

Supplementary material

Comparative dietary ecology of turtles (*Chelodina burrungandjii* and *Emydura victoriae*) across the Kimberley Plateau, Western Australia, prior to the arrival of cane toads

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Table S1. Prey items identified in samples obtained from stomach lavage from *Chelodina burrungandjii* (*Cb*) and *Emydura victoriae* (*Ev*) in four rivers of the Kimberley Plateau, Western Australia

Phylum	Class	Order	Family	Common name	<i>Cb</i>	<i>Ev</i>				
Kingdom – Animalia										
Porifera			<i>unknown</i>	sponge		yes				
Nematoda			<i>unknown</i>	nematodes	yes					
Annelida	Clitellata	SC: Oligochaeta	<i>unknown</i>	earthworms	yes					
		Hirudinea	Arhynchobdellida	Richardsonianidae	leeches	yes	yes			
Mollusca	Bivalvia	Unionoida	Hyriidae	mussels		yes				
		Veneroida	Sphaeriidae	clams	yes	yes				
	Gastropoda	Architaenioglossa	Viviparidae	snails		yes				
Arthropoda	Arachnida		<i>unknown</i>	mites and spiders	yes	yes				
		Acariformes	Eylaidae	mites		yes				
		Araneae	<i>unknown</i>	spiders	yes	yes				
		Sparassidae	<i>unknown</i>	huntman spider		yes				
	Malacostraca	Decapoda	<i>unknown</i>	<i>unknown</i>	Decapods	yes	yes			
			Atyidae	<i>unknown</i>	Shrimps	yes	yes			
			Palaemonidae	<i>unknown</i>	Prawns	yes	yes			
			Sundathelphusidae	<i>unknown</i>	Crabs	yes	yes			
			Insecta		<i>unknown</i>	<i>unknown</i>	Insects	yes	yes	
					Blattoidea	<i>unknown</i>	Cockroaches		yes	
					Coleoptera	<i>unknown</i>	<i>unknown</i>	Beetles	yes	yes
						Curculionidae	<i>unknown</i>	snout beetles		yes
						Dytiscidae	<i>unknown</i>	predaceous diving beetle		yes
						Elmidae	<i>unknown</i>	riffle beetles		yes
						Gyrinidae	<i>unknown</i>	whirligig beetles		yes
						Haliplidae	<i>unknown</i>	crawling water beetle		yes
						Hydraenidae	<i>unknown</i>	small aquatic beetles		yes
						Hydrochidae	<i>unknown</i>	water beetle		yes
						Hydrophilidae	<i>unknown</i>	scavenger water beetles	yes	yes
						Ptilodactylidae	<i>unknown</i>	toe-winged beetles		yes
						Scarabaeidae	<i>unknown</i>	scarab beetles		yes
						Scirtidae	<i>unknown</i>	marsh beetles		yes
						Diptera	<i>unknown</i>	<i>unknown</i>	Flies	
Cecidomyiidae	<i>unknown</i>	gall midges		yes						
Ceratopogonidae	<i>unknown</i>	biting midges	yes	yes						
Chaoboridae	<i>unknown</i>	phantom midges		yes						
Chironomidae	<i>unknown</i>	non-biting midges and bloodworms	yes	yes						

Phylum	Class	Order	Family	Common name	<i>Cb</i>	<i>Ev</i>	
Arthropoda (cont.)	Insecta	Diptera	Simuliidae	black flies		yes	
			Tabanidae	march/horse flies		yes	
		Ephemeroptera	<i>unknown</i>	Mayflies	yes	yes	
			Baetidae	small (minnow) mayflies	yes	yes	
			Caenidae	small square gill mayfly		yes	
		Hemiptera	<i>unknown</i>	true bugs	yes	yes	
			Belostomatidae	giant water bugs		yes	
			Coreidae	leaf-footed bugs		yes	
			Corixidae	water boatmen		yes	
			Gerridae	water striders	yes	yes	
			Mesoveliidae	water treaders	yes		
			Nepidae	water scorpions and needle bugs	yes	yes	
			Pentatomidae	stink and shield bugs		yes	
			Hymenoptera	<i>unknown</i>	wasps, bees, ants		yes
				Formicidae	Ants		yes
		Lepidoptera	<i>unknown</i>	butterflies/moths		yes	
		Mantodea	<i>unknown</i>	Mantis		yes	
		Odonata	<i>unknown</i>	damsel and dragonflies	yes	yes	
			Anisoptera	unk. Odonates	yes		
			Gomphidae	clubtail dragonfly		yes	
			Epiproctophora	Dragonflies		yes	
			Aeshnidae	hawker dragonflies		yes	
			Corduliidae	emerald dragonflies or green-eyed skimmers	yes		
			Zygoptera	Damselflies	yes	yes	
			Megapodagrionidae	flat-wings		yes	
			Orthoptera	<i>unknown</i>	Orthopterans	yes	yes
				Acrididae	Grasshoppers	yes	yes
				<i>unknown</i>	Crickets		yes
				Gryllidae	Crickets		yes
			Phasmatodea	<i>unknown</i>	stick insects		yes
			Trichoptera	<i>unknown</i>	caddis flies (cf)	yes	yes
		Helicopsychidae		snail-shelled cf		yes	
		Hydrobiosidae		caddis fly		yes	
		Hydropsychidae		net spinning cf		yes	
		Hydroptilidae		micro cf		yes	
		Leptoceridae		stick cf	yes	yes	
		Philopotamidae		finger-net, silken, tube spinner cf		yes	
		Odontoceridae		strong case-maker cf		yes	
		<i>unknown</i>		terrestrial insect	yes	yes	

