

Feral cat management and environmental approvals

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Terrestrial Ecosystems



Outline

- * Feral cat management at all stages of **mining**:
 - * EIA
 - * Operations; and
 - * Mine closure
- * Suggestions for going forward



Pre-approvals

- * Based on 0.27 cats/km² and a mean mining tenement size of 5.1km² (but many mines are on multiple tenements), there is approximately 1 cat/mining tenement
- * Cat diets include frogs (44/yr), mammals (393/yr), reptiles (225/yr) and birds (129/yr)
- * So, cats are impacting the native fauna before exploration and mining occurs

- * Mean 44 frogs consumed by each cat each year Woinarski et al. (2020) Predation by introduced cats *Felis catus* on Australian frogs: compilation of species records and estimation of numbers killed, *Wildlife Research*
- * Mean of 393 mammals consumed by each cat each year Murphy et al. (2019) Introduced cats (*Felis catus*) eating a continental fauna: The number of mammals killed in Australia, *Biological Conservation*
- * Mean of 225 reptiles consumed by each cat each year Woinarski et al. (2018) How many reptiles are killed by cats in Australia? *Wildlife Research*
- * Mean of 129 birds consumed by each cat each year Woinarski et al. (2017) How many birds are killed by cats in Australia?, *Biological Conservation*

Pre-approvals surveys and assessments

- * Feral cats are rarely addressed:
 - * In pre-approval surveys (i.e. sometimes recorded, but seldom a focus)
 - * As a significant threatening process to vertebrate fauna
 - * As requiring operational management as an approval condition
 - * In fauna management plans



Mining operations

- * Cat abundance increases around infrastructure and waste management facilities
- * Mine site cats include putrescible material in their diet



Mining locations	Cat #	Comment	Source
Plutonic	8	Cages and foot-hold traps, diet native mammals	Hamilton & Algar (2003)
Plutonic	5	Cages and foot-hold traps, diet native mammals	Hamilton & Algar (2004)
Granny Smith	49	Cages and foot-hold traps, diet native mammals	Onus, et al. (2011)
FQM Ravensthorpe	6	Foot-hold traps, native mammals, invertebrates and food scraps	APMS (2019)
Ravensthorpe	21	Cage traps, mammals	TE 2017
Higginsville	4	Cage traps, food scraps	TE 2021
Coolgardie	2	Cage traps, food scraps	TE 2021
Coolgardie	11	Cage traps, food scraps	TE 2021
South Kalgoorlie	5	Cage traps, food scraps	TE 2021
Pilbara	4	Cage trap, mammals and food scraps	TE 2022
Pilbara	1	Cage trap, mammals and food scraps	TE 2022
Pilbara	3	Cage trap, mammals and food scraps	TE 2022
Pilbara	5	Cage trap, mammals and food scraps	TE 2022
Pilbara	5	Cage trap, mammals and food scraps	TE 2022
Laverton	4	Cage trap, mammals and food scraps	TE 2022
Laverton	1	Cage trap, mammals and food scraps	TE 2022
Laverton	2	Cage trap, mammals and food scraps	TE 2022
Coolgardie	4	Cage traps, food scraps	TE 2022
Coolgardie	5	Cage traps, food scraps	TE 2022
Coolgardie	4	Cage traps, food scraps	TE 2022
Coolgardie	8	Cage traps, food scraps	TE 2022
Coolgardie	1	Cage traps, food scraps	TE 2022
Coolgardie	16	Cage traps, food scraps	TE2022
South Kalgoorlie	5	Cage traps, food scraps	TE2022

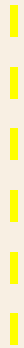
Mining operations

- * Few mine sites actively manage feral cats
- * Some sites don't control cats because they 'keep rat and mice numbers under control'



Mine closure (including care and maintenance)

- * After mine closure, feral cats remain, possibly in higher densities
- * When a mine closes, food scraps and putrescible waste are no longer available, so 'mine cats' revert to preying on native animals



Mine closure

- * The issue of (and increased number of) feral cats is seldom addressed in mine closure plans
- * Simple ideas such as artificial shelters provide protection from predation in early stages of mine closure – see Tenaya Duncan’s presentation tomorrow



Photo from Tenaya Duncan

Mining cats

- * When considered over the life of the mine, it is possible that feral cats are having a greater impact, than the vegetation clearing and mining operations *per se*
- * There is a greater need to focus on feral cats in the EIA process, mining operations and post-mining closure



Going forward

- * Focus on feral predators and their threatening processes in **EIA**
 - * Fauna surveys and reports, regulators assessment, approval conditions, management plans
- * **Operational management** should include a feral predator control
- * **Mine closure** plans need to include feral predator management and mitigation of threatening processes
- * **Compliance** reporting and checks to include an assessment of feral predator management (e.g. putrescible waste management, active management programs)



Cat management in mining needs to be addressed in a broader government context

- * **So, what might that look like?**
- * Appointment of a senior government manager to facilitate operational feral cat management across mining, government and community agencies
 - * Senior, because the person will be required to work across multiple government agencies and could experience significant push back
 - * Person's attributes – bold, courageous, focused, committed, collaborative



Manager's coordination role and focus

* Government agencies

- EPA
- DBCA
- DPIRD
- DWER
- DMIRS
- WaterCorp
- Local government
- DevelopmentWA
- PTA

▪ Community agencies

- Land developers, managers and mining companies
 - * Proponents
 - * Consultants
- RBGs
- NRMs
- Rural industry groups
- University research programs
- Development of community based program
- Commercial agencies focussed on innovation and R&D
- LPMTs

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Manager's focal tasks

- * Community engagement (- lots can be done – see predator free NZ by 2050)
- * Amendment of the *Cat Act*
- * Establish a monitoring program to measure the success of broad scale cat eradication programs
- * Effective and humane euthanasia strategies – mine sites, local government, community groups
- * Wildlife Animal Ethics Committee (WAEC) to assess LPMT's applications to enable the use of foot-hold traps, as per DBCA's use of these traps
- * Pilbara Environmental Offsets Fund (~ \$90m)

