Latin name	English name	Presence* in Concession Area	IUCN Status	Armenian Status	Comment/ notes on habitat or Location of observation
Mammals					
Erinaceus concolor	Southern White-breasted Hedgehog	C&I	LC		Lowest southern section of Amulsar, Northern slope, Western slope
Sorex Volnuchini	Caucasian Pygmy Shrew	С	LC		Flat land on the right bank of Vorotan River
Lepus europaeus	Hare	C&I	LC		Peaks of Amulsar; southern slope; area just east of heap leach facility; woodland north of Saravan
Martes foina nehringi	Stone marten	С	LC		Northeast of heap leach area; Arshak
Mustela nivalis	Least Weasel	C&I	LC		Mountains east of Vorotan valley
Meles Meles	badger	C&I	LC		Woodland north of Saravan; heap leach area; mountains east of Vorotan valley; Latrines – above Saralanj village, SW and NW montane meadow steppe of Amulsar, traces – base of the eastern slope on mountain
Ursus arctos	Brown bear	C&I	LC	VU	Arshak; woodland north of Saravan; also in mountains east of Vorotan valley (Khachaqar license area); traces- banks of Vorotan River. Tracks = SW slope of Amulsar above Saravan and Saralanj villages.
Canis lupus	wolf	C&I	LC		Arshak; Fresh tracks on all routes within study area and droppings
Vulpes vulpes	fox	С	LC		Common
Sus scrofa	Wild Boar	С	LC		Woodland north of Saravan and area further west towards heap leach facility
Cricetulus migratorius	Grey hamster	С			Areas lower than 2400m on stony flat slopes
Chionomys nivalis	European Snow Vole	С	LC		
Microtus arvalis	Common Vole	С	LC		

Latin name	English name	Presence*	IUCN	Armenian	Comment/ notes on habitat or Location of
		in	Status	Status	observation
		Concession Area			
Sylvaemus (apodemus) sylvaticus	Long-tailed Field Mouse	С	LC		All parts of study area
Arvicola amphibius	Water vole	1	LC		Ephemeral and permanent streams
Rattus norvegicus	Grey rat	1??	LC		
Myotis blythii tomes	lesser mouse- eared bat	С	LC		Amulsar exploration camp
Pipistrellus (Vespertilio) pipistrellus	common pipistrelle	С	LC		Amulsar exploration camp
Reptiles and amphibians					
Bufotes viridis	Green Toad	С	LC		Widespread; confirmed in heap leach area
Rana macrocnemis	Minor Asian frog/Lake frog/Brusa frog	С	LC		Pond
Natrix natrix	Grass snake	С	LC		Pond
Hemorrhois (Coluber) ravergieri	Ravergier's (multicolor) whip snake/ Spotted whip snake	С	?		Recorded several times, particularly in grassy mountainous heaths situated 2000-2200 m above the sea level; confirmed in heap leach area
Coronella austriaca	Smooth snake	С	?		Widespread in Amulsar. Recorded in summer in 2009 and 2010, on S and SE slopes (2400-2600 m above the sea level), in dry mountainous, heathy and meadowy landscapes and bushes full of colonies of field mice. Also seen between Gndevaz and heap leach area (2015).
Platyceps (Coluber) najadum Natrix tessellata	Dahl's whip snake Dice snake	P	LC		Recorded in 2009 in Vayots Dzor region, at the bottom of the NW and W slopes, in a dry mountainous heath (2000 m above the sea level). Rather common damp locations near water

Latin name	English name	Presence* in Concession Area	IUCN Status	Armenian Status	Comment/ notes on habitat or Location of observation
					courses.
Elaphe sauromates	Blotched snake/Eastern Four lined rat snake	С	?		Foot of hills and in pastures; confirmed just east of Gndevaz (2013)
Vipera (Montivipera) raddei	Armenian viper or radde's viper	С	IUCN Red List NT	Endemic to the Armenian plateau, Red Book of RA VU	Foot of NW slopes, up to 2400 m above the sea level, in dry heaths and juniper scrub, as well as on the road to Jermuk. Also around heap leach area.
Vipera (Pelias) eriwanensis	Armenian mountainous viper	С	IUCN Red List VU	RA Red Book VU	Recorded in the mountainous heaths of N and NW slopes (2000-2300 masl), near the community landfill. Also confirmed in heap leach area (2015) and on western slope of Amulsar (2013).
Eryx jaculus	Western sand boa	Р	(not assessed)		In Amulsar this snake is rare. It was recorded within the borders of Vayots Dzor, on western foothills, and in a dry heathy zone situated 1800 m above the sea level.
Macrovipera lebetina	Levantine Viper	С	?		confirmed from heap leach area
Telescopus fallax	Cat Snake/ Soosan Snake	С	LC	RA Red Book VU	confirmed from heap leach area
Eirenis punctatolineatus	Dotted Dwarf Snake	С	LC		confirmed from heap leach area
Eirenis modestus	Ring-headed Dwarf Snake	С	LC		confirmed from heap leach area
Dolichophis schmidti	Schmidt's whip snake	С	LC		confirmed from heap leach area