Phylum	Class	Order	Family	Common name	<i>Cb</i>	<i>Ev</i>
Chordata	Osteichthyes	Perciformes	<i>unknown</i>	Fish	yes	yes
<i>unknown</i>				animal tissue	yes	yes
<i>unknown</i>				Eggs		yes
Kingdom – Viridiplantae						
Chlorophyta (Division)	<i>unknown</i>			green algae	yes	yes
Kingdom – Plantae						
Magnoliophyta	Liliopsida	Pandanales	Pandanaceae(<i>Pandanus aquaticus</i>)	pandanus seeds		yes
	Magnoliopsida	Rosales	Moraceae(<i>Ficus racemosa</i>)	Figs		yes
	<i>unknown</i>			aquatic plant tissue	yes	yes
	<i>unknown</i>			terrestrial plant matter	yes	yes

Table S2. Occurrence of prey items in the diet of *Emydura victoria* at four rivers in the Kimberley Plateau

Phylum or Category	Class	Order	Percentage occurrence – all sites	Number of occurrence – Drysdale <i>n</i> = 119	Number of occurrence – King Ed <i>n</i> = 84	Number of occurrence – Annie <i>n</i> = 64	Number of occurrence – Bell <i>n</i> = 123	
Porifera	<i>unknown</i>		17.7	10	15	13	31	
Annelida	Hirudinea	Arhynchobdellida	1.5	6	0	0	0	
Mollusca	Bivalvia	Unionoida	5.6	14	3	0	5	
		Veneroida	28.7	68	33	0	11	
Arthropoda	Gastropoda	Architaenioglossa	5.6	0	22	0	0	
	Arachnida	Acariformes	0.5	0	1	1	0	
		Araneae		3.8	1	4	0	10
	Malacostraca	Decapoda		8.5	0	8	0	25
		Insecta	Blattodea		0.3	0	1	0
	Coleoptera			7.7	6	3	3	18
	Diptera			8.7	4	5	14	11
	Ephemeroptera			2.1	0	0	0	8
	Hemiptera			2.6	1	0	1	8
	Hymenoptera			2.8	0	0	1	10
	Lepidoptera			0.5	0	2	0	0
	Mantodea			0.5	0	0	0	2
	Odonata			2.6	4	0	6	0
	Orthoptera			4.9	2	6	0	11
	Phasmatodea			0.3	0	0	0	1
	Trichoptera		34.1	32	41	23	37	
		<i>unknown</i>		4.1	0	1	0	15
Chordata	Osteichthyes	Perciformes	2.1	0	6	1	1	
K. Animalia	n/a	n/a	12.1	1	3	9	34	
Chlorophyta	n/a	n/a	19.2	9	31	25	10	
Aquatic Plant	n/a	n/a	26.7	11	44	14	35	
Terrestrial Plants	n/a	n/a	50.3	35	28	58	75	

Table S3. Abundance and displacement volume of prey items in the diet of *Emydura victoria* at four rivers in the Kimberley Plateau

