Guidelines for the Approved Control Technique for Introduced Corellas

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Approvals

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1 Purpose

These guidelines provide advice on the approved trapping method developed by Department of Parks and Wildlife for long term control of introduced corellas in WA. The guidelines may be applied to other pest parrot species such as galahs and sulphur crested cockatoos.

Corellas are intelligent, long lived birds with a good memory. Though it is easy to undertake a one-off take of corellas using a variety of methods, being able to continually take large numbers in an ethical and efficient manner, without putting the public or operators at risk, requires the right equipment, a sound knowledge of the target species and a dedicated effort. Long term success requires operators to be adaptive as birds behave differently at different times and locations.

2 Scope

These guidelines applies to Department of Parks and Wildlife staff, local government and their contractors, other land managers or anyone else involved in introduced corella control.

The method involves attracting corellas to a site with an appropriate food source. When the birds have established a feeding pattern, a purpose designed net is deployed over them and the birds destroyed immediately onsite. All aspects of this control method have been designed to ensure a number of key considerations are met:

- effectiveness in the long term,
- public safety,
- public sensitivities,
- animal welfare, and
- efficiency.

Controlling corellas using other methods (e.g. cannon netting or shooting with shotguns) is likely to cause remaining birds to become trap-shy across their range rendering them harder to trap in the future and prejudicing the long-term effectiveness of the program.

The method herein has been specifically developed to catch and hold large numbers of corellas that are to be destroyed *in situ*. It is not intended to be used to catch large numbers of other bird species, which are to be released after they have been caught. This is due to the risk of injury that could be sustained from being held under the net in close proximity to other birds and subsequent extraction.

This method requires the operator to:

- consider regulations, permits and approvals
- select an appropriate site
- pre-feed the site and monitor bird activity
- capture and euthanase birds
- continue to monitor and maintain sites.

3 Definitions

Non-target species: any species of bird that may be attending the feed site that are not the species approved to be controlled.

Operator: Parks and Wildlife staff or licensed landholder or contractor deploying the net and euthanasing the birds.

Site: the area in which the feed site and catch area are set up (e.g. a golf course).

Catch area: the area over which birds will be caught when the net is deployed.

Feed site: specific area within the catch area where grain or other attractants are placed.

Corella trap: net and hardware used to catch corellas, described in detail in Appendix 1.

Bag (in a net): refers to the amount of slack netting when the net is deployed. For example if the net is taught from corner to corner with no loose netting there is no 'bag' in the net. If a net has no 'bag', birds will be able to walk out the sides of the net without getting tangled.

Grain: Sunflower seeds and wheat are the preferred option, but barley, oats and corn are also readily consumed by corellas and thus grain type may depend on availability. Do not use lupin or canola seeds, which are not eaten by corellas.

4 Equipment

- Grain
- Grain feeder
- Remote sensing camera
- Mobile phone
- Corella trap (see Appendix 1)
- Two x .22 long rifles
- At least 5 ten-round magazines
- At least 200 rounds "Z" Rimfire ammunition with 29 grain projectile, with a muzzle velocity of 770 fps or similar "very low velocity" ammunition
- Hessian (big enough to cover entire catch area)
- Large heavy duty disposal bags (to transport carcasses)
- Personal Protective Equipment: gloves, hand wash, sturdy footwear, sun protection

5 Procedure Outline

5.1 Regulations, Permits and Approvals

5.1.1 Licences

At the time of writing these guidelines, introduced corellas are listed as protected fauna in Western Australia. As such, a Regulation 15 licence to take fauna for public purposes under the *Wildlife Conservation Regulations 1970* must be issued to all Parks and Wildlife employees, local government staff and contractors involved in the taking of these birds. All persons requiring a licence should apply in the prescribed form to the Department's wildlife licensing section (see link to licence application form on the Department's website). Licences must be kept on hand at all times during control activities and produced on request.

No birds trapped under a regulation 15 licence as part of a culling program can be kept in captivity or sold unless specifically authorised to do so, in writing by the Director General. Targeted birds must be immediately euthanased on site and any non-target species released immediately (refer section 6.5). The retention of the bodies or body parts of any euthanased birds is illegal under the *Wildlife Conservation Act 1950*.

5.1.2 Landowner permission

Written permission must be obtained from the owner or occupier of the property where trapping is to take place. This must be obtained before any actions are undertaken.