Species of Fauna Recorded i	n Baseline Biodive	rsity Surveys 2	008 to 2015		
Latin name	English name	Presence* in Concession	IUCN Status	Armenian Status	Comment/ notes on habitat or Location of observation
		Area			
Laudakia caucasia	Caucasian rock agama	С	(not assessed)		Confirmed from heap leach area and area just east of Gndevaz
Pseudopus apodus	European glass lizard	Р	(not assessed)		Bottom of hills (up to 2000 m above the sea level).
Ophisops elegans	Snake-eyed lizard	Р	(not assessed)		Present SW of Saravan
Lacerta media	Common lizard/ Three-lined lizard	С	LC		Widespread in Amulsar. It was mainly recorded in mountainous and heathy zones and rocks. Also common in and around heap leach area.
Lacerta agilis	Sand lizard	С	LC		Western slope of Amulsar
Lacerta strigata	Caspian green lizard	Р	LC		
Darveskia raddei	Radde's Rock Lizard	Р	LC		A common species in Jermuk
Darevskia valentini	Valentin's Rock Lizard	С	LC		In Amulsar it mainly inhabits rockfills, rocks and shrubs (2200-3100 m above the sea level). Confirmed from mountains east of Vorotan valley (Khachaqar license area)
Fish					
Salmo trutta	Brown trout	С			Vorotan river
Aspius aspius	Asp		LC	VU	Regional Study Area (RSA)
barbus capito culd	barbel				RSA
barbus mursa guld	barbel				RSA
Acanthalburnus microlepis	Blackbrow bleak				RSA
Varicorhinus capoeta sevangi	Sevan Khramulya		(not assessed)	VU	RSA
Alburnoides bipunctatus	Spirlin				RSA

Latin name	English name	Presence*	IUCN	Armenian	Comment/ notes on habitat or Location of
		in	Status	Status	observation
		Concession			
		Area			
Bloch					
Birds – raptors - breeding					
Buteo rufinus	Long-legged	С	LC		Breeding
•	Buzzard				
Falco naumanni	Lesser Kestrel	С	LC	Red Book	Breeding (Actually breeds just outside concession
				of RA	area but uses it daily for feeding.)
				VU	
Circaetus gallicus	Short-toed	С	LC	VU	Probably breeds woodland north of Saravan
	Eagle				
Falco peregrinus	Peregrine	С	LC	Red Book	(Breeds Arpa gorge SW of Gndevaz, outside of
	Falcon			of RA - VU	concession area).
Aquila pomarina	Lesser Spotted	С	LC	VU	Breeds southwestern slopes of Amulsar
	Eagle				
Accipiter gentilis	Northern	С	LC	VU	Probably breeds in woodland north of Saravan
	Goshawk				
Falco tinnunculus	Common	С	LC		Breeds Arshak
	Kestrel				
Raptors foraging					
	European	С	LC		Foraging – regular visitor; possibly breeds;
Pernis apivorus	Honey Buzzard				common on migration
Aquila chrysaetos	Golden Eagle	С	LC	VU	Foraging – regular visitor (Breeds Arpa gorge)
Buteo buteo	Steppe Buzzard	С	LC		Foraging – regular visitor
Circus pygargus	Montagu's	С	LC	VU	Foraging – occasional visitor (Breeds near Gorayk)
	Harrier				
Hieraaetus pennatus		С	LC	VU	Foraging – regular visitor (Breeds Arpa gorge and
	Booted Eagle				near Jermuk)
Gypaetus barbatus	Lammergeier	С	LC	Red Book	Foraging - regular visitor to the site (Breeds Arpa
				of RA VU	gorge)

