



There are also a number of international waders, recorded under the Australian Government agreements with China and Japan, whose fragile habitat is entirely dependent upon the health of the water catchment river systems, and are detailed in the following report.

PROTECTING AUSTRALIA'S LISTED MIGRATORY ANIMAL SPECIES

AREA - Lower reaches of Wyong River, Ourimbah Creek and Tuggerah Lakes

Tuggerah Lakes and Barrier Estuary

The Wyong River Catchment (436 sq. km.) and Jilliby Creek Catchment (101 sq. km.) discharge their collective waters (after confluence) into the Wyong river and its delta which protrudes 1 km. into the Tuggerah Lakes barrier estuary. Estuarine sediments provide a major habitat in which significant ecological processes occur. The sedimentary deposition from erosion of land-based material can be altered by river flow and anthropogenic disturbances. The hydrodynamics - estuarine geomorphology which influences water circulation, mixing and flushing rates - is dependent upon the volume and quality of water flowing into this mesotrophic estuary from daily ocean tidal motions and river inputs.

Estuarine benthic habitats are dependent upon Ecological Sustainable foreshore management and Catchment management - two critical pivotal roles of management. This is an essential consideration for any development proposals which are considered threatening to the inter-dependability between the catchment, the barrier estuary and Tuggerah Bay identified as an ecologically sensitive habitat within the estuary.

These critical environmental conditions must be protected to ensure these biological assemblages and the ecological integrity of the estuarine habitats are maintained. The Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act 1999) regulates actions that will, or are likely to have, a significant impact on any matter of national significance and includes listed international migratory animal species. I have detailed in Appendix A, nineteen (19) and seventeen (17) Migratory Bird Species recorded under Australia's international obligations to the CAMBA and JAMBA:

- i) An agreement between the Government of Australia and the Government of the People's Republic of China for the Protection of Migratory Birds and their Environment (CAMBA). Signed at Canberra on 20 October 1986 and entered into force on 1 September 1988.

and

- ii) An agreement between the Government of Australia and the Government of Japan for the Protection of Migratory Birds and Birds in Danger of Extinction and their Environment (JAMBA) signed at Tokyo 6 February 1974 and entered into force on 30 April 1981.

The Australian Coal Alliance (ACA) advises that Alteration to Habitat, following uncontrollable subsidence (active and residual) arising from long wall coal mining, has been determined by the NSW Scientific Committee as a Key Threatening Process under Schedule 3. Part 2. of the Threatened Species Conservation Act 1995. (Gazetted date 15/07/05).

Longwall coal mining in the Northern, Southern and Western Coalfields of NSW is responsible for incalculable environmental degradation, the contamination and destruction of river systems and groundwater sources and the interception and release of heavily contaminated and deoxygenated coal seam waters. The ecological integrity and biodiversity in the aquatic and terrestrial environment, of the green riparian corridors in the Yarramalong and Dooralong Valleys within the Wyong catchment, would be seriously threatened. Soil poisoning from leaking methane or carbon dioxide gases, diversion and/or termination of critical river waters, contamination by acid drainage and deterioration of water quality due to reduction in dissolved oxygen within the coal seam aquifers are the recorded conditions arising with mine subsidence.

The ACA have determined, after extensive research into this problem in other areas of this State, that the Yarramalong and Dooralong Valleys will not escape these disastrous impacts, KORES (the proponent), does acknowledge that subsidence will occur. This will fracture sub surface aquifers and the floodplains situated above

the coal seams. New drainage channels (arising from subsidence fractures) and natural drainage flow lines, will intercept contaminated coal seam waters before their final discharge into the Wyong River. Polluted river waters will destroy aquatic organisms in the estuarine areas of Tuggerah Lakes - the feeding habitat of some nineteen(19) international migratory waders recorded from these areas and listed under the CAMBA and JAMBA agreements.

