

Session 4 Current works and Critical Gaps

Outcomes from this session

- List of research in different jurisdictions (by jurisdictions we have state and topic here).
- Common agreement of a list of gaps and their level of priority.

Working groups

Groups are separated into states. I have directed the feedback into topics to provide some focus for the discussion. Note there is an *other* topic – for activities that do not fit into these topics - please be explicit about how the research relates to mammal decline issues especially if indirectly related.

Please include research being conducted by others not present if possible.

Current research

Includes recent, current and proposed activities.

Topics

[Distribution & monitoring – includes patterns of decline historic or recent](#)

[Taxonomy / Ecology](#)

[Fire regimes](#)

[Cats](#)

[Pastoralism](#)

[Disease](#)

[Cane toads](#)

[Other](#)

Prioritisation

Please use the last 5-10 minutes to develop a consensus within your group what issues are the highest priority knowledge gaps that need to be overcome – this is to be filled in on the last page.

DISTRIBUTION & MONITORING – includes patterns of decline historic or recent

Research

Organisation	Individual/s	Geographic location	Habitat/s	Species/group	Key question being addressed	How research addresses mammal decline – if unclear in key question or value adds
DEC		Islands		All verts	Biogeography – distribution, occurrence (cane toads)	Baseline data, refugia from threats
DEC	Carnes	Kimberley, in reserves	various	Verts / inverts / flora	Conservation status	Poorly defined
AWC		Mornington, Marion Downs		Verts, plants	Distribution, status, changes over time	
AWC		Kimberley	riparian	PCFW	Distribution, status	Mapping riparian habitat
DPC		Thda & Doongan	various	verts	Distribution, status	
AWC		Mornington		GF	ecology	Effects of fire & grazing
CSIRO		Napier Range (subofssils)		mammals	Original fauna, long term changes	
WAM / DEC		Mitchell plateau & elsewhere		mammals	Long-term change	
KRFMP		Cross-Kimberley		verts	Initially fire, potentially long-term change	
KLC (proposed)		North Kimberley			Improved veg mapping	

Gaps (prioritise within topic)

Key question or issue	Species/group	Geographic location	Priority - <i>high, mid, low</i>
Basic distributional / baseline data / original fauna	Mammals	Most of Kimberley	
Systematic monitoring of mamma popns			

Issues inhibiting better management

Key question or issue	Species/group	Geographic location	Priority - <i>high, mid, low</i>

TAXONOMY / ECOLOGY

Research

Organisation	Individual/s	Geographic location	Habitat/s	Species/group	Key question being addressed	How research addresses mammal decline – if unclear in key question or value adds
WAM / DEC	Rick How, KIS	Islands			Resolving species identities	
AWC		Mornington		Dingos, cats	Interactions between predators	
UWA	Annette Cook	Mitchell R		Quolls	Home range, habitat use vs habitat patchiness	
CSIRO, SAM				Melomys, P. deli, Planigales	Resolving taxonomy	
DPC, UAdel	Sally Potter	TD, wider Kimberley		Rock wallabies	Resolve taxonomy (mostly SERW), population structuring	

Gaps *(prioritise within topic)*

Key question or issue	Species/group	Geographic location	Priority - <i>high, mid, low</i>
Basic ecological knowledge (eg. Life history) of many mammal species			

Issues inhibiting better management

Key question or issue	Species/group	Geographic location	Priority - <i>high, mid, low</i>

FIRE REGIMES

Research

Organisation	Individual/s	Geographic location	Habitat/s	Species/group	Key question being addressed	How research addresses mammal decline – if unclear in key question or value adds
DEC	Ian Radford	Mitchell R	sandstone	All mammals	Fire regimes – patchiness, time since fire	What affects abn patterns at local scales, processes
AWC		Mornington, Marion	all	All mammals	Fire pattern impacts, times since fire, interactions with predators, grazing	
AWC				Seed-eating birds, Spinifex		
				RBFW	Impacts of early / late burns on health	Mechanisms of decline

Management initiatives

Organisation	Individual/s	Geographic location	Habitat/s	Species/group	Key issue being addressed	How management addresses mammal decline – if unclear in key question or value adds
Ecofire		Central Kimberley	all		Reducing extent of fires, fire mapping	
EKFP		East Kimberley (developing)			Fire planning to protect biodiversity assets	

Gaps (prioritise within topic)

Key question or issue	Species/group	Geographic location	Priority - <i>high</i> ,
-----------------------	---------------	---------------------	--------------------------