Latin name	English name	Presence*	IUCN	Armenian	Comment/ notes on habitat or Location of
		in	Status	Status	observation
		Concession			
		Area			
Gyps fulvus	Griffon Vulture	С	LC	Red Book	Foraging – occasional visitor
				of RA	
		_		VU	
		С	LC		Foraging – occasional visitor (fairly common
Milvus migrans	Black Kite	_			migrant)
	Egyptian	С	EN	Red Book	Foraging – regular visitor (Breeds Arpa gorge)
Neophron Percnopterus	Vulture	_		of RA EN	
Falco cherrug	Saker Falcon	С	EN	EN	Foraging – occasional visitor
Accipiter nisus	Sparrowhawk	С	LC		Foraging – regular visitor; possibly breeds
Aegypius monachus	Cinereous	С	NT	Red Book	Foraging - occasional visitor
	Vulture			of RA –	
				EN	
Raptors - migratory					
	Levant	С	LC	VU	Migratory
Accipiter brevipes	Sparrowhawk				
	Greater Spotted	С	VU	VU	Occasional migrant
Aquila clanga	Eagle				
Aquila Heliaca	Imperial Eagle	С	VU	VU	Occasional migrant
Aquila nipalensis	Steppe Eagle	С	LC	VU	Migratory
Circus aeruginosus	Marsh Harrier	С	LC		Migratory
Circus cyaneus	Hen Harrier	С	LC		Occasional migrant
Circus macrourus	Pallid Harrier	С	NT	EN	Migratory
Falco columbarius	Merlin	С	LC		Migratory
Falco subbuteo	Hobby	С	LC		Migratory
Falco vespertinus		С	NT	VU	Migratory
	White-tailed	С	LC	EN	Occasional migrant
Haliaeetus albicilla	Eagle				
Pandion Haliaetus	Osprey	С	LC	VU	Migratory

Latin name	English name	Presence* in Concession Area	IUCN Status	Armenian Status	Comment/ notes on habitat or Location of observation
Birds – breeding		Alea			
Acrocephalus palustris	Marsh Warbler	С	LC		Breeds heap leach area
, ,	Common	С	LC		·
Actitis hypoleucos	Sandpiper				
Alauda arvensis	Eurasian Skylark	С	LC		
Alectoris chukar	Chukar	С	LC		Breeds western slope of Amulsar
Anas platyrhynchos	Mallard	С	LC		
Anthus campestris	Tawny Pipit	С	LC		
Anthus spinoletta	Water Pipit	С	LC		
Anthus trivialis	Tree Pipit	С	LC		
Apus apus	Common Swift	С	LC		
Apus melba	Alpine Swift	С	LC		Breeds mainly in Arpa gorge
Bubo bubo	Eurasian Eagle	С	LC	VU	Breeds near Amulsar exploration camp
	Owl				
Carduelis cannabina	Eurasian Linnet	С	LC		
Carduelis flavirostris	Twite	С	LC		
	Common	С	LC		
Carpodacus erythrinus	Rosefinch				
	White-throated	С	LC		
Cinclus cinclus	Dipper				
Corvus corax	Common Raven	С	LC		
Coturnix coturnix	Common Quail	С	LC		
	Common	С	LC		
Cucculus canorus	Cuckoo				
	Northern	С	LC		
Delichon urbica	House-martin				
Eremophila alpestris	Horned Lark	С	LC		
Emberiza cia	Rock Bunting	С	LC		

Latin name	English name	Presence* in Concession Area	IUCN Status	Armenian Status	Comment/ notes on habitat or Location of observation
Emberiza hortulana	Ortolan Bunting	С	LC		
	Black-headed	С	LC		
Emberiza melanocephala	Bunting				
Garrulus glandarius	Eurasian Jay	С	LC		
Hirundo rustica	Barn Swallow	С	LC		
Irania gutturalis	White-throated Robin	С	LC	DD	Breeds near heap leach area, on lower western slope of Amulsar, and just east of Gndevaz
Jynx torquilla	Eurasian Wryneck	С	LC		One breeding record just east of Gndevaz in 2014
Lanius collurio	Red-backed Shrike	С	LC		
Locustella naevia	Grasshopper Warbler	С	LC		Breeds near mountains east of Vorotan valley (Khachagar license area)
Lullula arborea	Woodlark	С	LC		
Luscinia svecica	Bluethroat	С	LC		
Merops apiaster	European Bee- eater	С	LC		
Miliaria calandra	Corn Bunting	С	LC		
Monticola saxatilis	Rufous-tailed Rock Thrush	С	LC		
Montifringilla nivalis	White-winged Snowfinch	С	LC		Breeds Arshak
Motacilla alba	White Wagtail	С	LC		
Motacilla cinerea	Grey Wagtail	С	LC		
Motacilla flava	Yellow Wagtail	С	LC		Only breeds near Gorayk village
Oenanthe finschii	Finch's Wheatear	С	LC		One breeding record in small gorge east of Gndevaz in 2015
Oenanthe hispanica	Black-eared Wheatear	С	LC		Breeds in small gorge east of Gndevaz

