

Biodiversity Table

Xstrata-managed operations in or adjacent to protected areas					
Operation	Location	Protected area	Area (ha) of operation lease	IUCN category	Ecological sensitivity
Rolleston Mine (coal)	Queensland, Australia	Albinia National Park	5,632	II	Adjacent to Albinia National Park and operating in areas with endangered bluegrass community
Gaspé smelter (closed copper mine and smelter)	Quebec, Canada	Parc de la Gaspésie	2,397	II	Adjacent to a provincial park
Magnola (closed magnesium plant)	Quebec, Canada	Étang Burbank	800	III	Adjacent to a wetland
San Juan de Nieva (zinc smelter)	Asturias, Spain	El Espartal Natural Monument	56	III	Adjacent to a littoral protected area
Nordenham (zinc smelter)	Germany	Protected area (directive 79/409/EC)	20	IV	Jarosite waste pond surrounded on three sides by the protected area

Xstrata-managed operations in or adjacent to areas of high biodiversity value			
Business	Operation	Location	Ecological sensitivity
Alloys	Thornccliffe and Helena chrome mines and Mototolo platinum JV	Steelpoort, South Africa	Endemic IUCN Red List species within or adjacent to the lease area: Short stem carnation weed; Sekhukhune (Bushman's-tea); Blue Shield Fruit; Red Ivory (Rooi-ivoor); Sekhukhune Elephant-root (<i>Sekuhunebasboontjie</i>); and Data deficient: <i>Cicada Pycna Sylvia</i> Mototolo and Thornccliffe falls within the Skhukhuneland Centre of Endemism and is rich in Biodiversity
	Horizon chrome mine	Farms Ruighoek 169 JP and Vogelstruisnek 173 JP Pilansberg, South Africa	Protected species or species of concern: <i>Gladiolus</i> , <i>Scadoxus</i> , <i>Sclerocarya</i> and <i>Euphorbia spp.</i> Data deficient: <i>Lemniscomys rosalia</i> (single-striped mouse)
	Kroondal chrome mine	Rustenburg, South Africa	Adjacent to wetlands area (although not a protected area or listed in RAMSAR convention on wetlands of international importance). A number of protected orchid species (<i>Ceropegia</i>) occur in the natural areas of the mine, as does the mammal <i>Lemniscomys rosalia</i>
	Rhovan vanadium	Brits, South Africa	Endangered species that may potentially occur within Rhovan area were identified by using National Botanical Institute Research information and the IUCN Red List. Endangered: one bird species. Near threatened: six plant species, 15 bird species. Rare: three plant species, two mammal species. Vulnerable: ten bird species, five mammal species. Least concern: one plant species
Coal	Abbot Point	Queensland, Australia	Located adjacent to the nationally significant Lake Caley Wetlands and the Great Barrier Reef marine park.
	Baal Bone	New South Wales, Australia	SMP area is adjacent to the Cox's River Swamp.
	Beltana mine	New South Wales, Australia	One endangered ecological community (Warkworth Sands Woodland) has been identified within the project area