			<i>Mmid, low</i>
Autecological mechanisms of decline			

Issues inhibiting better management

Key question or issue	Species/group	Geographic location	Priority - <i>high, mid, low</i>
Instituting desirable fire regimes			
Established, lasting mechanisms for rolling out management initiatives			

CATS / PREDATORS

Research

Organisation	Individual/s	Geographic location	Habitat/s	Species/group	Key question being addressed	How research addresses mammal decline – if unclear in key question or value adds
AWC		M, M	all	Cats, dingos	Do dingos affect cat activity, abundance Interaction between fire and acts Diets of cats & dingos in stocked and destocked areas	
DPC		T, D		Cats, mammals	Testing if cat baits affect native mammals	

Management initiatives

Organisation	Individual/s	Geographic location	Habitat/s	Species/group	Key issue being addressed	How management addresses mammal decline – if unclear in key question or value adds
AWC		Marion		dingo	Stopped baiting	

Gaps (*prioritise within topic*)

Key question or issue	Species/group	Geographic location	Priority - <i>high, mid, low</i>
Effective sampling of cats			
Effective control of cats			
Role of cats in mammal decline, particularly interactions with other factors			

Issues inhibiting better management

Key question or issue	Species/group	Geographic location	Priority - <i>high, mid, low</i>
Effective control of cats			

PASTORALISM

Research

Organisation	Individual/s	Geographic location	Habitat/s	Species/group	Key question being addressed	How research addresses mammal decline – if unclear in key question or value adds
AWC		M,M	all	mammals	Destocking effects on mammals Interactions with fire / predators	
AWC		Kimberley	riparian	PCFW	Threshold disturbance for impacts	
DAFWA		Kimberley	pastoral		WARMS – pastoral monitoring	

Management initiatives

Organisation	Individual/s	Geographic location	Habitat/s	Species/group	Key issue being addressed	How management addresses mammal decline – if unclear in key question or value adds

Gaps (prioritise within topic)

Key question or issue	Species/group	Geographic location	Priority - <i>high, mid, low</i>
Interactive effects with fire, predators			
Threshold grazing intensity for mammal popns			

Economic impacts of dingos on cattle			
Effects of water-spreading on predators			

Issues inhibiting better management

Key question or issue	Species/group	Geographic location	Priority - <i>high, mid, low</i>

DISEASE

Research

Organisation	Individual/s	Geographic location	Habitat/s	Species/group	Key question being addressed	How research addresses mammal decline – if unclear in key question or value adds
?none						

Management initiatives

Organisation	Individual/s	Geographic location	Habitat/s	Species/group	Key issue being addressed	How management addresses mammal decline – if unclear in key question or value adds

Gaps (*prioritise within topic*)

Key question or issue	Species/group	Geographic location	Priority - <i>high, mid, low</i>
Importance of disease?			

CANE TOADS

Research

Organisation	Individual/s	Geographic location	Habitat/s	Species/group	Key question being addressed	How research addresses mammal decline – if unclear in key question or value adds
DEC, UniSyd		East Kimberley		mammals	Which species are at threat Pre-toad monitoring; Quoll training	

Management initiatives

Organisation	Individual/s	Geographic location	Habitat/s	Species/group	Key issue being addressed	How management addresses mammal decline – if unclear in key question or value adds
State cane toad strategy						

Gaps *(prioritise within topic)*

Key question or issue	Species/group	Geographic location	Priority - <i>high, mid, low</i>
Unknown responses of some mammal spp			

OTHER

Research

Organisation	Individual/s	Geographic location	Habitat/s	Species/group	Key question being addressed	How research addresses mammal decline – if unclear in key question or value adds

Management initiatives

Organisation	Individual/s	Geographic location	Habitat/s	Species/group	Key issue being addressed	How management addresses mammal decline – if unclear in key question or value adds

Gaps (*prioritise within topic*)

Key question or issue	Species/group	Geographic location	Priority - <i>high, mid, low</i>

Issues inhibiting better management

Key question or issue	Species/group	Geographic location	Priority - <i>high, mid, low</i>

PRIORITISATION - SUMMARY

To be completed in the last 10 minutes of the group sessions

Please identify the highest priorities for filling knowledge gaps highlighted by the group.

- interactions of predators & plant cover (which is influenced by grazing & fire)
- patch scale / accumulated history / thresholds for disturbance
- distribution of remnant populations in landscape (and movements between populations)
- feral cats in tropics – adequate sampling, manipulation, control
- targeted monitoring program
- refining use of prescribed burning (to actually achieve desired conservation objectives)
- identify and examine situations of persistence of healthy mammal popns