Phylum or Category	Class	Order	Percentage displacement volume – all sites	Percentage abundance – all sites	Number of prey items – Drysdale <i>n</i> = 119	Number of prey items – King Ed <i>n</i> = 84	Number of prey items – Annie <i>n</i> = 64	Number of prey items – Bell <i>n</i> = 123	
Porifera	<i>unknown</i>		7.6	n/a	n/a	n/a	n/a	n/a	
Annelida	Hirudinea	Arhynchobdellida	0.05	0.29	8	0	0	0	
Mollusca	Bivalvia	Unionoida	3.3	0.77	13	3	0	5	
		Veneroida	9.0	49.5	1009	242	0	94	
Arthropoda	Gastropoda	Architaenioglossa	1.1	2.06	0	56	0	0	
	Arachnida	Acariformes	0.1	0.07	0	1	1	0	
		Araneae		1.2	0.55	1	4	0	10
	Malacostraca	Decapoda	5.9	1.21	0	8	0	25	
	Insecta	Blattodea		0.09	0.04	0	1	0	0
		Coleoptera		0.9	1.62	6	3	3	32
		Diptera		0.4	2.06	6	5	25	20
		Ephemeroptera		0.07	0.48	0	0	0	13
		Hemiptera		1.2	1.91	1	0	1	50
		Hymenoptera		0.3	0.48	0	0	1	12
		Lepidoptera		0.02	0.07	0	2	0	0
		Mantodea		0.09	0.07	0	0	0	2
		Odonata		0.2	0.37	4	0	6	0
		Orthoptera		1.1	0.85	3	7	0	13
		Phasmatodea		0.4	0.04	0	0	0	1
		Trichoptera		3.5	36.3	149	361	200	278
unknown		0.4	0.99	0	1	0	26		
Chordata	Osteichthyes	Perciformes	5.6	0.29	0	6	1	1	
K. Animalia	<i>unknown</i>		3.1	n/a	n/a	n/a	n/a	n/a	
Chlorophyta	<i>unknown</i>		14.9	n/a	n/a	n/a	n/a	n/a	
Aquatic Plant	<i>unknown</i>		12.1	n/a	n/a	n/a	n/a	n/a	
Terrestrial Plants	<i>unknown</i>		23.5	n/a	n/a	n/a	n/a	n/a	

Table S4. Occurrence of prey items in the diet of *Chelodina burrungandjii* at four rivers in the Kimberley Plateau

Phylum or Category	Class	Order	Percentage occurrence – all sites	Number of occurrences – Drysdale <i>n</i> = 32	Number of occurrences – King Ed <i>n</i> = 24	Number of occurrences – Annie <i>n</i> = 29	Number of occurrences – Bell <i>n</i> = 70	
Nematoda	<i>unknown</i>		0.6	0	0	0	1	
Annelida	Clitellata	subclass-Oligochaeta	0.6	0	0	0	1	
	Hirudinea	Arhynchobdellida	0.6	0	0	1	0	
Mollusca	Bivalvia	Veneroida	0.6	1	0	0	0	
Arthropoda	Arachnida	Araneae	5.8	1	4	1	3	
	Malacostraca	Decapoda	27.1	6	5	3	28	
	Insecta	Coleoptera		2.6	1	0	0	3
		Diptera		1.9	2	0	1	0
		Ephemeroptera		1.3	0	0	0	2
		Hemiptera		5.8	0	0	2	7
		Odonata		3.2	0	0	2	3
		Orthoptera		1.3	0	0	1	1
		Trichoptera		3.2	1	0	2	2
		<i>unknown</i>		1.3	1	0	0	1
Chordata	Osteichthyes	Perciformes	47.7	18	19	12	25	
K. Animalia	n/a	n/a	32.3	8	3	19	20	
Chlorophyta	n/a	n/a	1.3	1	0	1	0	
Aquatic Plant	n/a	n/a	6.5	3	2	3	2	
Terrestrial Plants	n/a	n/a	32.9	11	9	12	19	

Table S5. Abundance and volume of prey items in the diet of *Chelodina burrungandjii* at four rivers in the Kimberley Plateau

Phylum or Category	Class	Order	Percentage displacement volume – all sites	Percentage abundance – all sites	Number of prey items – Drysdale <i>n</i> = 32	Number of prey items – King Ed <i>n</i> = 24	Number of prey items – Annie <i>n</i> = 29	Number of prey items – Bell <i>n</i> = 70	
Nematoda	<i>unknown</i>		0.008	0.32	0	0	0	1	
Annelida	Clitellata	subclass-Oligochaeta	0.008	0.32	0	0	0	1	
		Hirudinea	Arhynchobdellida	0.008	0.32	0	0	1	0
Mollusca	Bivalvia	Veneroida	0.008	0.32	1	0	0	0	
Arthropoda	Arachnida	Araneae	0.8	3.25	2	4	1	3	
		Malacostraca	Decapoda	15.8	20.5	13	12	3	35
		Insecta	Coleoptera	0.3	2.27	2	0	0	5
			Diptera	0.09	17.2	18	0	35	0
			Ephemeroptera	0.02	0.65	0	0	0	2
			Hemiptera	1.8	17.9	0	0	42	13
			Odonata	0.3	1.62	0	0	2	3
			Orthoptera	0.08	0.65	0	0	1	1
			Trichoptera	0.04	5.19	1	0	4	11
			<i>unknown</i>	0.09	0.65	1	0	0	1
Chordata	Osteichthyes	Perciformes	75.6	28.9	18	27	16	28	
K. Animalia	<i>unknown</i>		3.5	n/a	n/a	n/a	n/a	n/a	
Chlorophyta	<i>unknown</i>		0.02	n/a	n/a	n/a	n/a	n/a	
Aquatic Plant	<i>unknown</i>		0.08	n/a	n/a	n/a	n/a	n/a	
Terrestrial Plants	<i>unknown</i>		0.8	n/a	n/a	n/a	n/a	n/a	