Coal	Bulga mine	New South Wales, Australia	Multiple conservation areas with high aboriginal heritage significance including numerous artefacts in Loders creek. Habitat for several threatened species such as the eastern bent-wing bat, eastern free-tail bat, grey-crowned babbler, speckled warbler, hooded robin, diamond firetail, brown tree creeper and masked owl.
	Mangoola	New South Wales, Australia	Adjacent to Wallaby Rocks and Anvil Hill which have numerous aboriginal rock shelters with cultural heritage significance.
	Mount Owen mine	New South Wales, Australia	Adjacent to Ravensworth State Forest (IUCN category VI). The planned mine expansion will impact 35 hectares of State Forest and 56 hectares of native woodland. The planned biodiversity offset will protect 415 hectares for conservation purposes.
	Oaky Creek	Queensland, Australia	A total of seven significant species are potentially present in and adjacent to the mine area. Three are listed as vulnerable and four as near threatened.
	Ravensworth	New South Wales, Australia	There are 3 species recorded within the Ravensworth North Project Area listed as vulnerable under the EPBC Act. They are: <ul style="list-style-type: none"> • Bothriochloa biloba (lobed blue grass) • Litoria aurea (Green and Gold Bell Frog) - also vulnerable under IUCN • Pteropus poliocephalus (Grey headed flying fox) - also vulnerable under IUCN. There were also 24 EPBC listed migratory/marine birds identified within the Project Area. It is unlikely that the Project Area forms an area of important habitat and the Project is not likely to have a significant impact on any of these listed bird species. Note - The species identified in the proposed Hillcrest offset area (north of lake Liddell) have not been included.
	Ulan mine	New South Wales, Australia	Ulan mine is located adjacent to the Goulburn River National Park. The increased presence of threatened species at the site indicates that habitats are being maintained and/or improved. The identified IUCN Red list species include: FAUNA:- Endangered - 1 - Vulnerable - 1 - Near Threatened – 6 FLORA:- No flora species on Red List Number of species identified on the National Conservation List (EPBC Act) FAUNA:- Endangered - 5- Vulnerable – 10 FLORA: - Critically Endangered - 1 - Endangered - 5 - Vulnerable - 19
	United mine	New South Wales, Australia	207 hectares are of high habitat value; a 30 hectares biodiversity offset area has been established for five species of conservation significance, with six mammals and four bird species listed under NSW Threatened Species Conservation Act and an additional seven migratory species listed under the EPBC Act. Fauna assemblages and listed species have also been identified in an additional 177 hectares. The offset also allows a linkage between the Wollemi National Park and Wollombi Brook

Coal	Tselentis	South Africa	<p>None of the frogs or fish species expected to occur or that were observed in the area are included on the IUCN Red List. The biotopes within the study area provide habitat for the potential presence of the African Python and Yellow-bellied House Snake, which are considered threatened or of concern.</p> <p>The Verkeerdepán future mining area provides potentially suitable habitats for five near-threatened bird species (Lesser flamingo, Greater flamingo, Black stork, Secretary bird and Yellow-billed stork). Nine bird species listed as vulnerable on the IUCN Red list (Grey Crowned Crane, Blue Crane, Southern Bald Ibis, African Marsh Harrier, Lesser Kestrel, White-bellied Korhaan, African Grass Owl, Stanley Bustard and Martial Eagle) may also occur in the Verkeerdepán study area.</p> <p>Of the 11 Red list mammal species expected to be found in the area, seven species can be classified as small mammal species. The remaining four species, namely Oribi, Serval, Spotted-necked Otter and Honey badger are larger and more conspicuous mammals that might be more vulnerable to persecution by hunting and foraging dogs than to any other threat.</p>
	Spitzkop:	South Africa	<p>The habitats in and around the mine are suitable for a large number of IUCN red list (endangered, near-threatened and vulnerable) animal species. These include two reptile species, the African python and the Yellow-bellied House Snake. Ten Red list bird species can also be expected, namely the Blue Crane, Southern Bald Ibis, Lesser Kestrel, African Grass Owl, Greater Flamingo, Lesser Flamingo, Secretary Bird, Blue Korhaan, Lanner Falcon and Botha's Lark. A further twelve threatened mammal species can also be expected, namely the Greater red musk shrew, South African hedgehog, Highveld golden mole, Rough-haired golden mole, Schreibers' long-fingered bat, Brown hyaena, Serval, Spotted-necked otter, Honey badger, Oribi, Water Rat and the White-tailed mouse.</p>
	West Wallsend mine	New South Wales, Australia	<p>The 'Sugarloaf State Conservation Area' is located above the current West Wallsend mining area. It provides habitat for eight threatened flora species, approximately 30 threatened fauna species and one endangered ecological community over an area of 3,937 hectares. In 2008, a corridor of high biodiversity value was identified which is a possible future offset or conservation area.</p>
	Westside mine	New South Wales, Australia	<p>The site is adjacent to an endangered ecological community being the Sydney Coastal Estuary Swamp Forest Complex and a single threatened species <i>Tetratheca juncea</i> has been identified in the vicinity of the mine. A biodiversity offset area has been established.</p>
	Wollombi, Oaky	Queensland, Australia	<p>4,300 hectares has been established as the Newlands Nature Reserve by Xstrata Coal, including 520 hectares as an offset for mining operations at Wollombi. Significant flora species include: Rare: <i>Atalaya calcicola</i>; <i>Macropteranthes leiocaulis</i>, <i>Actephila sessilifolia</i></p>
	Creek, Newlands and Collinsville mines	Queensland, Australia	<p>Vulnerable: <i>Croton magneticus</i>, <i>Cadellia pentastylis</i>, <i>Marsdenia pumila</i></p> <p>Significant fauna species include: Red goshawk (<i>Erythrotriorchis radiatus</i>), Troughton's sheath-tail bat (<i>Taphozous troughtoni</i>), ghost bat (<i>Macroderma gigas</i>), eastern long-eared bat (<i>Nyctophilus timoriensis</i>), yakka skink (<i>Egernia rugosa</i>), ornamental snake (<i>Denisonia maculata</i>)</p> <p>Brigalow scaly-foot (<i>Paradelma orientalis</i>), grey goshawk (<i>Accipiter novaehollandia</i>), square-tailed kite (<i>Lophoictinia isura</i>)</p>

