was one guy in particular I remember had angora goats and he had pretty lousy fences. We spoke to him and said we thought his fences should be in a bit better nick. He said his goats aren't getting out, 'No, no, no, no way'. We were pretty certain that they were, because we were getting angora goats. This wasn't in South Para. This was at Warren and Hale, which was another conservation reserve near the Warren Reservoir. Anyway, this went on for a while. Then in the end the guy said he'd got rid of his goats. He said he'd sold them. The next thing we knew there were about a dozen angora goats in Warren and Hale Conservation Parks. Phil shot them. Then he tracked down the tattoos and they came back to this guy. So we knew he'd just let them go. He hadn't sold them at all. This was his way of saying, 'Nark you'. This is one of the big issues involved in pest eradication programs is that you've always got this risk of someone sabotaging the operation. Trying to get community cooperation is one of the very important parts of any of these programs, especially when going for eradication, which is very expensive. Then, of course, you've got the issue of trying to maintain it.

That, of course, is one of the roles of the Authority then and the Commission since and so on, that enforcement aspect. Did you get involved very much in enforcing regulations and rules and so on?

No, no, we had our own specialist officers for doing that. You've got to be very careful about collecting evidence and how you go about it and all the documentation. It's a specialist skill in itself, and it's not one that we were really trained to do, that side of it. So we always tried to keep the enforcement/compliance side separate from research, because the last thing we want to be seen as doing, as research officers, is being policemen in disguise because you won't get the cooperation of the landholders if you do that. I must admit that [on] a couple of occasions I turned a blind eye to things which I knew weren't right, but I knew that if we kicked up a fuss about it ... The only reason I was aware of this as an issue was because the landholder let us onto the land to do the work there. So the last thing I was going to do was to take advantage of that, basically, to make a problem for him.

It would be jeopardising your own research and the broader implications that would arise from it.

Yes, it would. Yes. I also thought it wasn't a particularly good way of returning the kindness of letting us work on the place. (laughs) I don't think any of us can claim to be perfect. (laughter)

From your comment there, Bob, it sounds like the Authority and then the Commission had this conscious policy that research officers weren't going to follow through on compliance matters, enforcement matters. Was it as black-and-white as that?

No, it wasn't black-and-white. But, in fact, we didn't do it. There was a division of labour and I'm sure that this was … We never really spoke about this very much, it just happened. But I'm sure that this was probably in everyone's mind as the rationale behind it.

We've talked very much about the goat aspect. What are some of the other things about the first decade or so of work? What other things did you get involved in?

One of the other areas of work I was involved in was some exclosure work in the Gammon Ranges National Park – or what became the Gammon Ranges National Park; it was actually part of Yankaninna when we first started doing it. We chose that area because this was one of the goat-infested parts of the Flinders Ranges. I started doing that work with Brendon Lay, who was in the Department of Agriculture then, and Brenton Arnold, who was the National Parks ranger based at Leigh Creek at that time. They were very concerned about goats and they knew I'd just taken this job up, this was back in 1976, so invited me to be part of the project as well. So where were we going to put these exclosures? We went to several different sites and the site in the Gammon Ranges National Park at Arcoona Bluff was the preferred site, that fitted in with the experimental design we wanted to have: there weren't any sheep there, so we didn't have to worry about trying to separate the effect of sheep from goats. But it was fairly clear to me from the outset that we also had a rabbit problem there. Rabbit grazing is quite distinctive: the rabbits, when they cut a twig off a shrub, do it with a diagonal cut, just like taking a chisel

to it. Some of the shrubs were damaged in this way so I knew that we had to separate the effect of rabbits from goats, so we designed that into the project right from the start.

And one of the first results we got was in early 1979. There was a summer deluge up there – about a 120 mm of rain fell over four or five days – and it produced a massive germination of virtually all of the perennial vegetation. There were clods of dirt 15 cm across just being lifted up by hundreds of seedlings underneath them. It was an amazing sight. We went up there about three weeks after this rain fell and mapped some of the germination which had happened, including about 1000 seedlings of mulga, *Acacia aneura*, which is one of the important rangeland tree species up there. In the Flinders Ranges there's been very little regeneration of mulga since Europeans arrived. The experimental design that we set in place allowed us then to say quite clearly that the loss of mulga seedlings at that very early stage was due almost entirely to rabbits, and goats had very little to do with it. Anywhere the rabbits could get, the mulga seedlings had gone. There was one experimental treatment that only the rabbits could get into and the goats couldn't, and the seedlings had virtually all gone from there as well. So we knew that whatever you did with goats it wouldn't make any difference to the story with mulga regeneration unless you got rid of the rabbits as well. This then led me into having a parallel interest in the rabbit story as well as the goat story, because it was fairly clear to me that, in terms of the rangeland resources that we were looking at, they were both having a major effect on it: the rabbits at the very young stage of regeneration, and the goats then when the seedlings got bigger and there was more of a mouthful in it for the goats. They took more of an interest in stuff that was maybe half a metre to a metre high, but not the tiny seedlings of 2 cm high.

So that's a developing interest for you, but the Authority presumably had someone else looking after rabbits as their main interest.

Yes, that was Brian Cooke back in those days. He did also have some work with exclosures that was being done further south, so his work down further south – Carrieton, Belton, that country closer to Hawker, whereas mine was up further north, they complemented each other. The studies were essentially similar in their overall aim, but mine had the extra dimension of the goat side to it as well as the rabbit side.

So Brian was the principal rabbit officer, so to speak.

Yes. Well, in fact, he was the principal officer of the research group. He was in charge.

Yes. I was going to ask you when you mentioned John Bromell earlier whether there was a group leader as such for the research scientists, so that was Brian.

Yes, that was Brian.

