

## **30<sup>th</sup> World Congress of the World Small Animal Veterinary Association (2005)**

### **To Kill or Control--Humane Animal Management in a Remote Indigenous Australian Community**

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#### **ABSTRACT**

This presentation explores the unique challenges of animal management in remote indigenous communities and details the content and results of the program being provided to the Maningrida community in northern Australia. Working with the local Community Council, the program provides animal health services involving parasite treatment, population control (surgical sterilization, hormonal control and euthanasia where requested) and pet care education. There is also a facility for humane euthanasia of severely sick or injured animals. The underlying principles of this program are compared and contrasted with those of urban animal management in Australian cities. Connections are made with the experiences of colleagues delivering animal control programs in developing countries.

#### **INTRODUCTION**

Imagine you are faced with an indigenous community where the dog population is out of control. There are too many dogs and most of them are visibly unhealthy, suffering severely from external and internal parasitism, reproducing without restraint and often starving. Because of the remote location, there is no access to normal veterinary services, medications, information or education. The animals live in very close contact with their owners and there are concerns about nuisance, aggression, hygiene and disease transmission from animals to people. Human health and living conditions are poor and the indigenous community is socially dysfunctional as a result of dispossession and interaction with the dominant white culture. Communication is difficult because literacy rates are poor and for most indigenous people English is their third or fourth language. Whilst it is clear that the locals love their dogs and are distressed by their condition, the indigenous people do not share our cultural attitudes to animal welfare and individual responsibility to care for the animals.

Having spent time in several indigenous communities, I have experienced first hand the dynamics of these societies and the close relationship between the people and their dogs. I have also been shocked and saddened by the squalid, disease-ridden condition of the animals involved and the lack of veterinary services. Three years ago, faced with the situation described above, I decided I had to do something about it. The result is that my practices are now providing an ongoing veterinary and educational service to this community.

This presentation explores the challenges of animal management in remote indigenous communities and details the content and results of the program being provided to the Maningrida community in northern Australia. Working with the local Community Council, the program provides animal health services involving parasite treatment, population control (surgical sterilization, hormonal control and euthanasia where requested) and pet care education. There is also a facility for humane euthanasia of severely sick or injured animals. The underlying principles of this program are compared and contrasted with those of urban animal management in Australian cities. Connections are made with the experiences of colleagues delivering animal control programs in developing countries.

## **THE PLACE**

The community of *Maningrida* is located on the northern coast of Australia about 450km east of Darwin, 200km past the famous world heritage area of Kakadu. This means that Maningrida is 3,000km from where I live and practice. It is a large Aboriginal community with a population of about 3,000 people in *the township* and surrounding outstations on traditional land.

Maningrida is about 550 km by road from Darwin. However, as most of the road is unsealed and there are many large rivers to be crossed, road access is only possible for about six months of the year - in the dry season. There is a regular light plane service.

There is no access to conventional veterinary services, preventive health programs, medications or information. There have been occasional brief visits from flying veterinarians, though nothing in the four years prior to the inception of this program. The only way to get veterinary attention is to fly the patient to Darwin (at a cost of \$US200) on a light plane for treatment at a practice there. This is

obviously financially and logistically impossible for community animals. There is only very limited access to the sort of electronic communication (telephone, television, internet) that we take for granted in developed countries.

Maningrida is a coastal community on the eastern bank of the Liverpool River system. This is an area of shallow waters and massive tidal variations. Most of the goods destined for the community are delivered by a coastal barge service of variable reliability.

Like most aboriginal communities, the two things that strike visitors are the rubbish and the dogs. Housing is in very short supply and often of poor quality. This results in severe overcrowding with an average of 17.5 people per house and major problems with the standard of living.

The community is self-governing with an elected Council. They generate their own power, supply water and control sewerage etc. There is a modern medical centre with resident doctors and nurses and a large school (primary and secondary). The community store sells basic food and supplies.

All indigenous communities are different. Maningrida is particularly complex as it is located on the junction of several traditional territories. There are four main tribal groups present and eight major languages are spoken in the community. First contact with white settlers and missionaries was less than 100 years ago. Much of the traditional language and culture is still intact and ceremonies are common. Australian society recognizes traditional ownership and control of this land.

## **THE PROBLEMS**

Maningrida has a population of more than 600 dogs in the township alone. There is also a floating population of 50 to 100 cats and three pigs. The problems are obvious and of real concern--population numbers, animal health and welfare, public nuisance and disease and responsible pet ownership. These are essentially the same issues which must be addressed by any urban animal control program. The scale of the problem is just somewhat different. There are additional complications due to interaction with dominant western culture.

