Appendix C MHQA species scoring metrics overview

AUSTRALIAN PAINTED SNIPE

Key Habitat Values	Weighting	Criteria	Weighting	Indicator	Score scale	Score options	Scoring guidance	Score	Weight	Weighted score	Justification
Site Condition	50%	BioCondition	30%	Recruitment of woody perennial species in EDL Native plant species richness - trees Native plant species richness - shrubs Native plant species richness - grasses Native plant species richness - forbs Tree canopy height (average of emergent, canopy and sub-canopy) Tree canopy cover (average of emergent, canopy and sub-canopy) Shrub canopy cover Native grass cover Organic litter Large trees (euc plus non-euc) Coarse woody debris Non-native plant cover	As per the MHQA (i.e. in accorddance with *Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2* (DEHP 2017) and BioCondition Assessment Manual (Eyre et al. 2015) where specified				100%	As per MHQA	
		Quality and availability of food and foraging habitat per ha	40%	Presence of wetlands with fringing shallow water (max 30cm) and grass cover	Habitat patch	0 2 4 6 8 10	Permanent wetland absent Permanent wetland present but with limited or no shallow water (i.e. farm dam) Permanent wetland present with shallow water and sparse or dense ground cover (<20% or >80%) Permanent wetland present with shallow water and moderately dense grass cover (20-80%) Ephemeral wetland present with sparse or dense grass cover (<20% or >80%) Ephemeral wetland with moderately dense grass cover (20-80%)	/10	100%		
		Quality and availability of shelter habitat	30%	Presence of breeding habitat	Habitat patch	0 5 10	Bare, wet mud and tussocks / reeds are absent Bare, wet mud is present or tussocks / reeds are present Bare, wet mud and tussocks / reeds are present	/10	33%		
				Presence of small islands surrounded by shallow water for nesting	Habitat patch	0 5	Absent Present	/10	33%		
				Low (<30cm) vegetation cover (%) on the peripheries of wetlands	Habitat patch	0 5 10	Absent Sparse (1-20%) Abundant (>20%)	/10	33%		
	30%	Ecological Corridors	13.04%	Proximity of the site to State, bioregional, regional or sub-regional corridors	As per the MHQA (i.e. in accordance with Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2 (DEHP 2017)			/6	100%		
		Distance from water	43.48%	Proximity of the site to a permanent water source	As per the MHQA (i.e. in accordance with Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2 (DEHP 2017)			/20	100%		
		Species mobility	na	NA	NA			NA	NA		
		Role of site location for the population in the State	10.87%	Role of site location to overall population score	As per the MHQA			/5	100%	As per MHQA	
		Threats to species	32.61%	Abundance of invasive weeds in suitable habtiat	Habitat patch	As per the MHQA (i.e. in accordance with Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2 (DEHP 2017). 1 = High threat level 7 = Moderate threat level 15 = Low threat level (i.e. likely to survive)		/15	25%	**Likelihood** - likely **Consequence** - minor **Risk** = moderate	Weightings for each threat have been determined as per the risk rating of each threat from the Conservation Advice for Conservation Advice for Petauroides volans (greater glider (southern and central)) (DCCEEW, 2022) and Conservation Advice for Petaurus australis australis (yellowbellied glider (south-eastern)) (DCCEEW, 2022) where: <u>Categories for likelihood are defined as follows:</u> Almost certain – expected to occur every year Likely – expected to occur at least once every five years Possible – might occur at some time Unlikely – such events are known to have occurred on a worldwide bases but only a few ties Unknown – currently unknown how often the incident will occur <u>Categories for consequences are defined as follows:</u> Not significant – no long-term effect on individuals or populations Minor – individuals are adversely affected but no effect at population level Moderate – population recovery stalls or reduces Major – population decreases Catastrophic – population extirpation/extinction <u>These risks were then categorised into weighting ranges as follows:</u> Low risk = 0-10% Moderate risk = >10-15% High risk = >15-25% Very high risk = >25% The combined threat score was then categorised into a score out of 15 based on DCCEEW scoring (e.g. scores <9 = high threat level (score of 1), scores 9-16 = moderate threat (score of 7), scores >16 = low threat level (score 15).
				Wetland habitat degradation by cattle tramping (grazing) and feral pigs	Habitat patch			/15	25%	**Likelihood** - likely **Consequence** - minor **Risk** = moderate	
				Abundance of feral predators including purple swamphen (Porphyrio porphyrio), cat (Felis catus), fox (Vulpes vulpes) and pig (Sus scrofa)	Habitat patch			/15	50%	**Likelihood** - almost certain **Consequence** - major **Risk** = very high	