Did he handle matters of policy, administration and that sort of thing and you just kept on with the science? Or did you and your other colleagues get drawn into that sort of stuff?

We did to a degree. There were issues of policy that came up where we had the technical expertise to respond to them and, of course, we did that. In terms of the more political side of it,

dealing with the development of government policy and so on, we were consulted but more happened elsewhere in the group – John Bromell and other people, the more technical side of things in the group. Whereas our job was to provide the technical information, it was essentially other people's job to develop the policies. But, that said, later on when it came to developing a policy relating to feral goats, essentially that was my job then to do that. I guess I had the experience and had had some exposure to the more political side of it by that stage, so I took on that role then. When you've had that experience it's not really a clear separation between research and policy.

That later situation, would that be more in the Commission days than the Authority period?

It was a bit of both. Developing policy relating to feral goats was initiated in the Authority days, but it could really only come to fruition in the Commission days when the legislation was changed to allow us to make a distinction between feral goats and domestic goats. That happened with the *Animal and Plant Control Act*, and at that stage then the policy which we'd been doing some background work on was finalised.

Did you get involved in the legislation at that time, given by then you've got a decade of experience?

I had some involvement with the regulations relating to goats and the Act was formulated to allow us to do some of the things with goats that we knew we would want to do, including making a distinction between feral and domestic goats. So yes, I had some contact with it.

We've talked a fair bit about your own work, but in the same vein here about Authority to Commission, how did Bob Henzell see that process evolving? What was your attitude, reaction, to the creation of a commission? We're talking mid 1980s.

Yes. In some ways it had the potential to broaden our … As the Vertebrate Pest Control Authority we were dealing with vertebrates, which are animals. The plants were something more in that they were the resource that the vertebrates were threatening; but that bringing the two groups together (the Pest Plants [Commission] and the Vertebrate Pest Control Authority) had the advantage of allowing some scope for a more comprehensive analysis of problems across pests as a whole and also for looking for interactions between animals and plants. One of the areas that I thought was worth pursuing with this was looking at the potential of goats as weed control agents for some of the pest plants that we were dealing with, for example, and so we had Vicki Hawker when she was with us a few years ago, she did a project on looking at the possibility of using domestic goats to control silverleaf nightshade. There is some scope there for these connections between the two types of organism, animals and plants. But, of course, you don't have to combine the two agencies to do that.

There was another issue that was bubbling away under the surface at the time, which was that the Vertebrate Pest Control Authority did have quite a strong research group whereas the

Weeds Unit didn't, they had no research capability at all. At that time the government – I'll go back one step. When the Vertebrate Pest Control Authority was set up it was a time of expanding public service. This was in the 1970s, which was when I got my job and when a number of other people were employed by the Vertebrate Pest Control Authority. Come then into the 1980s, the pendulum was going back the other way and the government was contracting. So this situation of the research group in the Vertebrate Pest Control Authority amalgamating with the Pest Plants Commission, [which] had no research capability, we saw this then as being the potential for creating problems of us being induced or otherwise encouraged, and we hoped not ordered, to actually get into pest plant research. In fact that didn't happen. Eventually we appointed John Virtue on the pest plant side. But we're still probably underrepresented on the side of plant research.

Had you had much interaction with the pest plant people prior to amalgamation?

No, not a huge amount because they had virtually very little in the way of research capacity. The Weeds Unit originally did have the Department of Agriculture doing some of the weeds research for them but then, with the staff cutbacks and so on, when the Department of Agriculture had to cut back on staff, it was the weeds research bit that went because that was something they were doing for other people. So there wasn't that other parallel body of weed researchers that we could really relate to. There were certainly some in the Department, but we didn't really have a huge amount to do with them.

And what about another agency, given your involvement in the northern regions of South Australia, the Pastoral Board? Did you have much to do with the Pastoral Board people?

Not a huge amount. I'm just trying to think why. (laughs) We certainly had dealings with them. The Pastoral Board who suggested Canegrass as being a suitable place for me to do my work. So we always had good relations with them. But in terms of a close working relationship there just wasn't really the opportunity there for that to develop.

Information sharing or anything of that type, though?

Well, yes.

They were doing surveys of pastoral properties, for example, and I'm just wondering ...

Yes, although some of that actually started later. They had pastoral inspections from the day I started my job, but it wasn't really on the scientific footing that it's been placed on now under the new *Pastoral Land Management Act*, where there's now a prescribed schedule for doing these pastoral condition measurements and periods for them to be repeated. They're quite comprehensive assessments of the condition of the vegetation on the pastoral lease. But even so it's not really the same level of detail as what we need to look at for some of the effect of pest animals on some of these rangeland species. For example, with the rabbit work, I've been

involved in looking at survival of mulga seedlings. There's really very little of that done under the pastoral land assessments conducted by the Pastoral Board. It's more of a higher-level, more broader picture that they're trying to paint of changes in rangeland conditions.

But what about in a general sense? The Pest Plant people, Pastoral Board people, for example, some of them have got a scientific background. You're probably going off to conferences or seminars or things of that type. Was there much professional mingling?

Well, yes, we certainly socialised at various functions and so on and situations like conferences. But in terms of working closely together it just hasn't happened, for one reason or another, Some of this might be that our jobs just haven't brought us together in a way that would foster that cooperation. Had circumstances been different I'm sure it would have happened.

The amalgamation of the Authority and the Commission, 1985, 1986, with legislation, did it have much impact on Bob Henzell and his work?