## **Population Numbers**

Indigenous people keep dogs for the same reasons we do. The primary reason is companionship and you can observe the same interactions between people and their canine companions as you would see in any developed society. Dogs are valued as protectors and guardians, both of property in a territorial sense and also to ward off evil spirits. They also serve a practical purpose by assisting in hunting, though not all town dogs go "out bush". Some dogs also have spiritual and cultural significance.

The situation you face in indigenous communities is a dog population out of control. There are too many dogs and with virtually no desexed animals, they are reproducing without restraint. Any bitch that came into oestrous is courted by a large pack of males and is guaranteed to become pregnant. The people recognize the problem but are reluctant to do anything about it. "We have too many dogs, but we love puppies" is a common theme. The short life expectancy of camp dogs encourages people to breed more.

In communities like Maningrida, human overcrowding exacerbates the dog density and population problems. The total number of dogs per capita is not above the Australian average of 20 dogs per 100 people. However, there are typically 17 or 18 people living in each house, and on average there are more than six dogs per house.

Unrestrained sexual activity is obviously a factor in the spread of sexually transmitted diseases such as Transmissible Venereal Granulomas (TVGs), which are seen quite commonly.

## **Animal Welfare and Disease**

There are major animal welfare issues, with many of the dogs visibly unhealthy, suffering badly from skin disease and internal parasites and often emaciated and starving. The dogs seem to spend most of the day scratching and mange mite infestations (especially scabies) are very common. Being a tropical climate, fleas, lice and ticks are found in plague proportions at certain times of the year. Internal parasitism (particularly heartworm, hookworm and roundworm) is a major cause of death and ill-thrift.

None of the camp dogs are vaccinated against any of the common viral diseases and periodically there are outbreaks of parvo viral enteritis and canine distemper. Major trauma is a common cause of death and injury, particularly from road traffic accidents. Septic bite wounds are also common. Abuse of scavenging animals (such as throwing hot water on them) is also a problem.

### **Public Nuisance**

There are no fences and the dogs roam at will, often in large packs. There is a major public nuisance caused by barking, scavenging in rubbish bins and packs fighting over food or chasing bitches on heat. Whilst there is not a lot of overt aggression, territorial fighting and guarding ("cheeky dogs") is a problem and human dog bite injuries occur regularly. The noise makes it difficult for people to sleep at night.

### **Public Health**

Dogs can harbour a long list of parasites and pathogens that can be transmitted to people. These animals live in very close contact with their owners. Whilst there is debate about the actual risk and query about the extent of zoonotic disease, there are very real concerns about general hygiene and disease transmission, particularly skin diseases and diarrhoea. Human health and living conditions are poor anyway; living in close proximity to large numbers of diseased dogs just exacerbates the problem.

### **Indigenous Attitudes to Companion Animals**

Despite the squalour and disease, it is clear that the locals love their dogs. They are regarded as being part of the family and the community at large. The dog ancestor features in the "dreamtime" creation stories and, as with all animals, there is a spiritual dimension to relationships with dogs and their role in indigenous society. For some people this spiritual relationship is such that particular animals are regarded as being family members and connections to the spirit world.

Puppies, kittens and young animals of any species that can be captured in the bush are treated as playthings by the children. The

welfare of these animals is usually severely compromised and they have a short life expectancy.

The people become distressed when their animals are sick or injured and they would like to see something done about the condition of their dogs. However, their culture does not include an attitude of personal responsibility for the condition of the animals or a need to take action.

### **Interaction with Dominant Western Culture**

There is a further layer of complication due to the fact that interaction with white culture has had some negative impacts. The indigenous community is socially dysfunctional as a result of domination and dispossession; this has led to a lack of respect for traditional laws and disintegration of social structures. Communication is difficult because literacy rates are poor and for most people English is their third or fourth language. In this context, cultural sensitivity, winning trust and respect and being prepared to work in partnership with the community are essential prerequisites for a successful and sustainable program.

## **THE PROGRAM**

### **Aims**

The overall theme of the program is "Healthy dogs for healthy communities". Working together with the local community, our aims are:

- To improve the health and welfare of dogs and cats in the community,
- To provide means of managing the large, uncontrolled dog population, with the associated problems of noise, scavenging and attacks on humans,
- To contribute to an improvement in human health by reduction in the transmission of diseases from animals to people, and by education about parasites and diseases in companion animals to help people learn more about their own health and disease prevention.

