Exotic Corella Working Group
Potential Control Options

Control Options	Description	Requirements	Pros	Cons	Viable
Limit access to food / water	Dispose of fruit which has fallen from trees, control weeds[1] Signs discouraging the feeding of birds including the reasons may assist[5] Some of the nuisance problems originate from people deliberately feeding birds[9] Damage to buildings and fixtures most often occurs in areas where residents are providing food for the birds – stopping feeding may be all that is required to move the birds on[9] Flocks use regular flight paths and repeatedly return to favourable feeding sites[9] Their preferred food is a weed species – onion grass[9] Cockatoos may be attracted to the undigested grain in cattle droppings. Regularly cleaning up droppings may limit population growth[9].		Can reduce bird numbers over time[1] Can reduce concentrations of birds in the vicinity of farm (residential?) buildings[1]	Requires continued attention over a long period to be effective[1] Food sources of corellas are many and dispersed and therefore removing food sources is not feasible[12]	Y
Provide alternative food	Place far from crop, birds move to undisturbed alternative. Continue scaring at crop[1] Providing an alternative food source at sowing time (autumn and winter in the south) should not lead to an increase in population, because it is not a time of food shortages for them[4] Successful features of decoy foods include: -early ripening before crop becomes attractive -equal or greater nutritional value -on a bird flight path (etc)… [4] Opportunistic users of food sources[9] When birds see other birds feeding below, the flock will join those birds[9] Dead Little Corella's were useful as decoys to attract other corellas[12] Their preferred food is a weed species – onion grass[9]	Decoy feeding should be at least 500m from crop[11]	In blue gum plantations, somewhat effective on Australian ringneck, but unknown effectiveness against red-capped parrots[1]	Decoy food supply must always be available during the damage season or birds could shift back to the protected crop[1] Decoy feeding is not always successful over repeated years	Y
Poisoning	Illegal under the Wildlife Conservation Act 1950[1] There is no chemical approved for the control of Corellas[9]			Crop contamination threatens markets[1] Other non-target species may be affected[1]	N
Shooting while roosting	Only legal method of destruction(?)[1] Destruction should be last resort after all other control options have been attempted[9] Breeding birds are quiet in comparison to summer flocks and may therefore go undetected in the absence of intentional surveys[9]	Damage Licences may be required from DEC[1] Firearms must be licensed[1] Require license or permit issued under the Firearms Act 1973[10]	Humane if properly carried out[1] Effective when used intensively and when combined with other methods[1] Shooting is considered humane and efficient option for control[9]	Must be applied intensively[1] Not suitable in built-up areas or very small farms[1] Usually targets immature birds, many of which die anyway[1] May draw criticism[9] Able to make impact on large flocks? (no ref)	N
Cannon netting / trapping:	Illegal without special permit from DEC[1] Live trapping is allowed in some parts of the lower south-west to reduce damage by some species[3] – where and which species? Requires understanding of daily and seasonal	Trapping requires license from Nature Protection Branch of DEC and should follow national guidelines 'Trapping of Pest Birds'[9] South Australian 'Code of Practice	Can be an effective means of removing over-abundant birds and breaking up large flocks habitually feeding in a area[9] Once birds netted at a site,	Not economically viable for protection of low value crops[7]. Walk-in cage traps have limited potential[9]	Y