5.1.3 Firearms licence

A current Western Australian firearms licence is required to use firearms in WA. However, Parks and Wildlife employees who have undertaken and passed a firearms safety course are covered under the Department's corporate firearms licence. All other persons must hold a current WA firearms licence before a Regulation 15 licence to trap the birds will be issued. Applications for a Western Australian firearms licence are administered by the Western Australian Police.

5.1.4 Shoot plans

If you are undertaking control work as a Parks and Wildlife employee on 'CALM land' (Parks and Wildlife managed land), an approved shoot plan must be completed before any action takes place.

5.1.5 Inform police

As part of the shoot plan local police must be notified before using firearms. If you are not a Parks and Wildlife employee and thus do not have a shoot plan, local police must be informed of your intended activities. This must include providing details of the location and the approximate times between which the shooting is to

take place. Police should be advised that it is not possible to specify the exact times during which shooting will occur as this will be dependent upon when the birds are trapped.

5.1.6 Inform land managers

Although landowner or occupier permission must be obtained for the overall operation, the responsible land manager must be advised of each proposed control event for public safety purposes. This is intended to ensure there are no operational impediments to the activity and that enquiries received can be immediately responded to.

5.1.7 Notify neighbours

It may be appropriate to notify neighbours within 100m of the site that they may hear shooting which is being done for the purpose of pest control. Where such notification is deemed appropriate, neighbours should be provided with details as to where and between what times the shooting is likely to occur.

5.2 Site selection and preparation

Site selection is the most important aspect to successful and ongoing bird trapping. Trapping and euthanasing birds using firearms can be dangerous and may cause distress to members of the public who witness the process. As such it is important to consider public access and visibility when assessing whether a particular site is appropriate and where possible sites should be selected to ensure that the discharging of a firearm is not audible to adjacent neighbours.

5.2.1 Public access

Sites should be secure and not freely accessible to the general public. Fenced areas with lockable gates are ideal as they can totally restrict or deny access to all but those involved in the activity. If a completely secure location is not available, knowledge of access patterns (season, timing and purpose) is necessary to determine the potential for public access during operations.

5.2.2 Public view

When trapping, the catch area is to be out of view from members of the general public. Strategic placement of vehicles will help restrict viewing. Choosing catch areas adjacent to non-residential buildings or bushland can also help to restrict views. Screens may also be utilized in some circumstances though this may encourage public curiosity.

5.2.3 Bird numbers

Though preferable, it is not necessary to have large numbers of birds attending the site initially. If at least some birds visit the site they will usually find the grain and encourage larger numbers of birds to visit. Birds can usually be attracted to sites using the pre-feeding method described in section 6.3.

5.2.4 Catch area location

Catch areas should be set up on a flat surface, preferably grass. If set up on an uneven surface birds can escape out the sides of the net when it is deployed.

Catch areas are not to be set up on bitumen or concrete or any other hard heterogeneous surface that may cause bullets to ricochet.

Catch areas should not be set up directly under trees to avoid falling leaves and sticks which may prevent the net from deploying properly.

5.2.5 Catch area size

Catch areas need to have enough space to deploy the net and extend bungees (elastic cords that propel the net forward), and if needed, some space to store grain. If using a 9.5m x 5m net and bungees that extend 10m, an area of around 15m x 20m is required. This will also provide enough space to park cars next to the deployed net as a visual barrier.

5.3 Attracting, Pre-feeding and Monitoring birds

Attracting birds to the site can take a number of weeks and may require a large amount of grain. Be prepared to use over 100kg of grain until the birds have found the site and established a feeding pattern. Once a couple of birds have found the grain they will keep returning and eventually bring more birds to the site. Frequent monitoring of the site is required to give the operator the best chance of getting the highest numbers of birds possible and to be most efficient.

5.3.1 Timing

Corellas tend to have predictable seasonal movement patterns and understanding these are important when deciding where and when to establish a trapping site.

5.3.2 Pre-feeding

Initially grain needs to be spread widely over the entire site. Once the birds are observed feeding in the area continue to spread grain, gradually reducing the area of spread over several days until the grain is only placed in the catch area. Another method to attract birds to the catch area is to run a thick line of grain from the catch area to where birds are regularly feeding. They will feed along the line of grain and eventually feed in the catch area.