It did lead to one piece of work I did in the late 1980s, which was … Getting back to this issue about the lack of pest plant research. One of the things that the new Commission was looking at is 'Did it need a research group at all?'. It wasn't a case of getting into pest plant research; it was to get out of research altogether. I thought there was a need – at this time Brian Cooke was overseas and so I was acting in his place as the principal officer on the research side of things, and I thought we needed to have some fairly clear-cut evidence of the difference that research had made to the management of vertebrate pests. When I started looking for this it was very thin on the ground to actually get this documented. There'd been a little bit of work done many years before with myxomatosis for rabbits, the effects of when myxomatosis first went through the rabbit populations in the 1950s, what effect that had on wool production and so on, but with that exception – and even that was fairly fragmentary; back then people thought rabbits were just such an enormous problem that there was no need to prove the damage they were doing, everyone accepted it; and that was no doubt true at the time, but the problem then that we were being confronted with was, 'Look, OK, everyone accepted that', but we couldn't prove it. (laughs) So I worked very closely with Richard Downward back then to make assessments of the extent of rabbit damage because there was very – not comprehensive measurements of it and we really were trying to come up with an estimate for the amount of rabbit damage done to the State as a whole, and looking at the effects that research had had on reducing that damage. That occupied me for probably [one or two years altogether, on and off]. I then went through working with the other guys in the group to look at other pest animals to come up with assessments for the size of the problems, the economic damage that all these pests that we were working on were causing, what problems also there were that we weren't working on because we didn't have the resources; but also looking at what difference we could make in terms of, once we'd demonstrated an effect and then encouraged or persuaded the politicians that there was an issue there to deal with and provided the techniques to do it, to what extent have we

reduced the problem. That went through quite a long period of consultation and circulation of drafts and so on and eventually that was finished in 1989, at which point – we'd been feeding this in little bits to the Commission all through this period and by the time it came to submitting the final report they agreed with us that (laughs) there was no need to get rid of us, we were doing a worthwhile job – so from that point of view it was a successful outcome.

But that then had another beneficial result in the early 1990s, when the Department conducted a major review – this is the Department of Agriculture – of all of its operations, the Organisation Development Review as it was called. They got in a group of external consultants to do this review. Of all the groups in the Department, because of this background work we'd done with looking at the value of pest control for agriculture in South Australia, we were one of the better-situated groups to actually justify our existence. In fact, of all of the groups in the Department we were the only one that was recommended to get increased resources, not reduced resources. (laughs) Mind you, the increase in resources never happened, but at least we weren't cut; some other groups were essentially just abolished completely. So it stood us in good stead from that point of view.

It's odd in a sense that you have to justify yourself when it's almost self-evident. A bit like your comment about the rabbits: if they're always there you know there's the problem. If the Commission's not about handling this who is going to handle it? It's beyond the resources of the individual landholder.

Well, yes; but the issue there really is the politicians have the problem of they probably had a lot of different proposals put to them about ways to spend money and they looked at which one or ones of these would deliver the best benefit/cost outcome for the community, best use of the taxpayers' dollars, and so unless we could put a figure on that they essentially couldn't place us in a ranking with other competing priorities. It was clear we had to do this and we had to come up with an answer, and so we did the best that we could, which did satisfy the need at the time.

I don't disagree with that. I'm just saying that to me it's almost a self-evident truth: if we cut back on the resources for an organisation like the Commission, it's only likely to exacerbate a problem. (telephone rings)

End of Disk 1
Disk 2, 25 November 2008

Bob, just leading into this next section, I should also mention for the purposes that you gave a presentation in 2005 at the State Conference for the APCC and you gave a very good summary of aspects of your work and the Commission's work, including you touched on this economic imperative and the report you did there. That recording's also lodged in the State Library so people will need to be aware of that. But let's just pick up a bit more of that process of ODR and the economic imperatives and so on, and where that led you.

The ODR was that we had a fairly satisfactory outcome for us: they left us pretty much alone. Of course, we then got cut back, whittled away, subsequently as government kept on getting smaller and smaller. Next question? (both laugh)

Where to next? Well, the ODR, that's the early 1990s.

Yes.

So you've had amalgamation and so the Commission's going. Your work hasn't changed, in essence it's the same: research scientist and so on, but you're in a bigger group. What was it like working for the bigger group? Less impetus or you're left to your own devices?

Our research group pretty much stayed the same. We ended up losing our field assistants as a result of ongoing budget cutbacks, so it meant that we had to share assistants or get other people in to help us doing particular bits of work. The overall number of staff working in animal and plant control in our grouping, that's different departments it's been in, has shrunk considerably over the years, which [has] been a retrograde step because we're getting more and more invasive species and less and less resources to deal with them. That's a personal view and the politicians have got to weigh up a whole range of competing pressures on finances and they're also responding to public opinion, which is what's ultimately driving all of these changes in resource allocations within government.

That's one of the curious things, as I mentioned a while ago there about the self-evidence of the work you do. You say now you're getting more invasive species being introduced and more and more of them, that no matter how much work you do there's still another pest to confront, whether it be animal or plant, whatever.

Yes. What's happening with the Murray River is probably a good illustration of this. It only becomes a political issue when we get to a crisis point and then that's the point when resources are put into it and suddenly the politicians get motivated to do something about it. If you've got a situation that things are turning over fairly smoothly, essentially the politicians really don't want to know about it. They might want to say it's good work and it's a success story, but in terms of resources you'll find at the next budget you will get a cutback. This just keeps on going.

You talk there – you've mentioned a few times politicians in general; but what about the politicians you've had to deal with or that you've come across? The Minister, for example?

I've never had much in the way of personal dealings with any of them. There was one occasion, it would have been back in the early '80s, when we were after some more money to do some work up in the Flinders Ranges in response to the goat problem, particularly in what was to become the Gammon Ranges National Park. As I'd had several years' experience at that stage – I was still a very junior officer – I was fronted up to these three ministers (the Minister of Environment, Minister of Lands and the Minister of Agriculture) and we probably spent half-an-hour to 45 minutes giving a presentation, being grilled by these guys. But it was a successful

outcome: we got the money we wanted. They were really very easy to get on with. (laughs) But apart from that it was mostly the policy people in the John Bromell category and on the more technical side who dealt with the politicians on a day-to-day basis.