Coal	Tweffontein mine	Witbank, South Africa	Some parts of the Tweffontein land have been identified as biodiversity sensitive areas due to the Wetlands found within the area along the Tweffontein and Zaaiwater river catchments, vulnerable species the Giant bullfrog and Red Ibis identified during the 2007 Biodiversity survey and four plant species listed in the IUCN which were also found adjacent to the Tweffontein complex in the 2009 survey namely: the <i>Encephalartos lanatus</i> (Vulnerable), <i>Frithia humilis</i> (Endangered), <i>Gladiolus robertsoniae</i> (Near Threatened) and <i>Nerine granlis</i> (Near Threatened).
Copper	CCR	North America; Canada	The area around the site is highly industrialized but still contains ICUN Red list species classed as minor preoccupations such: Northern brown snake, Northern water snake, Short-eared owl, Peregrine falcon <i>anatum</i> , Loggerhead shrike, Least bittern, Silver-haired bat, Red bat, Hoary bat, Eastern pipistrelle.
	Frieda River project	Papua New Guinea	The site is in an undisturbed part of PNG surrounded by tropical rainforest which has high biodiversity value. The area is not protected. These values are being assessed as a part of an extensive terrestrial biodiversity program
	Gaspé – closed mine & smelter	Quebec, Canada	These closed sites are within one kilometre of the Chic-Chocs fauna reserve (Category VI IUCN); at more than 10 kilometres, Gaspé provincial park (Category II IUCN); at 10 kilometres north of Murdochville, Madeleine salmon river (Category VI IUCN); and 10 kilometres south of Murdochville, York salmon river (Category VI IUCN)
	Horne	North America; Canada	A number of IUCN Red List species have been identified to be either potentially present or confirmed present around the Horne site; none of those have been identified to be impacted by the operations. The following list indicate those species for which the presence around Horne has been confirmed: Rusty Blackbird (vulnerable); Olive-sided Flycatcher (Near Threatened); Lake Sturgeon, Chimney Swift , Common Nighthawk, Silver-haired Bat, Red Bat and Hoary Bat (Least Concern).
	Kidd Metallurgical and Kidd Mining	North America; Canada	The following IUCN Red List species have been identified to be either potentially present or confirmed present around the Kidd sites. Vulnerable (Rusty Blackbird)• Near threatened (Olive-sided Flycatcher)• Least concern (Peregrine Falcon, Bald Eagle, Black Tern, Great Gray Owl, Chimney Swift, Common Nighthawk, Short-eared Owl, Woodland Caribou, Lake Sturgeon)
	Las Bambas project	Peru	No protected areas but project area of influence includes several Andean habitats, such as puna grasslands, Andean wetlands (bofedales), scrubs, rocky terrains, lagoons, isolated forested and river vegetation. IUCN Red List species present include three amphibians, one bird, one mammal. Other international and national regulations regarding endangered and endemic species include 24 species of flora and 22 of fauna.
	Lomas Bayas mine	Chile	The Lomas Bayas mine site's water intake is located within the Loa River basin in the Atacama Desert, one of the driest regions in the world. The Loa River and its flood plains are of significant ecological sensitivity due to the water they provide to the local communities as well as the diversity of flora and fauna found within the desert region. This is not a protected area
	Tampakan project	Philippines	Baseline study cited three endangered fauna: Philippine Eagle (<i>Pithecophaga jefferyi</i>), Rufous Hornbill (<i>Buceros hydrocorax</i>), Gian Scops Owl (<i>Mimizuku gurneyi</i>); and two vulnerable fauna: Blue-naped parrot (<i>Tanygnathus lucionensis</i>), and Malay Monitor Lizard (<i>Varanus salvator</i>)