As soon as target species are feeding in the catch area, which is now a feed site it is essential that the food is provided continually and that food is always available to visiting birds.

Figure 1 shows an image of a feeder that can be utilised if daily hand feeding is not possible. The feeder needs to be taken out of the catch area prior to a catch as the net cannot be deployed over it. When shifting the feeder, make sure no grain is spilt outside the catch area or corellas may feed there instead of the catch area.

5.3.3 Non-target species

Non-target species such as magpies, pigeons or ducks may also be attracted to the feed site. This can be helpful as corellas will notice them feeding and come to investigate. If non-target species continue to visit the feed site, consider changing the food type to a specialist parrot feed such as sunflower seeds. Generally only parrots and cockatoos can de-husk sunflower seed so this should attract less ducks compared to a feed site with only wheat.

Figure 1 Image taken from a Reconyx Hyperfire HC600 camera set up at a feed site including the time of day. This image shows a feeder that can be used when daily hand feeding is not possible. Note the secure fencing and thick bush in the background to restrict public access and viewing.

5.3.4 Timing and frequency

Pre-feeding should be undertaken daily and is best done by hand. The advantage of this is that it also habituates the birds to human activity at the site. Visit the site each morning and empty a bucket of grain out into the feed site. The amount of grain required each day is dependent on how many birds are attending the site. As a general rule, if there are corellas attending a site, and there is no grain the following morning, there is not enough grain being deployed. If it is not possible to visit the site every day, a feeder can be placed on site. The feeder must be checked every few days to make sure there is sufficient grain. As soon as the grain at the site runs out, the birds will stop coming and the process must restart, resulting in a waste of time and money.

5.3.5 Monitoring

Monitoring is best undertaken with a remote sensing camera, which is activated by movement and provides images with a time and date. Every few days the data card can be removed and images downloaded and reviewed. The images will provide the operator with information on how many and what species are attending the feed site, what time groups are attending the site, bird behaviour at the site, positioning of the birds in the catch area etc. A Reconyx Hyperfire HC600 camera has been used previously (Fig. 1). This will considerably reduce the amount of time the operator needs to spend physically monitoring the site.

If remote sensing cameras are not available, physical observations by the operator are needed. This requires arriving at the site before the birds arrive to feed (pre sunrise and late afternoon). Record the species, numbers, time of arrival and departure. Note the direction the birds approach the catch area. This will assist in correct placement of the trap. The mouth of the trap must face the direction the birds approach to avoid birds walking over the set net and getting their feet tangled.

Examine the grain as this will help determine what has been eating it. If sunflower seeds are being used and the whole seeds are gone, it may have been eaten by non-target species such as ducks and doves. If the sunflower seed has been de-husked it has probably been eaten by a parrot species. Scats, footprints and feathers at the site also help determine what species are attending the site. Avoid spilling grain outside of the feed site as birds will feed on it rather than in the catch area.

5.3.6 Dummy set

In the lead up to the trapping event a 'dummy set' should be utilised. A dummy set is almost a replica of the real trap, but the net is replaced with hessian, moving parts are replaced with blocks of wood and bungees replaced with rope (Fig. 2)

A dummy set is used so that the visiting birds get used to a structure at the feed site so that on the day of trapping, everything appears normal and the birds feed as usual. A net should never be left unmonitored as it can continue to catch birds even if it is furled.

Figure 2 Example of a dummy set. The net has been replaced with hessian, moving parts are replaced with blocks of wood and bungees replaced with rope. Corellas are shown feeding on grain in the feed site within the catch area.

5.3.7 Taking the catch

This requires setting a bungee loaded net that when released covers and captures a flock of birds in the catch area. At least two operators should be on site when taking the catch (see Appendix 1 for details of the trap).

5.3.8 Timing

Determining the best time to deploy the net is important to ensure the catch is most effective. It should be based on the monitoring undertaken during the pre-feeding phase. If targeting a population of birds numbering less than 50 it may be possible to get most of the flock with one catch but if targeting a large group it is unlikely that all birds will be taken in the initial catch. Catches of over 100 birds are difficult to manage and should probably not be attempted unless prepared to do so with additional support on site, as some ethical issues may arise with birds being under the net too long, or being so densely packed that they start to bite each other.