What about perhaps in fieldwork? Did you have Ministers or the head of a department coming out to see what you were doing?

No. (laughter)

You were lucky.

Yes, that's right. Our work wasn't in the political spotlight; it was more almost like background work that was generating information to drive a program rather than being at the forefront of a crisis or anything like that. We weren't out there fighting bushfires. That's what gets those people involved.

Plague locusts or fruit fly or something like that where …

Yes. It wasn't crisis management; it was more dealing with a long-term situation with long-term solutions.

So for you work continued apace under the new Commission and into the '90s.

Yes.

Any particular research interests develop, new research interests?

There was one that did develop in terms of the possible use of genetically modified organisms to manage vertebrate pests. This actually started off for me at a conference in 1995, one of the vertebrate pest conferences which were held in Australia every four years or so, and a number of presentations about GMOs (genetically modified organisms). At that stage, Australia had a Cooperative Research Centre developing GMOs to attempt to manage rabbits, foxes and mice. In New Zealand there was work being done on the possible use of GMOs to manage possums, Australian brush-tail possums, which aren't native in New Zealand and they're a major pest animal in New Zealand. At this conference in 1995 there [were] some fairly heated exchanges from people on different sides of the Tasman about what would happen if the GMOs that New Zealand was developing to basically sterilise our possums, if these got back to Australia. There was no resolution to this. But the other issue that was operating that was analogous to that was what would happen if Australia's anti-rabbit GMOs got to Spain, into rabbits in Spain where they're a native animal. I thought this was being sadly neglected. Here we were getting upset about New Zealand for what they might do to our possums, and we were overlooking the issue about what Australia might be about to do to rabbits in Spain. So I started looking into this a bit more fully and trying to develop relationships with other people to do something about this at an international level. This went on during the late '90s into the early 2000s and it culminated in a symposium that we held at the International Wildlife Management Congress in New

Zealand in 2003, which was a symposium held on just this issue. That was one new area that I started developing an interest into. It's fascinating. The technology is really very exciting, a lot of potential. But there are some safety issues that haven't been resolved with these GMOs, or at least not the ones that were being developed. In the case of those GMOs for rabbits, foxes and mice, the work's been put on hold because they were judged unlikely to be effective enough to make a big difference to the pests in the wild. So the issue about possible spread overseas hasn't actually arisen in practice. But it's still there as a possibility. The other concern there is that in Spain they were developing a GMO to immunise rabbits against myxomatosis and rabbit haemorrhagic disease, or RHD, which are our two key bio-controls in Australia. So Australia's got the worry [that] if this is released into the wild in Spain and gets to Australia we could lose our major bio-controls for rabbits. So these international issues haven't been resolved and it's a pretty precarious situation to be in.

Well, it's much more difficult now: with the speed of travel and the amount of travel and so on, these things can spread before you know them.

I know, yes. The agents or the GMOs that are being looked at are viruses and so they'd be very easy to smuggle. It's unlikely that they would spread naturally from Australia to Spain or vice-versa; what's much more likely is that someone will get it into their mind to release them illegally, as has happened with RHD, rabbit haemorrhagic disease virus, and also myxoma virus in the past. So it could easily happen again with these GMOs.

The nature of the human mind.

Yes.

Or certain humans' minds.

Yes. (laughter)

This work you were doing, the new interest, Bob, that's something within the Commission or were you involved with the CRC more directly?

No, it's really been within the Commission. The CRC … It's been not an entirely happy relationship with the CRC over the issue. The CRC has had an interest in using these and I've always felt that they didn't pay enough heed to international issues. They certainly acknowledge them, but in terms of it making any difference to the way they went about their work, I couldn't see that it made much difference.

You've been in a fortunate position, I suppose, in that you can follow your passion or your interests for your work. Have there been instances where you've been directed to do things, work on projects or whatever, that you haven't been so enthusiastic about?

(laughs) I did have a bit of difficulty at one stage continuing with the interest in GMOs, because this was thought to be a national issue, not a State issue. But I was able to argue that in Australia if I didn't do this there was no-one else who would. So I was allowed to continue

working on it, which was subsequently acknowledged to have been the right decision to have made. In terms of having to do anything I didn't want to do, no, not really. I've always taken the view if I can see a need to do something then I'll do it. So if I think there's a problem there that needs to be solved and I can see I'm the [appropriate] person to do the work, I've always been happy to take that on; and if I don't think there's an issue there that needs to be looked at I'll say so, (laughs) and I'll argue the case.

In saying so and in arguing the case, are you doing that with your management or are you fronting up to the Commission itself? I mean, do you get called up before the Commission, for example?

Both of those things, yes. Back in the days when we had the Commission I used to front up to them fairly regularly to say what I'd been doing and to put those arguments as to why we should or shouldn't be doing something. With the Natural Resource Management Council it's a bit of a different story, a much bigger area of responsibility and much more remote.

We've got a few minutes left: perhaps we could just look at that transition. The brief for the project is to record the Commission's history, but there's that transition into NRM. Looking back now, how did you see that evolving, the NRM regime and the demise of the Commission, so to speak?