Key Habitat Values	Weighting	Criteria	Weighting	Indicator	Score scale	Score options	Scoring guidance	Score	Weight	Weighted score	Justification
Species Stocking Rate	20%	Presence detected on or adjacent to site (neighbouring property with connecting habitat)	25.00%	As per the MHQA				/10	100%	As per MQA	
		Species usage of the site (habitat type)	37.50%					/15	100%		
		Approximate density (per ha)	na	na	na	na	na	/30	100%		
		Role/importance of species population on site*	37.50%	As per the MHQA				/15	100%		

JULIA CREEK DUNNART										
Key Habitat Values	**Weighting**	**Criteria**	**Weighting**	**Indicator**	**Score scale**	**Score options**	**Scoring guidance**	**Score**	**Weight**	**Weighted score**	**Justification**
Site Condition	**40%**	**BioCondition**	**20%**	Recruitment of woody perennial species in EDL Native plant species richness - trees Native plant species richness - shrubs Native plant species richness - grasses Native plant species richness - forbs Tree canopy height (average of emergent, canopy and sub-canopy) Tree canopy cover (average of emergent, canopy and sub-canopy) Shrub canopy cover Native grass cover Organic litter Large trees (euc plus non-euc) Coarse woody debris Non-native plant cover	As per the MHQA (i.e. in accorddance with *Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2* (DEHP 2017) and BioCondition Assessment Manual (Eyre et al. 2015) where specified				100%	As per MHQA	
		Quality and availability of food and foraging habitat per ha	**40%**	Abundance of native grasses used for shelter whilst foraging	Average of five 1m x 1m subplots within 100 x 50 m plot	0	<1% cover.	/10	100%		
						2	1-10% cover.				
						4	11-20% cover.				
						6	21-30% cover.				
						8	31-40% cover.				
						10	>40% cover.				
		Quality and availability of shelter habitat	**40%**	Abundance of cracks and holes used as refuge	Average of five 1m x 1m subplots within 100 x 50 m plot	During dry periods, soil cracks / holes are:					
						0	Absent	/10	50%		
						2	Sparse (1-10%)				
						6	Moderate (11-25%)				
						10	Dense (>25%)				
				Abundance of grass tussocks	100 x 50m plot	0	<1% cover.	/10	50%		
						2	1-10% cover.				
						4	11-20% cover.				
						6	21-30% cover.				
						8	31-40% cover.				
						10	>40% cover.				