- Through education and advocacy, to empower aboriginal communities to achieve animal health and welfare standards comparable to those acceptable in the wider Australian community
- To provide the knowledge, training and resources to enable communities to take responsibility for their own dog programs so they can be sustainable in the longer term.

## **Components**

Working with the local Council, the program provides animal health services including:

- Parasite control,
- Surgical desexing and other forms of reproductive control,
- Euthanasia where requested, and
- Pet care education.

## **Community Participation**

Whilst dogs are owned by different individuals, it is the community as a whole that has set up the relationship with the veterinary practitioner. An essential pre-requisite to the development of a viable program is culturally sensitive communication with significant community figures such as elected council members, traditional land owners and "dog dreaming people" (those elders who for traditional cultural reasons have a particular spiritual connection with dogs and who are entrusted with the responsibility for caring for dog related traditional law, cultural matters and ceremonial rituals). Building mutual trust and respect is a critical step in fostering community engagement and commitment. At the heart of this process is the empowerment of communities, their ownership and control of their own endeavours and destinies. Without this, the community will not really support the program and it certainly will not continue when the veterinarian is away.

In our case the Maningrida council decided they wanted to do something about their dog problems. I developed the current program in consultation with the community. The council pays a set fee per day

and I provide my time, expertise, drugs and equipment and do whatever medical or surgical work is required.

### **House Visits**

An integral part of the program is taking veterinary services to each home within the community. At each house discussions are held with the owners, explaining the program, observing each animal and assessing problems. This is also the time to identify which dogs are to be de-sexed or euthanized.

Recording of biometric data is essential for planning and monitoring the success of the program. Dog and cat numbers, gender, de-sexed status, colour and approximate age are recorded and animals are given a body condition and mange score. Any other observations such as degree of external parasites or TVG are also recorded.

As there are more than eight different languages spoken within the community, the help of an indigenous translator is invaluable. With the large population this door-to-door approach takes a considerable amount of time, but taking time to talk to community members, explaining what we are doing and listening to their concerns is essential to building the trust that is required for the program to be viable.

Each dog is then given a piece of bread medicated with ivermectin to treat their mange and intestinal worms. This in itself can be a difficult task as these dogs are often fearful if approached by a stranger (especially of Caucasian descent). They have never been on a lead and there are many "cheeky" dogs, which are known to be aggressive.

The target dose rate for the ivermectin is 300 micrograms per kg. Pieces of bread are prepared in advance in two dosage sizes (for large and small dogs) and then topped with margarine or tinned dog food. Puppies are given one drop of liquid per os. Sometimes a dominant dog will scavenge more than one dose, but toxicity problems are rare.

### **Surgery Suite**

In order to perform de-sexings and other surgical procedures we set up a "surgery" in a prominent area of the community. Rather than setting up an operating area inside a building, we try to pick a prominent outdoor site so that people can see what we are doing and drop by to watch or have a chat. Being exposed to the elements is not as comfortable for the operator, but openness is essential to communication and building trust.

Our surgery table is an old door propped on shelving units. Sometimes we use the back of the vehicle as the operating suite and go from house to house. It sounds quite primitive and in many ways it is, but even under these conditions it is still possible to deliver gas anaesthetics, use monitoring equipment, maintain asepsis and provide pain control.

### **Surgical Procedure**

The surgical procedure typically starts with a visit to the house that has requested surgery. After clarifying which dogs are to be operated on and obtaining permission from the owner, the dog is then caught (by our indigenous helper and the dog's owner) and given an injection of our premedicant combination (equal volumes of 2 mg/ml acepromazine, atropine 0.6 mg/ml and butorphanol 10 mg/ml) at a dose rate of 1 ml per 20kg. This has to be sufficient to immobilise the dog for safe transportation back to our "surgery". We return in 20-30 minutes to collect the dog and bring it back, ensuring it is restrained in the back of the vehicle.

At this stage anaesthesia is administered in the usual manner--barbiturate induction, endotracheal intubation and maintenance on inhalation isoflurane and oxygen. Each patient is given an injection of a non steroidal anti-inflammatory for pain relief and an antibiotic to prevent post-operative infection. For identification purposes each of the desexed dogs is also implanted with a microchip.