Table S6. Index of relative importance (IRI) of prey items in the diet of *Emydura victoria* at four rivers in the Kimberley Plateau

Phylum or Category	Class	Order	IRI Drysdale <i>n</i> = 119	IRI King Ed <i>n</i> = 84	IRI Annie <i>n</i> = 64	IRI Bell <i>n</i> = 123	
Porifera	<i>unknown</i>		0.946	3.96	7.68	6.12	
Annelida	Hirudinea	Arhynchobdellida	0.046	0	0	0	
Mollusca	Bivalvia	Unionoida	3.34	0.276	0	0.368	
		Veneroida	61.9	9.43	0	0.674	
Arthropoda	Gastropoda	Architaenioglossa	0	3.61	0	0	
	Arachnida	Acariformes	0	0.0066	0.0021	0	
		Araneae		0.0064	0.584	0	0.133
	Malacostraca	Decapoda	0	0.221	0	10.5	
	Insecta	Blattodea		0	0.013	0	0
		Coleoptera		0.146	0.047	0.018	0.739
		Diptera		0.020	0.059	0.43	0.158
		Ephemeroptera		0	0	0	0.042
		Hemiptera		0.0013	0	0.0021	0.698
		Hymenoptera		0	0	0.0021	0.208
		Lepidoptera		0	0.0053	0	0
		Mantodea		0	0	0	0.013
		Odonata		0.118	0	0.062	0
		Orthoptera		0.0051	0.150	0	0.774
		Phasmatodea		0	0	0	0.033
Trichoptera		3.05	7.47	3.63	2.68		
unknown		0	0.0013	0	0.450		
Chordata	Osteichthyes	Perciformes	0	3.85	0.0021	0.098	
K. Animalia	<i>unknown</i>		0.026	0.028	0.167	6.98	
Chlorophyta	<i>unknown</i>		0.259	33.1	34.8	1.10	
Aquatic Plant	<i>unknown</i>		0.732	14.3	4.83	20.6	
Terrestrial Plants	<i>unknown</i>		29.4	22.9	48.3	47.6	

Table S7. Index of relative importance (IRI) in the diet of *Chelodina burrungandjii* at four rivers in the Kimberley Plateau

Phylum or Category	Class	Order	IRI Drysdale <i>n</i> = 32	IRI King Ed <i>n</i> = 24	IRI Annie <i>n</i> = 29	IRI Bell <i>n</i> = 70	
Porifera	<i>unknown</i>		0	0	0	0	
Nematoda	<i>unknown</i>		0	0	0	0.0017	
Annelida	Clitellata	subclass-Oligochaeta	0	0	0	0.0017	
		Hirudinea	Arhynchobdellida	0	0	0.011	0
Mollusca	Bivalvia	Unionoida	0	0	0	0	
		Veneroida	0.0012	0	0	0	
Arthropoda	Gastropoda	Architaenioglossa	0	0	0	0	
	Arachnida	Acariformes	0	0	0	??	
		Araneae	0.012	0.372	0.011	0.092	
	Malacostraca	Decapoda		1.27	3.75	1.03	57.2
			Insecta	Blattodea	0	0	0
			Coleoptera	0.0012	0	0	0.162
			Diptera	0.015	0	0.057	0
			Ephemeroptera	0	0	0	0.0067
			Hemiptera	0	0	3.36	0.785
			Hymenoptera	0	0	0	0
			Lepidoptera	0	0	0	0
			Mantodea	0	0	0	0
			Odonata	0	0	0.137	0.126
			Orthoptera	0	0	0.0085	0.0034
			Phasmatodea	0	0	0	0
		Trichoptera	0.0012	0	0.046	0.0067	
		<i>unknown</i>	0.0012	0	0	0.017	
Chordata	Osteichthyes	Perciformes	98.2	95.5	86.5	28.2	
K. Animalia	n/a	n/a	0.28	0.031	5.86	12.4	
Chlorophyta	n/a	n/a	0.0012	0	0.011	0	
Aquatic Plant	n/a	n/a	0.011	0.0060	0.103	0.0067	
Terrestrial Plants	n/a	n/a	0.20	0.351	2.88	0.99	