Latin name	English name	Presence*	IUCN	Armenian	Comment/ notes on habitat or Location of
		in Concession	Status	Status	observation
	Northern	Area C	LC		
Oenanthe oenanthe	Wheatear		LC		
Otus scops	Scops Owl	Р	LC		Breeds commonly in Jermuk; might breed in woodland north of Saravan
Parus caeruleus	Blue Tit	С	LC		woodiand north or saravan
Parus major	Great Tit	С	LC		
Passer domesticus	House Sparrow	С	LC		
Perdix perdix	Grey Partridge	С	LC		
Petronia petronia	Rock Sparrow	С	LC		
Phoenicurus ochruros	Black Redstart	С	LC		
Phylloscopus sindianus	Mountain Chiffchaff	С	LC		
Prunella collaris	Alpine Accentor	С	LC		
Prunella ocularis	Radde's Accentor	С	LC		
Ptyonoprogne rupestris	Eurasian Crag Martin	С	LC		
Pyrrhocorax pyrrhocorax	Red-billed Chough	С	LC		
Rhodopechys sanguineus	Crimson-winged Finch	С	LC		Breeds Arshak
Riparia riparia	Sand Martin	С	LC		
Saxicola rubetra	Whinchat	С	LC		
Saxicola torquatus	Stonechat	С	LC		
Sitta tephronota	Eastern Rock Nuthatch	С	LC	VU	Breeds in small gorge east of Gndevaz
Sitta neumayer	Western Rock Nuthatch	С	LC		

Species of Fauna Recorded	l in Baseline Biodive	rsity Surveys 2	2008 to 201	.5	
Latin name	English name	Presence* in Concession Area	IUCN Status	Armenian Status	Comment/ notes on habitat or Location of observation
Sturnus vulgaris	Common Starling	С	LC		
Sylvia communis	Greater Whitethroat	С	LC		
Sylvia nisoria	Barred Warbler	С	LC		
Syvlia curruca	Lesser Whitethroat	С	LC		
Tadorna ferruginea	Ruddy Shelduck	С	LC	VU	Breeds near Gndevaz reservoir
Tetraogallus caspius	Caspian Snowcock	С	LC	VU	Probably bred Arshak in 2013-2014
Tringa tetanus	Common Redshank	С	LC		Breeds in Vorotan valley
Turdus torquatus	Ring Ouzel	С	LC		
<i>Upupa epops</i>	Eurasian Hoopoe	С	LC		
Insects					
Coenagrion lunulatum	Irish damselfly	С			
Enallagma cyathigerum	Common blue damselfly	С			
Lestes dryas	Emerald spreadwing	С			
Libellula depressa	Broad bodied chaser	С			
Libellula quadrimaculata	Four spotted chaser	С			
Sympetrum flaveolum	Yellow winged darter				
Butterflies					

Latin name	English name	Presence*	IUCN Status	Armenian Status	Comment/ notes on habitat or Location of observation
		in			
		Concession			
		Area			
Aricia agestis	Brown argus	С			
	Gavarnie	С			
Agriades pyrenaicus	(Balkan) blue				
	Small	С			
Aglais urticae	tortoiseshell				
	Ripart's	С			
Agrodiaetus ripartii	anomalous blue				
	Orange tip	С			
Anthocharis cardamines	butterfly				
	Dark green	С			
Argynnis aglaja	fritillary				
	Twin spot	С			
Brenthis hecate	Fritillary				
Boloria caucasica		С			
Carcharodus alceae	Mallow Skipper	С			
	Tufted marbled	С			
Carcharodus flocciferus	skipper				
Coenonympha leander	Russian heath	С			
	Small heath	С			
Coenonympha pamphilus	butterfly				
	Clouded yellow	С			
Colias crocea	butterfly				
	Berger's	С			
Colias sareptensis	clouded yellow				
Cupido minima	Small blue	С			
Cupido osiris	Osiris blue	С			
Cyaniris bellis		С			
	Lesser lattice	С			
Esperarge climene	brown butterfly				