We thought this would probably be a retrograde step as far as animal and plant control went. It would result in the integration of the different elements of NRM, possibly in a better way than had happened before, but we could see that in terms of resources available to regional bodies to conduct NRM, animal and plant control was probably in the best situation, primarily as a result of the system that John Bromell had put in place many years before and which had continued. This has been borne out, that it's becoming increasingly difficult to get much of a focus on pest animals and pest plants. The problems have got to be fairly significant ones before they're dealt with by the NRM system. As an example, this came up recently with goats, where the aerial surveys of feral goats in the pastoral zone indicated that feral goats had been continuously increasing for several years in a row and that something needed to be done about them. Essentially I stirred the pot and, as a result of that, (laughs) we got some activity happening. But this is something that the NRM system hadn't been proactive in detecting this problem and in doing something about it because they had a whole range of other interests that were competing with pest animals, and goats weren't on the top of their priority list.

But given that NRM is essentially soils, water, animals, plants, all rolled into one with a few other bits and pieces, why is there such a downgrading of APC issues? Do you have any feel for that? Why would NRM give importance to the other ...?

Pest animal control has always had elements of policeman-type activity about it, but you're dealing a lot of the time with people who are, in terms of compliance issues, with people who aren't at the forefront, who aren't innovators and up with the best agricultural or pastoral technology, which is why they've got pest problems in the first place. So there are these elements to it. There were some other fairly significant NRM problems around at the time and,

to a degree, that's because we've had a fairly successful system for animal and plant control in place, that most of the major problems we've had had been dealt with to a degree – not in a completely satisfactory way, but something had been done about them – and there were other NRM issues that were crying out for some need, some attention. What it really required was an increase in the level of resources into NRM to deal with them. Instead what's happened to some extent is the resources for animal and plant control have been taken away and put into other areas. Yes, I'll leave it at that. (laughter)

OK. I'm tempted to ask you more because, even though it's going beyond the brief for the Commission, it's also pointing to the future.

Yes.

But you've hinted enough. Though the actual process – talking here in 2005, 2006, the NRM's up and running, the legislation was a little bit before – Was that again a situation where Bob Henzell could stand back from it and not be that heavily-involved because it's for the administrators, the managers and so on to look after?

To a degree, but part of the rationale behind the NRM system was that a lot more of the control devolved to the regions, away from the central state authority. In some ways this is a good thing because the policies and so on are much more locally attuned to the local circumstances. The case we made at the time, before this change happened, was that this was already happening through our Animal and Plant Control Board system and that we thought this would be an appropriate model for the rest of NRM to follow. But the government of the day saw it differently and that didn't happen. We were then in the situation of, what role do we have? If a lot of the technical expertise that's required, it's now the regional NRM Boards see it as their responsibility to be in control of that, what was our role as the central state agency involved with NRM – DWLBC – what was our role in relation to the NRM Boards?

For me this issue came to a head when I saw the figures for the aerial surveys for goats which indicated that beginning in 2004, which was when the NRM system was introduced, the goat numbers have gone up every year since then by about 50% a year. We know from the work I've mentioned earlier 50% a year is very close to the maximum rate of increase the feral goat population can sustain. So it indicated to me quite clearly as a scientist that almost nothing was being done about goats and whatever had been happening before in terms of goat control had stopped, and the population was just exploding with no sign of it coming to an end. If that had been allowed to continue we would have been faced potentially with an environmental disaster in the rangelands, and then one that would have been a crisis and would have been a major political issue. So having a central state authority/agency focus on this, I saw it as being my job to try and initiate something to prevent this progression from happening; and so arranged, in association with the Arid Lands NRM Board and the Murray–Darling Basin Board, a meeting

at Port Augusta to discuss the issue a few months ago, and it's resulted now in some 'Caring for our Country' grants to actually do something about the goat problem.

This is one of the roles that we can have as a State agency, is having almost like a parallel oversight, overview, of some of these issues and taking some involvement in them when we think that needs to be done, it's appropriate for a central government agency to do that.

That's your area, of the goats; but do you get a sense or a feeling that other aspects of APC work again have fallen off the radar, so to speak, for the NRM? Are there other colleagues saying that their areas are not being looked after as well?

With the NRM system there've been some new officers inducted into the system and the people involved now with pest animals and pest plants who haven't been intensively involved in the past, and so there's a certain learning curve that we're having to go through. Some of the arguments that we went through 20, 30 years ago about the way of dealing with some of these problems, we're having to go through all these again. This is maybe inevitable given some of the changes in personnel, but it's been highlighted by the NRM system that has precipitated some of this.

I guess you've had to go through, looking over your career, that learning curve. You've learnt when the Authority becomes the Commission so you've got to go through that education process, and now the Commission becomes the NRM you've got to go through it again.

Yes.

A bit of history repeating, perhaps?

Yes, yes, and maybe I've been around for long enough that that's ... (laughs)

You've hinted earlier, Bob, what kept you going, and obviously you've got a passion for research and those couple of interests in particular. But I suppose you wouldn't have kept going if you didn't have the right people to work with. You couldn't have worked in isolation for 30-plus years.

No, no. In fact, we've got a very stable workgroup here. Most of the guys in the research side of things have been here for 20 or 30 years. So it's a good place to be.

Do you socialise much with the workers? The longstanding colleagues, I mean.

No. We probably think we see enough of each other at work, that that satisfies most of our desire for contact. We're chatting away a lot of the time during the daytime. I tend to go my separate way socially, privately. (laughs)

Probably at this point of time I should let you go your way now, because it's getting close to knock-off time. I joke. You're not a 9-to-5 man?

At the moment I catch a bus which operates to a timetable, so yes, I catch a bus ...

I mean as a rule in your working career you didn't have to have a 9-to-5 timebook to fill in or anything?

No, no, no.

Just as long as the job got done.

Yes, that's right. That was always … You worked the hours that were needed, especially in the field, you'd work 12-hour days in the field without a second thought about it, work weekends and so on, because you're hundreds of kilometres away, you didn't come back to Adelaide just for a weekend. There was that level of fitting in with the requirements of the job, just making it work in a sensible way.