Corellas generally feed at sites in the early morning after they have left their night roost and then again at mid to late afternoon before they go back to roost. Trapping has been equally successful in afternoons and mornings. Being familiar with the behaviour of the target species will help you plan when to trap. Generally the bulk of the corellas will sit in a tree away from the trap until one bird moves into the trap zone then others will quickly follow.

Birds which escape from under the released net or have witnessed others being trapped will become trap-shy to some degree. Trap-shy birds can be enticed into the trap zone with the coaching of others but it may require reverting back to the pre-feeding phase for 1-2 weeks to allow them to regain their confidence in feeding at the site.

5.3.9 Placement

For morning catches, the corella trap needs to be set up and operators in position before sunrise and before birds arrive. If birds encounter people near the site they may become suspicious and be hesitant to enter the trap zone. The best place for the operator to position themselves is about 100-200 meters away with a clear view of the catch area and net. It is best to be viewing the catch area with binoculars from the side so you can see how many birds are actually in it and if any are standing on the net. The net should not be released if birds are standing on it as this may cause a mis-fire, possible injury to the bird, and scare the other birds away.

5.3.10 Final checks

Immediately before the net is released:

- Do a final check of the surroundings making sure there are no people close by that may witness the catch.
- With the use of binoculars, ensure that no birds are standing on the net and that there are no or minimal non-target species in the trap zone.
- Nets should not be deployed if any threatened or endangered wildlife are in the trap zone, or if there are a large number of non-target species.
- Ensure you are ready to immediately euthanase the birds and have all equipment at hand to do so, including extra loaded magazines so you don't need to re-load while birds are under the net. Maintain the firearm in a rendered safe state until you are ready to euthanase the first bird.

5.3.11 Deployment

Watch closely as the net is deployed to see if it travels freely without snagging and whether or not the birds are securely held. If birds are escaping, the side strings of the net may need to be tightened or extra bag may need to be added to the net.

5.3.12 Non-target removal

As soon as the net is deployed, get to it as quickly as possible by either driving or walking fast (never run with a firearm). Look for and take note of the position of any non-target species before covering the net with hessian to calm the birds. If any non-target birds are at risk of being injured they should be removed immediately, if not at risk they can be left until the last of the target species is euthanased and then they can be removed.

The hessian is best deployed by two people. Each person holds a corner while walking it over the entire catch area.

5.4 Euthanasing the birds

Netting large numbers of corellas can be stressful for both the birds and the operators. Trapped birds must be euthanased using the most effective and humane method possible, with minimal delay. Personnel involved in the euthanasing process must be prepared to operate in an environment where birds are struggling and vocalising loudly. Such a situation requires a methodical approach:

- The hessian is peeled back exposing a small number of birds.
- Position the birds to be shot (see section 6.5.1).
- Shoot the birds one at a time and confirm it was a lethal shot before moving on to the next.
- When exposed birds have been euthanased, peel the hessian back and repeat the process until all the birds under the net are euthanased

It is the responsibility of everyone on site to ensure the birds are dealt with humanely and if anyone observes a shot bird that is not dead they inform the shooter immediately. For safety reasons no more than two shooters should be operating at one time.

5.4.1 Positioning

Personnel involved in shooting must wear appropriate PPE including steel capped, closed footwear. Each bird is to be manipulate into a safe shooting position so that the bird's chest is clearly exposed. The amount of pressure placed on the bird needs to be enough to immobilise it without crushing the bird. Once it is immobilised, a shot can be placed to the heart area at point blank range. A follow-up shot to the head is required if the bird has not immediately succumbed to the initial shot. Although birds are restrained under the net, their heads are still free to move and accurate shots to the head may be difficult. During this procedure, the muzzle of the firearm must remain pointed at the ground and shooters must always be aware of foot/boot locations when discharging firearms. Where possible, birds which are biting each other should be shot first.

5.4.2 Extraction

Once all target species birds under the net are confirmed dead and all non-targets have been released, bodies can be extracted. At the point of extraction, birds undergo a final check for any signs of life. Check every bird for corneal reflexes in the eyes or grasping feet when touched.

Extracting birds from the net can be difficult. The preferred extracting process follows the methods described in the Australian Bird and Bat Banding Scheme's Banding manual (Lowe 1989). Start by exposing the belly of the bird, extract the legs, then the wings, then the head.