Preparation of the patient for surgery is routine, with the exception that the majority of patients have sarcoptic mange and extensive burdens of fleas and ticks. Obviously good aseptic technique is an extremely important factor when working under these conditions, but these dogs are very tough and post-operative infections are rare. Instruments are chemically sterilized in chlorhexidine and we use pre-sterilised plastic drapes. Suture removal post surgery is not an option

because of the difficulties in approaching or handling these dogs and hence absorbable suture material is used for transdermal skin sutures.

The animals are extubated and allowed to recover on the ground until they are able to walk back home. Considering the poor general health of the dogs and the fact that they have not been fasted pre-surgery, the anaesthetic and recovery of each patient is surprisingly unremarkable.

The majority of surgical procedures performed are desexings. Occasionally, severely injured and/or infected limbs may have to be amputated. In addition to these routine procedures we also treat TVGs by surgical debulking of the mass. This is usually not curative, but it does improve the patient's quality of life. Occasionally there is a need to suture fight wounds or perform emergency surgery, such as the dog with an eviscerated bowel that had been attacked by a wild pig.

### **Hormonal Control of Reproduction**

The progestagen "Covinan" (proligestone 100 mg/ml) can be used for short term reproductive control. Administered by subcutaneous injection at a dose rate of 10-33 mg/kg (4 ml/20kg) at 6 monthly intervals it postpones oestrous and prevents pregnancy. In the current program, such drugs are only used to control fertility until the animal can be surgically sterilized.

Other drugs, such the gonadotrophin releasing hormone agonists, may be useful in the future as a means of controlling fertility, but for the present they are impractical because of expense and relatively short duration of activity.

### **Euthanasia**

It is tempting to think that the overpopulation problem could be solved by simply getting rid of a lot of the dogs. However, the concept of mass killing is as distressing to indigenous dog owners as it would be to us, and it just does not produce a sustainable drop in animal numbers.

In the past, responses to population numbers and animal management issues in some remote indigenous communities did involve the indiscriminate destruction of animals. However, when police went into communities and started shooting dogs outright, the communities were traumatized, it generated a lot of mistrust and ill feeling towards the authorities and population numbers soon rebounded to original levels.

The current program recognizes the importance of the role of animals in these communities and the value of the human animal bond. Dogs are now seen in the context of their relationship to the people, not just as pests to be controlled. Long-term reduction in animal numbers can only be achieved when the community desires to have fewer dogs through a combination of breeding fewer puppies and euthanising unwanted animals.

Euthanasia has to be carried out in a culturally sensitive manner. It is important to ensure that the owner wants the dog to be euthanased and that it is not a spiritually significant animal. The dog is first given an intramuscular injection of "Zoletil" (tiletamine/zolazepam) at a dose of 10mg/kg. This is sufficient to induce light anaesthesia and the animal can be removed to a quiet location for intravenous administration of pentobarbitone and subsequent burial.

### **Ongoing Parasite Treatment**

A considerable amount of time and effort has been spent on the training of locals to set up a sustainable parasite control program in the periods between the six monthly visits from the veterinarian. This is well under way with the indigenous Environmental Health Team dosing the dogs orally with ivermectin at approximately two monthly intervals.

Two groups of dogs whose generalized mange did not respond to oral doses of ivermectin were given weekly subcutaneous injections of doramectin "Dectomax" 1.25ml per 20 kg for 6 weeks.

### **Remote Euthanasia Facility**

Ironically, at times there is a great need for euthanasia when animals become seriously sick or injured and veterinary treatment is not

available. This situation raises serious animal welfare issues. It is also very distressing and traumatic for community members to see their companion animals obviously suffering.

Formerly, there were no humane and culturally acceptable means available for safely and quickly euthanasing these animals. The discharge of firearms is not permitted within the community, and using guns for euthanasia is not acceptable to either the community or the staff of the organisations willing to take responsibility for animal control in the community. This situation has been addressed by finding people in the community who have appropriate expertise and experience and training them in the safe and responsible possession and use of injectable drugs and obtaining authorisation to keep a supply of veterinary anaesthetics and euthanasiates in the community.

### **Education and Training**

Dissemination of information and education about animal welfare and disease is a major component of the individual house visits. Because of their traditional hunter/gatherer lifestyle, these people are interested in discussions about mechanisms of disease and treatment.

As discussed above, a major priority has been the education and training of the indigenous Environmental Health Team to set up a sustainable parasite control program in the periods between the visits from the veterinarian.