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	movements of the flocks including feeding habits, flock structure (including presence of non-target-species), number of flocks, roosting locations and flight paths[9]. Feeding prior to netting is needed to entice birds to feed confidently before releasing a net[9] Best applied in controlled site with no public access[9] Any non-target birds trapped must be released unharmed as soon as possible[9] Trapping to be avoided at times when birds are nesting and dependent young are present[11]	for the Human Destruction of Flocking Birds by Trapping and Carbon Narcosis' could be referred to[11].	others in a flock are likely to leave the area and not return[9]		
Shoot at close range with low powered rifle	Open season can be gazetted for problem native birds which enables birds to be shot without damage license from DEC[3]. Open season does not apply to Bunbury region[6]. The goal of euthanasia is to use human methods to produce a painless, rapid death and to avoid exciting or alarming the animal[8] Destruction should be last resort after all other control options have been attempted[9] Dead birds cannot be used for a secondary purpose, sold, swapped or traded[11]	Require license or permit issued under the Firearms Act 1973 to shoot pest birds[10] Individuals must comply with the Animal Welfare Act 2002[8] Euthanasia method employed should follow 'Euthanasia of Animals Used for Scientific Purposes' (Reilly, 2001) [8] SEWPAC have standard operating procedure for humane capture, handling, and destruction of pest animals[8]. OSH requirements of handling animals[8].		Shooting appears to be ineffective for reducing large population of Corella's though it may be effective in managing/eliminating a few problem birds or small flocks[3]	N
Asphyxiation	The goal of euthanasia is to use human methods to produce a painless, rapid death and to avoid exciting or alarming the animal[8] Destruction should be last resort after all other control options have been attempted[9] Use carbon dioxide administered from a pressurised cylinder using close fitting plastic mask[9] Dead birds cannot be used for a secondary purpose, sold, swapped or traded[11]	Individuals must comply with the Animal Welfare Act 2002[8] Euthanasia method employed should follow 'Euthanasia of Animals Used for Scientific Purposes' (Reilly, 2001) [8] SEWPAC have standard operating procedure for humane capture, handling, and destruction of pest animals[8]. Consider OSH requirements of handling animals[8].	Fairly quick – 20 seconds [redacted]	May draw public criticism (no ref) Victorian trapping and gassing of 100,000 birds cost over $1m[12]	Y
Live export of birds	Illegal under federal legislation and international agreements agreement[13] Wild-caught birds make poor pets and often die in transit[1] – estimated 17% of wild-caught birds exported to USA die [13] Juveniles that may make suitable pets often die in the wild and therefore export of juveniles will not reduce populations[13] Some countries will not accept pest species as they			Substantial monetary outlay is required to establish an effective system of regulation (inspection, policing, administration) for exports[13] As birds enter the market, prices and demand drop[13]	N

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	can become pests in these foreign environments[13] Statistics indicate 'pest' species are rarely involved in smuggling[13]				
Release to natural habitat					
Scaring	Involves audible, visible, physical or chemical means to discourage/frighten birds so that they move to another site[2] Acoustic and visual scaring devices commercially available include firearms, electronic noisemakers, recorded bird distress and predator calls, gas fuelled exploders (gas cannons) and motorcycles[10] Ineffective when used in isolation[2] Most effective when used in combination[1] Firing intervals should be changed frequently[2] Deterring birds from a feeding area should occur when 'scout' birds arrive at the site[9] Hand-held lasers visible in low light conditions may be useful in deterring some species[10] White noise has been used to confuse birds that vocalise to maintain group cohesion during feeding[12]	May require license or permit issued under the Firearms Act 1973[10]- though may not if considered 'problem bird'[2].	Humane and safer than shooting in built-up areas[1] Scaring backed up with shooting can be effective when used intensively[1] Simulated kites of birds of prey can be effective in small paddocks[9] Birds do not become accustomed to lasers[10] Model Little Corellas in alert posture may be effective at deterring other birds[12]	Often costly[2] Must be applied intensively and with other methods to be effective[1] Scarers may breach noise regulations and crackers can be a minor fire risk[1] May be time consuming due to constant surveillance – birds should not develop a habit of feeding – they should be scared as soon as they approach[2] and level of wariness should be maintained by using scaring throughout the year[2] Corellas can become familiar to simulated kites of birds of prey[9] Noise generating devices may exceed maximum levels prescribed under the Environmental Protection (Noise) Regulations (1997) [10]. Audible sounds may cause pain and sometimes sickness[12] – unlikely to be socially acceptable. Birds may associate sound with device (so they should be installed with camouflage, placed pointing downwind, and raised off the ground)[10] Association between guns and source of food may occur if guns visible[2] Some electronic alarm/distress calls are thought to be considered useful only in the short terms as a new stimuli rather than as a distress call[12] Corellas used to urban sights and sounds are unlikely to be concerned about new visual devices deployed near their roosts[12] Audible scaring devices contribute noise[12]	Y
Protection of assets e.g. anti-bird netting	Enclose crops with temporary or permanent netting[1]	Require appropriate sized netting	Effective, long term and humane[1]	High initial capital outlay[1] May obstruct farming practices and require maintenance[1]	
Encourage birds of prey	Install perching poles, protect native vegetation which provides nesting sites[1]	Anti-coagulant rodenticides must be used carefully so as not to affect birds of prey[1]	Low cost solution[1]	Must be combined with other control measures[1] The use of trained birds of prey has been reduced due to many factors limiting their use[12]	
Repellents	Chemical applied to food Primary repellency - unpleasant smell or taste, or pain or irritation[12] Secondary repellency – conditioned aversion to food as it makes them ill[12] Alpha-chloralose – short term coma		Alpha-chloralose[12]: -non-target species can be revived	Chemical repellents do not appear to be effective against birds[1] – thought to be due to fact birds have different sense of taste to mammals[2] Unsuccessful as birds don't ingest materials – they chew them[12] Restrictions / prohibitions for some products[1] Alpha-chloralose[12]: -can take considerable time for onset of narcosis and sufficient immobilisation to enable capture (12-60mins for Little Corella) Alpha-chloralose[12] -cockatoos may be reluctant to eat seeds coastaed with this -it is difficult to ensure a sufficient does to immobilise birds	