It sounds like you've had a fun time, as in an enjoyable time, and you wouldn't have stuck with it if it didn't meet your interests.

No. One of the potentially most rewarding parts is going to be happening right at the end of my working life, which could be the eradication of feral goats from Kangaroo Island. We're very close to achieving that. That would be a fairly major achievement if that happens. This does show one of the good features of the NRM system, that that project is being run by the NRM Board on Kangaroo Island, where they've got all the local involvement and local commitment, which is where it needs to be for an on-ground, practical project like that. This is, if you like, with the NRM system, it's showing its strength with a good project which is being well run and well managed and looks as though it's going to be successful. But for me in Adelaide watching it happen it's been very rewarding to see that.

That's satisfying. And also the fact that there is some success to the NRM as well.

Well, yes. (laughter)

It's not all bad.

Yes.

Perhaps we'll read a little bit more about feral goats on Kangaroo Island, either from Bob Henzell's pen or from the Commission's history. It might be a postscript.

(laughs) Or from the pen of the people over there, because they're the ones doing the work.

I won't ask where to next for Bob Henzell. I might let you go and catch your bus.

OK. Thanks, Bernie.

Thanks very much, Bob.

End of Disk 2
Disk 3, 23 December 2008

An interview conducted by Bernard O'Neil with Dr Bob Henzell at the Waite Campus on the 23rd December 2008, continuing the interview of 25th November 2008, in regards to the history of the Animal and Plant Control Group. Bob wants to follow up a couple of points that we talked about last time or perhaps even overlooked last time, so I'll throw it open, Bob. We were talking about your career in particular last time and the general development of your working career.

Yes, a point I overlooked last time when you were going through the chronological sequence of the work I've been involved with; and in the late 1990s I was involved in a fox project with

Vicki Linton. Vicki Linton was the project officer who did the hard work. But the aim of it was to find out whether we were deriving a benefit from fox control for agricultural production. At the time this was fairly controversial scientifically, there was evidence pointing both ways, and there was no clear-cut indication that we were getting value for the resources that we were putting into it. The other aspect to it was that there was a lot of the poison compound 1080 being distributed for fox control. If this wasn't producing any benefit for agricultural production then we needed to reconsider its use because there were other hazards that were posed by spreading it all over the countryside. We undertook this project as part of the national Feral Animal Control Program, with funding provided by the Commonwealth. The aim was to look at a wide range of landholders who were practising fox control or who weren't practising fox control and seeing if there was any differences in their lamb production or production of other agricultural commodities that we could attribute to their use or otherwise of fox control.

It was a 3-year project, and we got some fairly unexpected results. Perhaps the first one was that when we compared people in a fairly small area who were practising fox control or who weren't there was no difference in their lamb production, there was no significant difference between the two. This struck us as being very odd, because some of the people swore that they were getting the benefit. They said that before they started fox control they had much lower lambing percentages than what they had after fox control. We tried to reconcile this discrepancy between the two in terms of what might be producing it. The one thing that came to our mind was that it's possible the fox control was killing foxes but that the benefits of that were then evened out between all the people in the area because the foxes were moving from one property to another and so there's an overall benefit, but it applied to everyone regardless of whether or not they controlled foxes within that immediate area.

So to try and get a look at this what we did was to go back to the historical records of bait usage in these areas – the geographical Hundred was the area that we selected, because the records were classified by the Hundred, so we knew in a year how many baits had been applied in that area; we knew the area of the Hundred, and so we could then come up with a figure for the number of baits per square kilometre which had been applied. Now, this gets around this question of who's applying the baits and who doesn't; it's just looking at the bait usage over the area as a whole. When we did that analysis there was in fact quite a strong correlation between the overall level of bait usage and lambing percentage, and lambing percentage rose from about 80% up to about 100% with a bait usage of above about two to three baits per square kilometre. I think we had demonstrated quite a clear benefit from fox-baiting, and we'd also come up with an explanation as to why some of the scientific studies of this question had failed, because they didn't allow for this effect of the movement of foxes between properties after the baiting.

We then took it one step further and came up with an estimate of the … If you controlled the foxes in one area, what was the draw-down effect, what was the overall area that might derive some benefit from this operation. The figure surprised us: it was about 1000 km^2, so talking about an area maybe 15, 20 km in radius around a property is where the foxes are re-equilibrating over that area in response to fox control. It indicates the foxes were highly mobile and the benefits of fox control applied over a much wider area than the area that was baited.

When you say the fox is highly mobile, territorially? Within a large region do they stick to territories or do they migrate through the whole region?

Tend to stick to territories. I suspect that what was happening was the foxes weren't coming from the outside of that area into the middle but there was a gradual movement. It's like a vacuum and each step would affect the next one out. So there was an incremental movement into the centre. The foxes at the outside of that, in the periphery of that 1000 km^2, weren't ending up in the centre of it. They were probably ending up a little bit closer in. But then as you moved in towards the centre the foxes coalesced into that central point again and filled the gap created by the baiting work.

Do they cover large areas? When you talk about 20 km radius and so on, but do they go hundreds of kilometres into another area?

I would think it would be theoretically possible for a fox to do that. Their home ranges tend to be much smaller than 1000 km^2; this is almost orders of magnitude bigger than the home ranges. In some cases you can measure home ranges of foxes in terms of hectares in highly productive areas. Basically, the fox will occupy an area that gives it the resources it needs. So if you're in a high rainfall area that's got lots of food there for them they only need a small area. But when you move into semi-arid country they need to occupy bigger areas because the density of prey for them is much lower so they need to range over a bigger area to satisfy their needs.

It's obviously a complex area to understand, in this case, the fox – or just understand any of the animals.