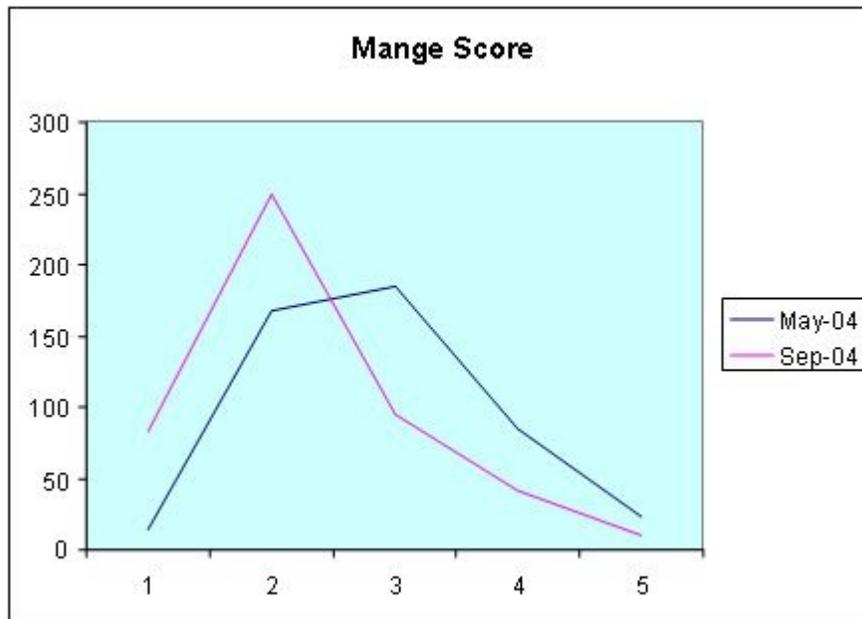
There is still much to be done. In many respects, the future for these camp dogs rests in the hands of children like those who helped in the program. This will be best achieved through animal health and welfare programs in the community school. One of our aims is through education and advocacy, to empower aboriginal communities to achieve animal health and welfare standards comparable to those acceptable in the wider Australian community.

### **THE RESULTS**

Although still only in its second year, the program is already delivering significant results. The dogs are generally in much better condition and both the incidence and severity of mange has dropped markedly. The dogs are much happier and so are their owners.

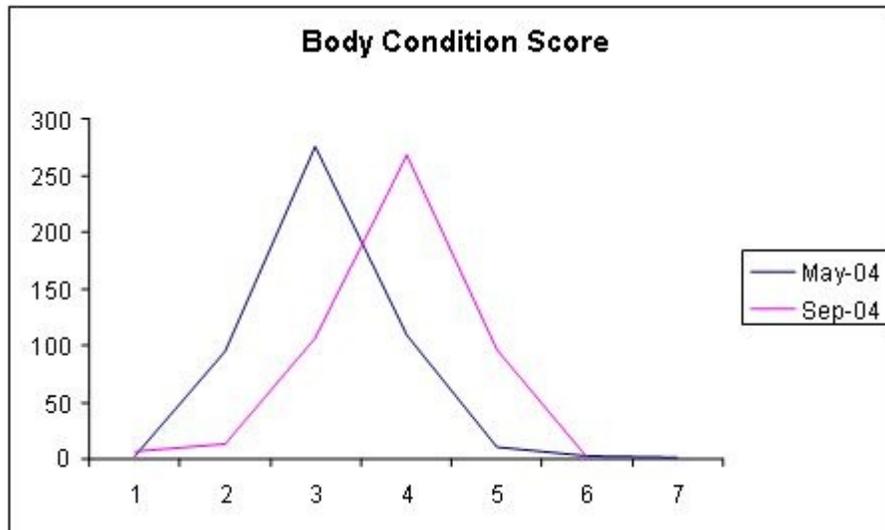
## Skin Disease

Mange score is measured on a five point scale, where 1 means no skin lesions, 2 equals up to 25% of body involved, 3 equals 25% to 50%, 4 is 50% to 75% and 5 means 75-100% of body involved. When the program started, the average mange score was about 3; six months later it was down to 2 and now it is even better. The graph below demonstrates these results.



## Body Condition

Using the Purina nine point Body Condition Score, the average score for the camp dogs was initially about 3. Within six months it had risen to more than 4.



These results are clearly demonstrated by looking at "before and after" images of particular dogs.