5.4.3 Data collection and disposal

Collect all data required to satisfy licence requirements, such as the number of deceased birds.

Bodies are to be disposed of in accordance with local regulations. This is to be determined with local authorities before a catch is taken.

NOTE: This method is designed to suit this specific purpose. The method may not be suitable for other purposes.

5.5 Site Maintenance

Site maintenance is important and should be carried out throughout the trapping period. Birds prefer to feed on good quality grain on a dry surface. If there is too much grain on the ground it can go rotten, especially if it gets rained on. If the grain goes rotten, birds will be less likely to feed on it, so shovel it all out and start the feed site again. If using sunflower seed the husk that builds up needs to be raked up and removed from the catch area. Sticks, leaves and grass runners can get caught up in the net causing a misfire, so rake the catch area thoroughly before setting up a net.

6 Ethical Considerations

The risk of impact to non-target species is minimal if this method is followed correctly. The impact to the target species is considered as humane as possible if the methods outlined here are adhered to.

6.1 Shooting

Shooting is the most appropriate method of euthanasia when using the corella trap. Shooting is a quick and effective means to humanely euthanase animals and in this case the most practical method available. Chest shots are required because an accurate head-shot cannot be achieved while the birds are moving their heads around. A shot to the heart stops it functioning and the bird loses consciousness rapidly. Shooting is only to be carried out by operators who are experienced and skilled in the use of firearms and only with a .22 Long Rifle "Z" Rimfire ammunition with 29 grain projectile, with a muzzle velocity of 770 fps or similar approved "very low velocity" ammunition.

6.2 Extraction

Incorrect extraction techniques can injure non-target species, therefore extraction of live non-target birds is only to be carried out by people with recognised appropriate training and/or experience. Extractions must be fast and as stress-free as possible. If at any stage during the extraction process the circumstances increase the potential for human or animal injury to an unacceptable level, the netting around the bird should be cut for an easier extraction. Ensure no netting is left on the bird after cutting. Birds should only be handled during extraction for as long as it takes to extract them. They must be released as soon as they are extracted. Improper

restraint, especially when dealing with a stressed and frightened animal, can lead to major physiological disturbances. If any non-target birds are injured during the trapping or extraction they should be treated accordingly as with any other injured wildlife, as outlined in Parks and Wildlife's Standard Operating Procedure First Aid for Animals (SOP No 14.2).

7 Competencies and Approval

Table 1 Competency requirements for capture of corellas

Competency category	Competency requirement	Competency assessment
Wildlife licence	Licence to take fauna for educational or public purposes (Regulation 15) Or Damage Permit	Provide licence/permit number and conditions *Note: it will be necessary to demonstrate all of the competencies listed here in the licence application*
Firearms licence	Current Western Australian firearms licence And / Or Current DPAW corporate firearms licence holder	Provide licence number and date of expiration Provide licence number and date of expiration
Shooting experience	Experience in shooting with firearms And Experience in shooting bird species	Personnel must be able to demonstrate confidence in using firearms in the manner prescribed Personnel must have prior experience in shooting birds or other small wildlife
Knowledge of bird species	Relevant knowledge of species biology and ecology	Personnel must be able to correctly identify the likely target and non-target species to be encountered at the site/s being studied. This knowledge may be gained by sufficient field experience and/or consultation of field guides and other literature. Estimated total time in field: minimum 1 year involved with bird identification.
Animal handling and processing skills/experience	Experience in handling birds	Personnel must demonstrate their experience in handling those species likely to be encountered. This experience is best obtained under supervision of more experienced personnel. Written references may be required.

8 Occupational Health and Safety

It is recommended that a job safety analysis be undertaken prior to undertaking bird trapping. This safety analysis should include the following considerations.

A first aid kit must always be carried in your vehicle. You must always be aware of your own safety and the safety of other participants or observers during the activity.

Personnel must have an operational mobile phone or radio available and a contact point arranged for emergency communication should assistance be required.

8.1 Firearm safety

A review of firearm safety procedures should be carried out before using firearms.

If Parks and Wildlife personnel or volunteers are injured an "Incident and Near Hit Notification" form must be completed and forwarded to Parks and Wildlife's Risk Management Section as soon as possible.