Key Habitat Values	Weighting	Criteria	Weighting	Indicator	Score scale	Score options	Scoring guidance	Score	Weight	Weighted score	Justification
		Ecological Corridors	**10.71%**	Proximity of the site to State, bioregional, regional or sub-regional corridors	As per the MHQA (i.e. in accorddance with Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2 (DEHP 2017)			/6	100%	As per MHQA	
		Distance from water	**35.71%**	Proximity of the site to a permanent water source	As per the MHQA (i.e. in accorddance with Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2 (DEHP 2017)			/20	100%	As per MHQA	
		Species mobility	**17.86%**	Average patch size of suitable habitat	Habitat patch	0	<1 ha	/10	100%	As per MHQA	
						2	1-5 ha				
						6	6-10 ha				
						10	>10 ha				
		Role of site location for the population in the State	**8.93%**	Role of site location to overall population score	As per the MHQA			/5	100%	As per MHQA	
	30%	**Threats to species**	**26.79%**	Extent of grazing pressure	Habitat patch	As per the MHQA (i.e. in accordance with Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2 (DEHP 2017). 1 = High threat level 7 = Moderate threat level 15 = Low threat level (i.e. likely to survive)		/15	20%	**Likelihood** - Likely **Consequence** - Moderate **Risk** = High	Weightings for each threat have been determined as per the general risk rating table coupled with the Conservation Advice for Julia Creek dunnart (TSSC, 2016) where: <u>Categories for likelihood are defined as follows:</u> Almost certain – expected to occur every year Likely – expected to occur at least once every five years Possible – might occur at some time Unlikely – such events are known to have occurred on a worldwide bases but only a few ties Unknown – currently unknown how often the incident will occur <u>Categories for consequences are defined as follows:</u> Not significant – no long-term effect on individuals or populations Minor – individuals are adversely affected but no effect at population level Moderate – population recovery stalls or reduces Major – population decreases Catastrophic – population extirpation/extinction <u>These risks were then categorised into weighting ranges as follows:</u> Low risk = 0-10% Moderate risk = >10-15% High risk = >15-25% Very high risk = >25% The combined threat score was then categorised into a score out of 15 based on DCCEEW scoring (e.g. scores <9 = high threat level (score of 1), scores 9-16 = moderate threat (score of 7), scores >16 = low threat level (score 15).
				Introduced predators	Habitat patch			/15	40%	**Likelihood** - Possible **Consequence** - Major **Risk** = Very High	
				Weed abundance (e.g. Prickly acacia (Vachellia nilotica), parkinsonia (Parkinsonia aculeata) and mesquite (Prosopis spp.))	100 x 50m plot			/15	40%	**Likelihood** - Almost certain **Consequence** - Moderate **Risk** = Very High	
Species Stocking Rate	**30%**	**Presence detected on or adjacent to site (neighbouring property with connecting habitat)**	**14.29%**	As per the MHQA				/10	100%	As per MHQA	
		Species usage of the site (habitat type)	**21.43%**					/15	100%		
		Approximate density (per ha)	**42.86%**	Indicative density categories based on available literature (Bakker et al, 2024;	Site	0	Not recorded	/30	100%		
						10	>0.15 individuals/ha				
						20	0.15-0.3 individuals/ha				
						30	>0.3 individuals/ha				
		Role/importance of species population on site*	**21.43%**	As per the MHQA				/15	100%		

PAINTED HONEYEATER SCORING

Key Habitat Values	Weighting	Criteria	Weighting	Indicator	Score scale	Score options	Scoring guidance	Score	Weight	Justification	Justification cont.
Site Condition	50%	BioCondition	30%	Recruitment of woody perennial species in EDL	As per the MHQA (i.e. in accorddance with *Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2* (DEHP 2017) and BioCondition Assessment Manual (Eyre et al. 2015) where specified				100%	As per MHQA	
				Native plant species richness - trees							
				Native plant species richness - shrubs							
				Native plant species richness - grasses							
				Native plant species richness - forbs							
				Tree canopy height (average of emergent, canopy and sub-canopy)							
				Tree canopy cover (average of emergent, canopy and sub-canopy)							
				Shrub canopy cover							
				Native grass cover							
				Organic litter							
				Large trees (euc plus non-euc)							
				Coarse woody debris							
				Non-native plant cover							
		Quality and availability of food and foraging habitat per ha	40%	Abundance of primary food source grey mistletoe (Amyema quandang) and needle-leaved mistletoe (Amyema cambagei)	100 x 50 m plot	0	Absent	/10	80%	The species primairly forages on mistletoes, with grey mistletoe being utilised more frequently (HANZAB).	
						2.5	<1% of trees containing mistletoe within the plot				
						5	1-5% of trees containing mistletoe within the plot				
						7.5	5-30% of trees containing mistletoe within the plot				
						10	>30% of trees containing mistletoe within the plot				
				Density of large trees (BioCondition threshold for eucalypt and non-eucalypt)	100 x 50 m plot	0	No large trees	/10	20%		
						2	1-25% of large tree benchmark				
						4	26-50% of large tree benchmark				
						6	51-75% of large tree benchmark				
						8	76-100% of large tree benchmark				
						10	≥100% of large tree benchmark				
		Quality and availability of shelter (roosting) habitat per ha	30%	Abundance of trees containing primary food source grey mistletoe (Amyema quandang) and needle-leaved mistletoe (Amyema cambagei)	100 x 50 m plot	0	Absent (0 trees)	/10	70%		
						2	Sparse (1 - 2 trees)				
						6	Moderate (3 - 5 trees)				
						10	Mid-dense (>5 trees)				
				Average of Canopy cover (%) relative to BioCondition benchmark	100 x 50 m plot	0	No canopy cover	/10	30%		
						2	1-25% of benchmark				
						4	26-50% of benchmark				
						6	51-75%% of benchmark				
						8	76-100% of benchmark				
						10	≥100% of benchmark				