Yes, it is. It would be fascinating to do further work on it, but someone else will have to take up that challenge, (laughs) not me. But certainly it was quite an interesting project to be involved in, that we did have the tools to answer some of these fairly major questions about the fox and the damage that it caused. This controversy's been going on for decades, back to the '60s and '70s and possibly even before that, where scientists have looked at this and haven't really been able to corroborate a lot of the reports that landholders were providing them with.

So your study was about three years.

Yes. That's right, yes. We had three years' data collection.

What period of the ’90s?

It was ’97, ’98, ’99 were the three years involved. That just followed quite a dramatic increase in the bait usage against foxes in South Australia, which is what precipitated us to do the project in the first place. It had gone up by tenfold or more, very rapidly over a period of three or four years – probably more than tenfold; I can’t remember the exact figures.

It’s something we might have touched on last time in passing but, to make more of a point of it, what is the intention here with the fox: to control the numbers or to eradicate the fox?

No, just to control the numbers. We realised that eradication is a much taller order than effective control and the resources simply wouldn’t be available to eradicate foxes. The difficulty they’re having in Tasmania at the moment with the release of foxes there a few years ago and the difficulty of finding out where the foxes are, let alone eradicating them, that shows that the fox would be a very difficult adversary to try and eradicate.

How does that compare, perhaps, to your earlier time, starting with the Vermin Branch and so on, the notion of control, eradication? Was there a different emphasis when you began?

No, no. We’ve always realised that eradication is a very tall order and, although it might remain our long-term goal, to achieve that we’ll be depending on improvements in technology to allow that to happen. The Judas goat work that we did is one of the few cases where we did demonstrate that eradication in a local area is feasible, because basically the goats do the work for you; if we had to go out and try and track down the last goat in some of these areas that would be just exorbitantly expensive. The experience in New Zealand where they’ve done this without using Judas goats [demonstrates] that, that on some of the islands there I think they had figures of about $20 000 per goat to get the last half-a-dozen goats; we would have done that in South Australia for a hundredth of that cost.

When you think of the number of dingoes, the number of feral camels, goats etc., it’s probably unrealistic to expect they’d all be – and is there a need for them all to be – eradicated? Two related questions.

It depends on what your objectives are. Even a few camels will still be eating something. For all intents and purposes we can probably say, ‘If you’re going to get 100 camels in Central Australia, then you’re never going to be able to measure what they’re doing’. Whether you’d be better off to get rid of them is then another question. I would think that you *are*, because camels breed and so you’re then eliminating the need for ongoing maintenance of that high level of control. But the techniques to eradicate these pests aren’t available at the moment, I don’t think they will be for decades. Genetic modification has got the potential to lead to eradication, but we need to make the technology much safer than what it is now.

That's one of the lessons from various incidents in Australia's history – prickly pear or cane toads or you mentioned foxes into Tasmania now – there always seems to be that little episode where there's an outbreak of something or a spread of something.

Yes. Perhaps with the work with the genetic modification, if that does lead to the potential to eradicate a pest population of some species, then the direct potential consequence of that is that if that genetically modified organism gets into the natural range of the species it would eradicate it there also. So there are quite significant biodiversity consequences could flow from this technology that we need to have much better control and agreement over before it's utilised.

To reach that level of understanding obviously you need a lot of contact with a lot of other scientists, locally and Australia-wide. To come back to your story about foxes you mentioned your having a national program. How do you maintain liaison, how have you maintained liaison, with colleagues elsewhere?

Through conferences, e-mails, phone calls if necessary – phone calls are an expensive way of communicating, these days. There's provision there and the capability there to do all that.

But are you a keen conference attender, for example?

Yes and no. They've got their place. At my stage of the career there's maybe not a lot of point in it anymore because I'll be moving on to other things, but several years ago I was quite a keen attender, yes.

What about – not necessarily all of the nation, but perhaps some of the States – meeting informally to discuss matters: did you have liaison with people in another State on an irregular basis?

Yes, usually, or often these meetings were telephone conferences or that sort of thing, use the technology rather than physically going and meeting with them; but there were times when we would meet face-to-face.

The technology obviously is a more recent trend – e-mail and teleconference facilities and so on in the last decade or so – but '70s, '80s, were you flying around the country or travelling around to meet people?

A bit. We never had huge budgets and so that limited what you could achieve. You also had to think about if you put time into that it meant that you weren't putting time into something else and where were you going to get the best use of your time. You'd really only go interstate to meet other people if there was a real need to do it and you couldn't sort it out over the phone, if you had to physically be there to resolve the business at hand.

I suppose some of the problems were particular or peculiar to the particular State – Tasmania may not have a problem with the dingo the way that other States might have?

Yes, exactly. That's an illustration of that, yes. Although to a degree in the past, where the resources for this sort of work – well, the resources still *are* limited – it was often the case that one State would work on a particular pest species, like South Australia did most of the early

work on feral goats, for example, and so that would then be shared with other States who would adopt the findings as appeared relevant to their particular situation.

Was that done by, presumably, national agreement at ministerial level or departmental level?

It was really just what happened. No, it was never quite so organised or structured as that.

OK.

In the case of goats South Australia got involved because we had a burgeoning goat population in the Flinders Ranges and there was a lot of public pressure being put on the government to do something about it. That issue was probably the key one that led to my position being created in the 1970s. The same pressures weren't on other States at the time; they would have responded to other, pressing needs of theirs rather than South Australia responding to those same needs.

It's something I haven't asked other people, but were ever you aware of any attempt to have a national body handling all of these issues instead of the individual States? I'm thinking the way we're now talking about the Murray–Darling having a commission handling the whole Murray–Darling Basin rather than individual States. Was there anything of that type contemplated for the nation?