Copper	Tintaya mine	Peru	The following IUCN Red List species have been identified to be either potentially present or confirmed present near the Tintaya mine site. Endangered: Puya (<i>Puya raimondii</i> Harms) Near threatened: Chilean flamingo (<i>Phoenicopterus chilensis</i>), Giant Gallareta (<i>Fulica gigantea</i>) Vulnerable: Parihuana or Andean flamingo (<i>Phoenicoparrus andinus</i>), Common Bandurria (<i>Theristicus melanopus</i>)
Nickel	Araguaia project	Brazil	The project area encompasses large areas of intervened or overgrazed land and smaller areas at higher elevation which include remnant forest and endangered or vulnerable bird and mammal species. A comprehensive baseline study commenced in 2008, to supplement preliminary studies in 2007. The study has not been completed due to the suspension of the project in 2008.
	Koniambo project	New Caledonia	The Koniambo Project is located in New Caledonia which has been identified by Conservation International as one of 34 biodiversity hotspots in the world. The project is within a region containing endemic species, and ecosystems including moist evergreen forest, swamp forest, savannah, mangroves and coral reefs. IUCN Red List species identified (115) include three freshwater fish species, 50 plant species, two vulnerable reptiles, seven birds, three mammals, one shark, two marine fish, two vulnerable marine mammals, and four endangered or critically endangered turtles
	Montcalm and Sudbury mines	Canada	Montcalm treated effluent is discharged to the Groundhog River Provincial Waterway Park. An area of 22 hectares along the riverbanks in the vicinity of the Montcalm operation is classified as a forest reserve. One IUCN Red List species is listed for the Groundhog River. Least concern: Freshwater sturgeon (<i>Acipenser fulvescens</i>)
Zinc	CEZ	North America	The Beauharnois canal, adjacent to the jarosite ponds is the spawning area for site suckers, mottled scuplin and smallmouth bass. There is not expected to be any effect from site as there is no direct aqueous discharge from ponds to the canal.
	Nordenham zinc smelter	Germany	Nordenham's jarosite waste pond is located inside an area proposed as a protected area under the European Union directive for protection of birds. One near-threatened species and six least concern species have been identified
	San Juan de Nieva zinc smelter	Asturias, Spain	Significant flora species: Sensitive to habitat alteration: <i>Crucianella maritime</i> . Endangered: <i>Linaria supine</i> Significant fauna species: Vulnerable: <i>Hyla arborea</i> , <i>Rana perezi</i> , <i>Numenius arquata</i> Sensitive to habitat alteration: <i>Haematopus ostralegus</i> . Special interest: <i>Hydrobates pelagicus</i> , <i>Riparia riparia</i>
	McArthur River lead and zinc mine	Northern Territory, Australia	Species identified in areas potentially affected by or adjacent to the conversion to open cut operations include: Endangered: Freshwater sawfish Near threatened: Carpentaria grass wren; spectacled hare wallaby; purple crowned fairy wren; white-browed robin; grey falcon; Worrell's turtle Vulnerable: Australian bustard