Key Habitat Values	Weighting	Criteria	Weighting	Indicator	Score scale	Score options	Scoring guidance	Score	Weight	Justification	Justification cont.
Site Context	30%	**Ecological Corridors**	**10.71%**	Proximity of the site to State, bioregional, regional or sub-regional corridors	As per the MHQA (i.e. in accorddance with Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2 (DEHP 2017)			/6	100%		`
		Distance from water	**35.71%**	Proximity of the site to a permanent water source	As per the MHQA (i.e. in accorddance with Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2 (DEHP 2017)			/20	100%		
		Species mobility	**17.86%**	Patch size of suitable habitat	0 = Patch size is <10 ha 2.5= Patch size is between 10-100 ha 5 = Patch size is between 101-500 ha 7.5 = Patch size is between 501-1000 ha 10 = Patch size is >1000 ha			/10	100%		
		Role of site location for the population in the State	**8.93%**	Role of site location to overall population score	As per the MHQA			/5	100%		
		Threats to species	**26.79%**	Habitat degradation from livestock grazing (inhibiting recruitment	Habitat patch	As per the MHQA (i.e. in accordance with Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2 (DEHP 2017). 1 = High threat level 7 = Moderate threat level 15 = Low threat level (i.e. likely to survive)		/15	45%	**Likelihood** - Likely **Consequence** - Major **Risk** = Very High	Weightings for each threat have been determined as per the risk rating of each threat from the Conservation Advice for Anthochaera phrygia regent honeyeater (TSSC, 2015) where: <u>Categories for likelihood are defined as follows:</u> Almost certain – expected to occur every year Likely – expected to occur at least once every five years Possible – might occur at some time Unlikely – such events are known to have occurred on a worldwide bases but only a few ties Unknown – currently unknown how often the incident will occur <u>Categories for consequences are defined as follows:</u> Not significant – no long-term effect on individuals or populations Minor – individuals are adversely affected but no effect at population level Moderate – population recovery stalls or reduces Major – population decreases Catastrophic – population extirpation/extinction <u>These risks were then categorised into weighting ranges as follows:</u> Low risk = 0-10% Moderate risk = >10-15% High risk = >15-25% Very high risk = >25% The combined threat score was then categorised into a score out of 15 based on DCCEEW scoring (e.g. scores <9 = high threat level (score of 1), scores 9-16 = moderate threat (score of 7), scores >16 = low threat level (score 15).
				Competition species (other larger aggressive honeyeaters including noisy miner (Manorina melanocephala), yellow-throated miner (Manorina flavigula), and/or noisy friarbird (Philemon corniculatus)	Habitat patch			/15	15%	**Likelihood** - Possible **Consequence** - Minor **Risk** = Moderate	
				Predation from introduced pests (e.g. cats (Felis catus), black rat (Rattus rattus))	Habitat patch			/15	40%	**Likelihood** - Possible **Consequence** - Major **Risk** = Very High	
Species Stocking Rate	20%	**Presence detected on or adjacent to site (neighbouring property with connecting habitat)**	**14.29%**	As per the MHQA				/10	100%	As per MHQA	
		Species usage of the site (habitat type)	**21.43%**					/15	100%		
		Approximate density (per ha)	**42.86%**	na	na	na	na	/30	100%		
		Role/importance of species population on site*	**21.43%**	As per the MHQA				/15	100%		