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Screening	Screening crops and vision barriers exploit the requirement for cockatoos to have a clear line of sight when feeding in a flock[11]				
Fertility	Collection of eggs			Not practical to locate and therefore remove eggs from majority of nests in Little Corella's to prevent inhibiting of sufficient recruitment due to their dispersal[12]	

Cited References:
[1]Department of Environment & Conservation. Fauna Notes No. 18 Options for Parrot Control.
[2]Department of Environment & Conservation. Fauna Notes No. 2 Scaring and Repelling Birds to Reduce Damage.
[3]Department of Environment & Conservation. Fauna Notes No. 9 Destruction of Birds to Reduce Damage.
[4]Department of Environment & Conservation. Fauna Notes No. 13 Decoy Feeding.
[5]Department of Environment & Conservation. Fauna Notes No. 13 Limiting Access to Food to Reduce Bird Damage.
[6]Department of Environment & Conservation. Fauna Notes No. 20 Little Corella.
[7]Department of Environment & Conservation. Fauna Notes No. 3 Netting to Reduce Bird Damage.
[8]Department of Environment & Conservation (2007) Prevention and Control of Damage by Animals in Western Australia:
http://www.agric.wa.gov.au/objtwr/imported_assets/content/pw/vp/bird/damage_manual.pdf
[9]Department of Environment & Conservation (2007) Prevention and Control of Damage by Animals in Western Australia – Corellas and Other Flocking Cockatoos:
http://www.agric.wa.gov.au/objtwr/imported_assets/content/pw/vp/bird/cockatoos.pdf
[10]Best Practice Guidelines for Bird Scaring in Orchards - noise and threatened species (no year provided) Black Cockatoo/Fruit Protection Technical Advisory Committee
http://www.agric.wa.gov.au/objtwr/imported_assets/content/pw/vp/bird/best_practice_guidel_16684b.pdf
[11]Department for Environment and Heritage South Australia (2007), Little Corella Resource Document:
http://www.environment.sa.gov.au/Plants_Animals/Abundant_species/Little_corellas_other_flocking_birds
[12]Managing Impacts of the Little Corella on the Fleurieu Peninsula (2010) Alexandrina Council (South Australia):
http://www.alexandrina.sa.gov.au/webdata/resources/files/Managing_Impacts_of_Little_Corellas_-_Ian_Temby_report.pdf
Associated Alexandrina resources available from: http://www.alexandrina.sa.gov.au/site/page.cfm?u=1862.
[13] Department of Environment & Conservation, Fauna Notes No.14 Trapping and export of native animals

There seems to be an order of interventions, starting from minimal disturbance through to invasive:

1. Monitor feeding habits, flock structure (including presence of non-target-species), number of flocks, roosting locations and flight paths;
2. Reduce current food source by requesting residents to not feed the birds, requesting Turf Club clean up horse droppings, ensure onion grass not exposed by Parks and Gardens Department (how?).
   - Resident feeding to be enforced by local government authority local laws
   - Target residents where birds are feeding/nesting
   - Install screening if feeding in open areas
   - Determine likely alternative food source if these sources removed

   It is assumed that some reduction in birds will result from this intervention, however due to large size of flock it is not unreasonable to expect that many will still inhabit area due to other food sources, and other benefits in area (e.g. roost sites etc).
3. Scaring from current sources of food and roosting sites
   - Simulated bird of prey balloons
   - Lasers – for night time roost sites

   It is assumed that by scaring the population, they will only be displaced, and in order not to relocate the problem, the source of the issue should be treated – that is the introduced species should be eradicated or at least reduced to acceptable numbers
4. Entice population to area of alternative food source where netting can occur
   - Alternative food source, should be of high caloric content, be on a flight path etc
   - 'scout' birds should be discouraged from other sites using scaring techniques
   - Alternative food source should not encourage roosting at the site, and should be away from public view
5. Net and euthenase population
   - The netting of the animals should be done to maximise its efficiency as birds will not return to this site after this has occurred – displacement of problem likely to occur
   - The use of the birds once euthenased should be maximised – the ability to use the birds for scientific research or another use would be beneficial to maximise positive outcomes of this negative event.
6. Repeat process for subsequent years.