I guess there was sort of *de facto* that situation with the CSIRO, who were a national body who undertook national-level research; but the States always found that they then needed other stuff to apply that to their own particular situation, for whatever reason that might be. It could be that there were regional differences in the situation where we had to control rabbits, for example, that needed local work that a national body didn't have the resources or the local need, the political imperative, to take it on, so these things then became State responsibilities. There was always a partnership, if you like, between the Commonwealth and the States in working on vertebrate pests.

One of the things you mentioned, Bob, about conferences and you didn't mind going – every now and then you find someone who's a reluctant conference attendee – but giving conference papers and coming back to your fox work, writing reports, are you comfortable with conference papers and the heap of reports that I can see in your bibliography you've prepared a few.

(laughter) Yes. My publication record probably hasn't been as good as a number of other people's, in terms of scientific papers.

It's pretty extensive.

Yes; but there are other people who've got many more papers than I have. That's going to be a job for my retirement. The fox work I've just talked about, for example, that was presented at conferences and there's been an extension-type brochure that Vicki Linton prepared on that. So the work's been put into the public domain; but in terms of the scientific paper I'm just trying to come to grips with that right now. (laughs) This could go on for some time. There's a whole stack of other work I've done which I haven't published yet but that needs to be published.

I hope it will be. You're making a distinction there between what you can present publicly and what you present to the scientific community, as if they're almost two separate documents.

In one way they are. The reason why we were employed to do this work is because of the public benefit of it and its benefit to biodiversity or to the agricultural production or public health or whatever, and so that's our immediate concern is to make sure it gets applied for those purposes. Maybe in my case I've seen the scientific publication of it as being of a slightly lower priority. The significance of scientific publication is the peer-review process where you can't just get up and say anything – you can almost do that at a conference, say whatever you like, whereas in a scientific paper it won't get past the referees if you try and do that, so it's an independent measure of the scientific integrity of the work that you've done, so it's an important part of the process; but in my view it's not the first part. That's the more public dissemination of the knowledge is the important part and the scientific publication comes second.

Nevertheless, you're in a fortunate position of being able to pursue the life of a research scientist through your employment.

Yes, it's been a very fulfilling and rewarding job. I've enjoyed it; I'm not sorry I did it.

Was there ever any thought of moving elsewhere or changing hats in any way? I wouldn't have thought you'd become an administrator, for example.

No, certainly not an administrator. There was the lure of moving elsewhere, but that would have meant I would have had to stop doing the projects I was doing now and start other ones. There's also the question of the opportunity: if there'd been a very attractive offer made I might have considered it, but I had professional reasons for staying in South Australia as well as family commitments and so on. All things considered, I'm still here.

There's a while to go yet, too, I'd say. (laughter) Just another aspect of change over time, and coming back to your fox work. You mentioned working with Vicki Linton. When you started there would have been very few females in the professional side of the work, presumably.

Yes, your presumption is quite correct. In fact one of our previous employees basically retired because he wasn't prepared to work with a female. So it was an issue. There are questions that also come into who it is that you're trying to work with, not just within the organisation but external to the organisation, and in dealing with the farming community whether a woman – as with Vicki Linton – was an appropriate choice to make; and in her case it certainly was. She got on very well with that project and got excellent results out of the landholders who participated. But certainly there are gender issues to do with not just our area but probably any area of employment, especially where fieldwork's involved.

So did you do much fieldwork with people like Vicki?

Not with Vicki so much. Most of that work was done by questionnaires. We had over 100 participants, so you couldn't go round and interview them all individually every three months.

That work was done by correspondence. But yes, we go away on field trips together and work collaboratively or cooperatively. If we need extra hands for something, then people would volunteer for that and help out other projects.

It's certainly a marked change to see the number of females involved now with NRM, for example, at board level or doing the work, and yet I haven't actually placed the first … put a name to the first female doing the professional duties through the Commission or through its predecessors.

Sorry ...

I haven't actually traced back to the first female it would have had.

OK. There were a number – they'll be with the regional advisers, we had several females involved there. One of the early names is Ros Solly [our first non-secretarial/receptionist female] is one of the early names I can remember, who wasn't with us for very long. Vicki Linton was another one, who then moved onto the research side, though Vicki was after Ros. You'll have to look back through the records or ask someone like Richard Downward as to [that]. He would no doubt remember them all. (laughter) He supervised most of them, so that would be a fair thing to put to Richard.

It's quite a significant change within the work area. Of course, now you don't have the 'personal assistant' or the 'typist' the way you once had; you're doing your own typing and so on, and I see you slaving away over e-mails and over the keyboard there, typing away.

Yes, yes. It's been a great boost to productivity because you can deal with a lot of these issues yourself in almost the same time as it would take to give the job to someone else. Then of course they've got to do the job. The time frame is just so accelerated for a lot of this stuff, that computing's made our jobs just so much easier and quicker and more productive.

But having a good admin. person is always a help, particularly for someone like yourself going out in the field and so on where you're trying to organise things.

Yes. There's a whole lot of areas of administration that we just don't know anything about, either through training or through experience that we just aren't qualified to do. So you need to have the qualified people for that stuff, so yes, I agree. (laughs)

Definitely sound like a scientist now!

(laughter) I guess I'm a scientist because I prefer not to do those other things.

OK, Bob. That probably rounds out the little bit of what you wanted to talk about …

Yes, sure.

… with the foxes. And I wanted to add a little bit more, some of the little nuts and bolts stuff about what the Commission/Group/Authority, how it operated, but it's all helpful for having on the record and so on. I'll certainly be chasing down the name of the first female at the professional level and the ones beyond then, and if you want to add any more to the story we can do so at the transcript stage.

OK, Bernie. Thank you.

End of interview