8.2 Animal bites and scratches

Care should be taken when handling any live animals to avoid bites or scratches. All inflicted injuries (even superficial ones) should be appropriately treated as soon as possible to ameliorate possible allergic reaction, prevent infection and promote healing. Operators must be protected by current tetanus immunization in case of infection.

8.3 Zoonoses

There are a number of diseases carried by birds that can be transmitted to humans (e.g. zoonoses such as psittacosis (chlamydiosis), aspergillosis, erysipelas, yersiniosis and salmonellosis). All personnel must take precautions to minimise the risk of disease transmission to protect themselves. Regular hand washing using antibacterial gel is advised and the wearing of disposable face masks to avoid inhaling airborne infected material and contaminated dust is recommended particularly when dealing with the carcasses of euthanased birds. More advice on minimising disease risk is contained in Parks and Wildlife Standard Operating Procedure 16.2 *'Managing Disease Risk in Wildlife Management'* (http://www.dpaw.wa.gov.au/plants-and-animals/monitoring/96-standards/99-standard-operating-procedures).

8.4 Allergies

Some personnel may develop allergies when they come in contact with animal materials such as dander (a fine feather dust produced by cockatoos). Personnel known to develop allergies should wear gloves when handling birds, long sleeved pants/shirt and a face respiratory mask. People with severe allergies associated with

birds, with immune deficiency diseases or on immunosuppressant therapy should not engage in the handling of wildlife.

9 Relevant Standard Operating Procedures

It is recommended the following Department of Parks and Wildlife Standard Operating Procedures also be consulted when proposing to undertake corella control. Publically available Parks and Wildlife SOPs are available at: http://www.dpaw.wa.gov.au/plants-and-animals/monitoring/96-standards/99-standard-operating-procedures

SOP 15.1 Humane Killing of Animals Under Field Conditions in Wildlife Management

SOP 14.2 First aid for animals

SOP 16.2 Managing Disease Risk in Wildlife Management

SOP 10.2: Hand restraint of wildlife

SOP 9.6: Hand capture of wildlife

10 References and Further Reading

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Appendices

Appendix 1

Corella Trap Description and Operation: Shock Cord Net

Overall description of trap

This trap is comprised of a rectangular shaped net, which is propelled forward by the use of elastic shock cords. The shock cords are anchored at one end to short star pickets and at the other end are attached to the leading edge of the net, which flies forward over the catch area. In order to get up and over the target birds, the leading edge of the net rides up poles, which are placed at an angle of between 30 and 45 degrees and are about 4.5 metres long. Stainless steel rings are used to connect the net to the shock cords and ride up the poles without snagging.

The guide poles must be shorter than the length of net travel so that the net can leave the poles and fall to the ground and terminate at full stretch under tension of the shock cords.

To set the trap, the rings (with the leading edge of the net and the shock cord attached) are placed on the guide poles and drawn down to the two release mechanisms on either side of the trap.

The release mechanism consists of a calliper-type bow-string release connected to a solenoid, which is energised by a battery pack. The power is delivered to the solenoid when a switch closes. The switch is activated by way of a remote control transmitter and receiver.

Description of trap components

The net

The size of the net should not exceed a width of 10 metres and a length/travel of 6 metres otherwise the shock cords can't propel it fast enough to be effective. The mesh size must suit the target species to ensure the birds mesh readily. Mesh size is measured by the box size method, not the length of the diagonal stretched out. Netting with a mesh length of 40mm (i.e. the length of one of the four sides that make up the mesh square) will suit large parrots and galahs while netting with a 50mm mesh is suitable for corellas.

Guide poles

The poles used should be in two sections, each 2.4 metres long to allow transportation in a conventional vehicle. The first section should be 19 mm square aluminium and is inserted into the release mechanism. The second section of 16 mm round tube aluminium is made to slide a short distance inside the square section.

Release mechanism

The release mechanism must hold and lock the rings in place under substantial pressure. To achieve this, calliper style bow-string releases are used. The bow-string release is set off by a small pull-type solenoid.

Remote controlled trigger and power supply

In order to set the trap off at a considerable distance, a remote control system designed for model cars or planes is used. The remote control transmitter sends a signal to its receiver, which in turn activates a servo arm.

The servo arm closes a circuit delivering power to the solenoid, which retracts and releases the bow string release sending the net forward up and over the catch area.