PLAINS DEATH ADDER

Key Habitat Values	Weighting	Criteria	Weighting	Indicator	Score scale	Score options	Scoring guidance	Score	Weight	Jusification	Jusification cont.
Site Condition	50%	BioCondition	30%	Recruitment of woody perennial species in EDL	As per the MHQA (i.e. in accorddance with *Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2* (DEHP 2017) and BioCondition Assessment Manual (Eyre et al. 2015) where specified				100%	As per MHQA	
				Native plant species richness - trees							
				Native plant species richness - shrubs							
				Native plant species richness - grasses							
				Native plant species richness - forbs							
				Tree canopy height (average of emergent, canopy and sub-canopy)							
				Tree canopy cover (average of emergent, canopy and sub-canopy)							
				Shrub canopy cover							
				Native grass cover							
				Organic litter							
				Large trees (euc plus non-euc)							
				Coarse woody debris							
				Non-native plant cover							
		Quality and availability of food and foraging habitat per ha	30%	Distance to suitable water sources (inc. dams and watercourses ≥ stream order 3) used by prey species	100 x 50m plot	0	>500 m.	/10	100%		
						5	101 - 500 m.				
						10	0 - 100m.				
		Quality and availability of shelter habitat	40%	Soil cracks/hole abundance (may require dry season assessment)	During dry periods, soil cracks / holes are:						
					100 x 50m plot	0	Absent (no cracks present).	/10	100%		
						2	Sparse (<10%)				
						6	Moderate (11-50%)				
						10	Abundant (>50%)				

Key Habitat Values	Weighting	Criteria	Weighting	Indicator	Score scale	Score options	Scoring guidance	Score	Weight	Jusification	Jusification cont.
	30%	**Ecological Corridors**	**10.71%**	Proximity of the site to State, bioregional, regional or sub-regional corridors	As per the MHQA (i.e. in accorddance with Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2 (DEHP 2017)			/6	100%	As per MHQA	
		Distance from water	**35.71%**	Proximity of the site to a permanent water source	As per the MHQA			/20	100%		
		Species mobility	**17.86%**	Patch size of suitable habitat	Area of contiguous suitable habitat (i.e. patch size) in which the assessment site is located is: 0 = <1 ha 2 = 1-5 ha 6 = 6-10 ha 10 = >10 ha			/10	100%		`
		Role of site location for the population in the State	**8.93%**	Role of site location to overall population score	As per the MHQA			/5	100%		
		Threats to species	**26.79%**	Cane toad abundance	Habitat patch	As per the MHQA (i.e. in accordance with Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2 (DEHP 2017). 1 = High threat level 7 = Moderate threat level 15 = Low threat level (i.e. likely to survive)		/15	60%	**Likelihood** - Likely **Consequence** - Major **Risk** = Very high	Weightings for each threat have been determined as per the risk rating of each threat from the Conservation Advice for Lathamus discolor swift parrot (TSSC, 2016) where: <u>Categories for likelihood are defined as follows:</u> Almost certain – expected to occur every year Likely – expected to occur at least once every five years Possible – might occur at some time Unlikely – such events are known to have occurred on a worldwide bases but only a few ties Unknown – currently unknown how often the incident will occur <u>Categories for consequences are defined as follows:</u> Not significant – no long-term effect on individuals or populations Minor – individuals are adversely affected but no effect at population level Moderate – population recovery stalls or reduces Major – population decreases Catastrophic – population extirpation/extinction <u>These risks were then categorised into weighting ranges as follows:</u> Low risk = 0-10% Moderate risk = >10-15% High risk = >15-25% Very high risk = >25%
				Habitat degradation by cattle trampling	Habitat patch			/15	40%	**Likelihood** - Likely **Consequence** - Moderate **Risk** = High	
Species Stocking Rate	20%	**Presence detected on or adjacent to site (neighbouring property with connecting habitat)**	**14.29%**	As per the MHQA				/10	100%	As per MHQA	
		Species usage of the site (habitat type)	**21.43%**					/15	100%		
		Approximate density (per ha)	**42.86%**	na	na	na	na	na	na		
		Role/importance of species population on site*	**21.43%**	As per the MHQA				/15	100%		