The integrity of public water resources drawn from this catchment, supplying some 305,000 Central Coast residents, will be under an immediate threat of both continuity and quality delivery of this public resource. It is recorded that thirty-three (33) Threatened Species of Flora and Fauna have been documented by the National Parks and Wildlife Service (NSW) for both valleys.

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References:

- 2001 Department of Land and Water Conservation (NSW) Draft Water Sharing Plan Jilliby Jilliby Creek Water Source. 2001 Order and 2003 Order.
- 2001 Gosford-Wyong Council's Water Authority (Wyong NSW). Stream Flow Management Strategy and Urban and Environmental Balance May 2001.
- 2005 A Birds Australia Bird Atlas 1998-2004. Species list lower reaches of Wyong and Ourimbah Creeks, Tuggerah Lakes.
- 2003/4 Wyong Shire Council State of the Environment summary report.
- 2001 Wyong Shire Council. Tuggerah Lakes Estuary Process Study. February 2001. Ed. Roberts, D. E. Marine Ecologist, Strategic Planning Department. Oct. 2000.
- 1999 Department of Land and Water Conservation NSW. A White Paper. Dec. 1999. A proposal for undated and consolidated water management legislation for NSW.
- 2006 Australian Government Department of the Environment and Heritage Aug. 2006. Migratory Species under JAMBA and CAMBA. (Cronan, V. A/g Assistant Director Migratory and Marine Biodiversity Section, (Marine Division) Canberra.
- 2005 Department of Environment and Conservation (NSW).

Final Determination by the NSW Scientific Committee of "Alteration to Habitat following subsidence due to longwall mining" has been listed as a key threatening process under *Schedule 3* of the *Threatened Species Conservation Act 1995*. Under *Section 7 of the Scientific Committee Final Determination of 15/7/05* there is reference to long term studies in the USA which indicate reductions in diversity and abundance of aquatic invertebrates which occur in streams in the vicinity of LWCM* and these effects may still be evident 12 years after mining. (Stout 2003 2004).

* LWCM = Long wall coal mining

Appendix A

Scientific Name	Common Name	Annex	Current Listing		Wader		
			CAMBA	JAMBA			
<i>Ardea alba</i>	Great Egret		*	*	*		*
<i>Ardea ibis</i>	Cattle Egret		*	*	*		*
<i>Plegadis falcinellus</i>	Glossy ibis		*				*
<i>Haliaeetus leucogaster</i>	White Bellied Sea Eagle		*				*
<i>Gallinago hardwickii</i>	Latham's Snipe		*	*	*		*
<i>Limosa lapponica</i>	Bar-Tailed Godwit		*	*	*		*
<i>Numenius madagascariensis</i>	Eastern Curlew		*	*	*		*
<i>Tringa stagnatilis</i>	Marsh Sandpiper		*	*	*		*
<i>Tringa nebularia</i>	Common Greenshank		*	*	*		*
<i>Calidris canutus</i>	Red Knot		*	*	*		*
<i>Calidris ruficollis</i>	Red-necked Stint		*	*	*		*
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper		*	*	*		*
<i>Calidris ferruginea</i>	Curlew Sandpiper		*	*	*		*
<i>Pluvialis fulva</i>	Pacific Golden Plover		*	*	*		*
<i>Sterna caspia</i>	Caspian Tern		*	*	*		*
<i>Sterna albifrons</i>	Little Tern		*	*	*		*
<i>Chlidonias leucopterus</i>	White-winged black Tern		*	*	*		*
<i>Hirundapus caudacutus</i>	White-throated Noddy		*	*	*		*
<i>Apus pacificus</i>	Fork-tailed Swift		*	*	*		*
	TOTAL			19	17		

Reference Data:

- *New Atlas of Australian Birds. 1998-2005. NSW.*
- *Australian Government
Department of Environment and Heritage (DEH), Canberra.
Marine Division. Listed Migratory Species under JAMBA and CAMBA. 24/08/06*