The power supply is 3 x 6 volt batteries (18 volt) used to energise the 12 volt solenoids.

Trap setting procedure

The trap setting procedure starts with choosing and preparing the trap site. This site must be free of obstructions (vegetation, fences etc.) and the ground must not have sticks or leaf litter that will snag or foul the net.

Once the site is cleared the net can be laid out on the ground to its full extent. The release mechanisms are placed on either end of the net edge that is pegged down.

The battery pack is now connected and the remote release system tested.

The first guide pole section can now be inserted into the release mechanism and the shock cords are put in place, at the front of the net, under slight tension. The leading edge of the net can now be drawn back to the release mechanisms (via the guide poles) under tension and locked in place. The body of the net is now folded neatly back at the pegged edge and the terminal sections of the guide poles fitted.

The trap is now ready to go.

Figure 3 Catch area with the net set and ready to fire. Observations have determined that birds using this site approach from the left and this is the direction the net will fire. Note: the feeder has been moved out of the catch area, but not completely removed so that the site appears similar to what the target birds are used to.

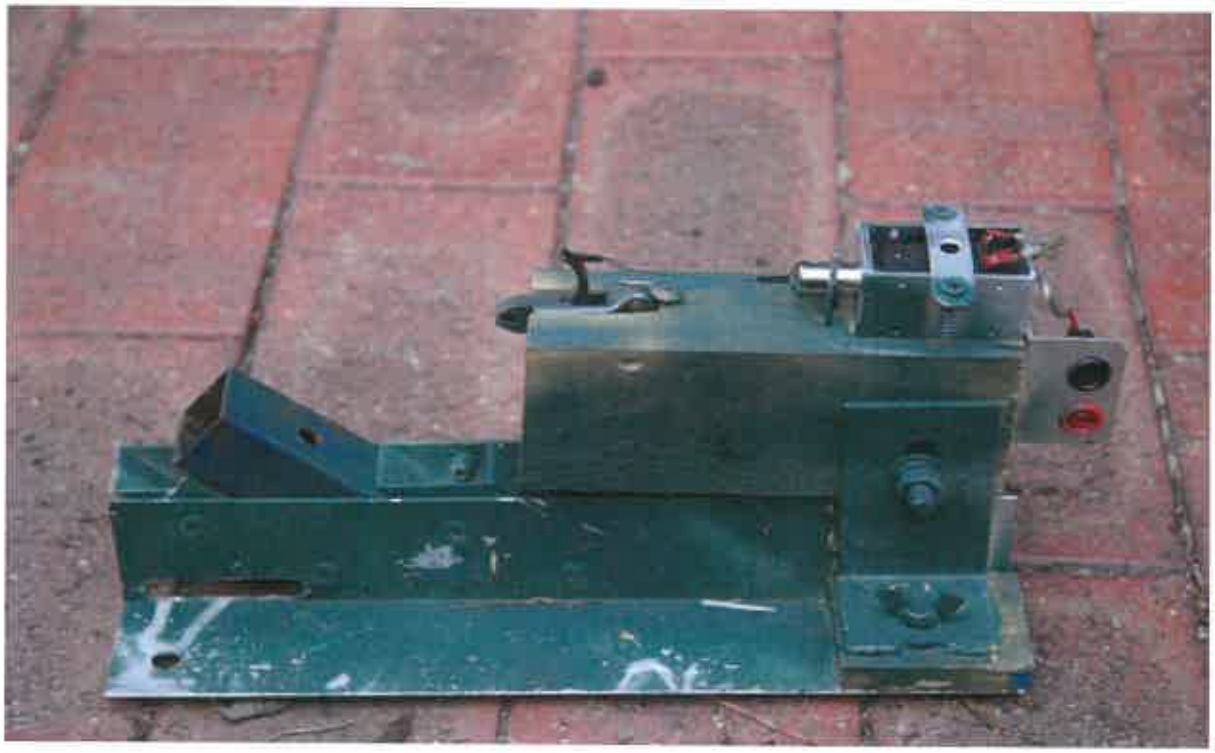

Figure 4 The release mechanism showing from left to right, the guide pole base set at a predetermined angle, the bow-string release, the solenoid and the electrical plug ports.

Figure 5 The transmitter (left), and the receiver/battery pack (right). The battery pack, servo and receiver have been combined into one unit for convenience.