### **Population Numbers**

Population numbers have not declined much so far--better health results in increased fertility. However, more than 20% of the dogs are now sterilized, and with further desexings being performed this year we hope that there will be a reduction in the numbers of puppies being born.

As the general health and life expectancy of the animals improves and the animals are seen in a more positive light, there are increasing requests for euthanasia of animals that are diseased or have behavioural problems.

### **Public Nuisance**

With the reduction in skin disease and increased percentage of desexed animals there has been a noticeable improvement in public nuisance with regard to noise levels from barking and fighting and less territorial aggression. However, much still needs to be done in this area.

## **Responsible Pet Ownership**

Following requests from the locals, the community store now sells tick collars. This may not seem much, but to me it is a very significant example of changing attitudes and owners taking personal responsibility for the health of their dogs.

## **AMRRIC**

This type of work can be difficult and is very different to normal small animal practice. Peer support and communication are important to sustained activity in this field.

Animal Management in Rural & Remote Indigenous Communities (AMRRIC) is a non profit organisation formed by private veterinary practitioners providing community dog programs, university staff, indigenous environmental health workers and government public health staff . Working in partnership with indigenous communities, through education, research and practical programs, AMRRIC aims to promote and support the delivery of sustainable veterinary services to enhance the health and welfare of both the companion animals and the people living in these communities.

AMRRIC will not itself run programs, but aims to support private veterinary practitioners in providing sustainable services to indigenous communities and to assist communities in managing existing animal health programs. The development of guidelines for practical programs and bringing together communities and professionals willing to be involved will assist communities wanting to start programs. There is also a role in assisting governments in achieving their legislative requirements in indigenous communities e.g., animal welfare.

There are several educational objectives. The veterinary profession is largely unaware of the need for these services and types of programs currently being delivered. Conferences and seminars can be used to promote best practice regarding programs being delivered. Education is the best way to help communities achieve their animal health and welfare goals. Decision makers have to be informed about the need and possibilities of programs, and there is a need for a state and national lobby group on these issues.

AMRRIC aims to promote and support scientific research on existing programs (such as to assess results) and on subjects relevant to the objectives of AMRRIC e.g., anti fertility vaccines, animal management practices. Through its membership network, AMRRIC will also be a resource link to existing research information for veterinary practitioners and health professionals.

AMRRIC has recently receive some operational funding from the Australian government with the aim of helping to raise the personal health standards of Indigenous people in communities by improving the health of companion animals in rural and remote Aboriginal and Torres Strait Islander communities.

Further details regarding AMRRIC are available on the website at [www.amrric.org](http://www.amrric.org).

## **SUMMARY**

The logistics and practicalities of delivering modern medicine and surgery in a remote location have proved quite a challenge, accentuated by the particular idiosyncracies of working in an indigenous community. However, by working in partnership with the community, ways have been found to work around most of the problems.

The Maningrida program is now in its second year. We have gained the acceptance and trust of the community and they are very positive about the program. When we visit we are overwhelmed with requests for operations and medical treatments. It is very obvious that these people want to care for their dogs.

Initial results have been very encouraging. Skin diseases are now under control and the animals are in much better physical condition. Their general welfare has improved and significant numbers have now been sterilized. Public nuisance has started to abate and there are increasing requests for euthanasia of animals that are diseased or have behavioural problems. There are signs of a change in traditional attitudes to animal welfare and the concept of responsible pet ownership. There is now a facility in place for humane euthanasia in emergency circumstances and an ongoing parasite treatment program being delivered by community members.

The program is definitely making a significant difference to the lives of the dogs and the community. Less obvious but important features of the program are increasing community capacity and individual empowerment by providing access to information and learning opportunities, education for health and enhancing life skills. These factors increase the options available to people to exercise more control over their own health and over their environments, and to make choices conducive to better health for both themselves and their animals. The challenge now is to sustain this ongoing relationship and focus more on education and training.

It is very challenging but rewarding work. Our mission is to try to break down the cycles of disease, suffering and sadness that occur in these communities. I believe that we have gone some way towards achieving this goal, and trust that our experiences and the principles of our program may be useful to those delivering animal control and management programs under similar circumstances in other places.

#### **ACKNOWLEDGEMENTS**

My thanks to the Maningrida community for their permission to show their images and tell their story, and to Austvet, Microchips Australia, Meriel, Pfizer and Virbac for their assistance to this program.

#### **SPEAKER INFORMATION**

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