Latin name	English name	Presence*	IUCN	Armenian	Comment/ notes on habitat or Location of
		in	Status	Status	observation
		Concession			
		Area			
Erebia graucasica		С			
	Woodland	С			
Erebia medusa	ringlet				
Eumedonia eumedon	Geranium argus	С			
Heodes virgaurea	Scarce Copper	С			
Heodes candens		С			
	Silver spotted	С			
Hesperia comma	skipper				
	Dusky meadow	С			
Hyponephele lycaon	brown				
	Oriental	С			
Hyponephele lupina	meadow brown				
	Queen of Spain	С			
Issoria lathonia	fritillary				
	Large wall	С			
Lasiommata maera	brown butterfly				
Lycaena phlaeas	Small copper	С			
Lysandra bellargus	Adonis blue	С			
Lysandra caucasica		С			
	Meadow brown	С			
Maniola jurtina	butterfly				
	Marbled white	С			
Melanargia galathea	butterfly				
	Espers marbled	С			
Melanargia russiae	white butterfly				
Melitaea didyma	Spotted fritillary	С			
	Granville	С			
Melitaea cinxia	fritillary				
Neolysandra alexander		С			

Latin name	English name	Presence* in Concession	IUCN Status	Armenian Status	Comment/ notes on habitat or Location of observation
Parnassius apollo	Apollo butterfly	Area C	VU	VU	
Parnassius apono	Large white	С	VU	VO	
Diaris brassismo	butterfly				
Pieris brassicae	The dark veined	С			
	white				
Pieris bryoniae	False small	С			
Pieris pseudorapae	white butterfly				
	Silver studded	С			
Plebeius argus	blue				
Plebeius calliopis	Dide	С			
Plebejides zephyrinus		С			
	The bath white	С			
Pontia daplidice	butterfly				
Polyommatus icarus	Common blue	С			
Polyommatus amandus	Amanda's blue	С			
Polyommatus dorylas	Turquoise blue	С			
Polyommatus thersites	Chapman's blue	С			
•	Eastern baton	С			
Pseudophilotes vicrama	blue				
	Large grizzled	С			
Pyrgus alveus	skipper				
	Obethur's	С			
Pyrgus armoricanus	Grizzled skipper				
Thymelicus lineola	Essex skipper	С			
Thymelicus sylvestris	Small skipper	С			
	Red admiral	С			
Vanessa atalanta	butterfly				
	Painted lady	С			
Vanessa cardui	butterfly				

Species of Fauna Recorded Latin name	English name	Presence* in Concession Area	IUCN Status	Armenian Status	Comment/ notes on habitat or Location of observation
Thersamonolycaena alciphron		С			
Thersamonia thetis		С			
Ultraaricia crassipuncta		С			
Carabidae					
Amara apricaria (Paykull)	Ground beetle	С			
Amara equestris (Duft.)		С			
Amara famelica Zimm.	Early sunshiner	С			
Brachinus crepitans (L.)	Bombardier beetle	С			
Brachinus explodens (L.)		С			
Calathus ambiguous (Paykull)		С			
Calathus fuscipes (Goeze)		С			
Calathus melanocephalus (L.)		С			
Carabus calleyi renardi Chaud.		С			
Carabus cribratus Quensel		С			
Cymindis scapularis Schaum		С			
Harpalus quadratus Chaud.		С			
Harpalus affinis (Schrank)		С			
Harpalus distinguendus (Duft.)		С			

Species of Fauna Recorded in Baseline Biodiversity Surveys 2008 to 2015							
Latin name	English name	Presence* in Concession Area	IUCN Status	Armenian Status	Comment/ notes on habitat or Location of observation		
Lebia cyanocephala (L.)		С					
Philorhizus crucifer Lucas		С					
Pristonychus mannerheimi (Kol.)		С					
Syntomus motschulskyi Khnz.		С					
Syntomus pallipes Dej.		С					
Trechus melanocephalus Kol.		С					
Trechus quadristriatus (Schrank)		С					

*Presence:

C = Confirmed

I = Inferred from tracks or signs

P = Possible from literature or other secondary sources