# The Kennecott Inland Sea Shorebird Reserve

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**Short title:** The Kennecott Inland Sea Shorebird Reserve, Utah

**Key Message:** Kennecott Utah Copper LLC, a subsidiary of Rio Tinto, manages the Inland Sea Shorebird Reserve (ISSR) and also preserves Great Salt Lake habitats to attract migratory birds.

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## What is the problem?

Kennecott Utah Copper LLC, a subsidiary of Rio Tinto Plc, is North America's largest copper mine. In the mid-1990s, the company needed additional storage capacity for tailings[1]. The company purchased an area of degraded saltpans and industrial land along the south shore of Great Salt Lake for the storage (Ten Kate et al. 2004). However, it was found that this area contained designated wetland habitat. Great Salt Lake is an important ecological resource and home to many migratory birds.[2] Kennecott was thus required by U.S. law to offset, or mitigate, the loss of wetlands by the creation of an agreed number and value of habitat units (Ten Kate et al. 2004). Much of the habitat had deteriorated from over-grazing, salt evaporation ponds, off-road vehicle use and illegal waste dumping. Restoration and creation of water bird habitats was necessary for successful offsets.

## Which approach was taken?

In 1996, Kennecott Utah Copper Company undertook the cleanup and construction of the 1,011 ha Inland Sea Shorebird Reserve (ISSR) in conjunction with a project to expand its tailings storage. Approximately 427 ha were affected by the tailings expansion (Brownlie, 2009). This area, however, was much degraded and had little shorebird use. To create the nearby ISSR, trash was removed; fences were constructed to keep out cattle and trespassers; and ponds and water conveyance canals were constructed to aid in the restoration and creation of shorebird habitat.

[1] The tailings include sand-sized mineral particles that are an uneconomical by-product from the milling of copper ores (Ten Kate et al. 2004).

[2] More than 250 species have been sighted as the lake is an important migratory stop between North and South America.

There are two major components to the ISSR. The first component is the legally required mitigation site, consisting of five ponds, to offset the loss of wetlands from the tailings project. The second component is the 'bank',[3] which consists of four additional ponds. The up-front costs of the mitigation site and the bank were about US$ 20 million in 1995, 70% of which was used for the land purchase. In addition to this cost, the annual monitoring costs (over the legally required 7 year period) are estimated at US$ 90,000 per year. The outcome of this project is a net gain for biodiversity. Credits from the bank can be used by Kennecott or sold to others for wetlands mitigation in accordance with the terms of the Bank Agreement with the US government (Brownlie, 2008).

Kennecott Utah Copper Corporation went beyond its regulatory obligations to create a 1,011 ha shorebird and waterfowl refuge (Ten Kate et al. 2004). Since construction, the number of birds and wildlife using the ISSR has grown significantly. Approximately 150,000 migratory birds and waterfowl visit this area each year (Barr, 2003). The ISSR was accepted in 2004 as part of a Birdlife International and National Audubon Important Bird Area (Kennecott Utah Copper Company, 2010).

**What ecosystem services were considered and how?**

The ecosystem services used in this case are primarily biodiversity preservation. Due to the proximity of Great Salt Lake to the affected area, concern for high quality shorebird habitat was highlighted as the most important ecosystem service. The size of the offset, available water to restore and create habitat, as well as keeping out cattle and trespassers were critical for replacement of ecosystem services.

**What input was required to do so?**

A wetland mitigation plan was developed in coordination with a Technical Advisory Committee (TAC), comprising representatives from the Utah Division of Wildlife Resources, U.S. Fish and Wildlife Service, Environmental Protection Agency, the Nature Conservancy, National Audubon Society and the US Army Corps of Engineers. Nesting and migratory shorebirds and waterfowl were identified as the key elements requiring mitigation due to the project site's proximity to Great Salt Lake which is part of the Western Hemispheric Shorebird Reserve Network (Ten Kate et al. 2004).

**What was the policy uptake, and what were the conditions for this effort to actually influence public management?**

This wetland offset project is recognised as one of the largest and most successful mitigations in the United States. After eight cumulative years of monitoring at the ISSR Mitigation Site and Bank (1995-2002) the data established that the ISSR provides beneficial habitat for shorebirds and other wildlife and that the monitoring requirements of the Mitigation Plan and Bank Site Plan have been met. Kennecott has benefited from this project through improved relations with state and federal regulators, local environmental groups and with the local residents in the area (Brownlie, 2008).

[3] A 'bank' of restored habitat was established in addition to the legally required offset (Brownlie, 2009). The 'bank' referred to the surplus land which could be used to offset future impacts on wetlands (584 ha) adjacent to the mitigation site (Brownlie, 2008).

The number of bird species at the ISSR has grown from 50 in 1995 to more than 150 in 2010. The reserve also has an important educational and community role. It is visited by Kennecott employees, birding groups, schools and university research teams (Kennecott Utah Copper, 2010). The ISSR is a significant contributor to bird use in the area and lies adjacent to Great Salt Lake's Gilbert Bay which was identified in 2004 as an Important Bird Area for National Audubon. Due to the success of the ISSR, other wetland mitigation sites as well as wetland preserves around Great Salt Lake have adopted similar management plans. In 2009 National Audubon constructed water conveyance canals to restore water to areas to increase water bird use (National Audubon Society, 2010). Contributions for water flow restoration establishment for the Audubon Gillmor Sanctuary site were in part the result of the obvious success of the ISSR. Additionally, there is recognition that contiguous protected shorebird habitat is more beneficial than smaller areas. Other land adjacent to the ISSR was purchased in 2006 by various groups to preserve the habitats on the south shores of Great Salt Lake (BirdLife International, 2010).

The Marketwire (July 22, 2010) reports Kennecott was awarded with a Stevie Award for the Best Public Information production in the public relations category. The award was presented for the 2008 Salt Lake Valley Rio Tinto Sustainable Development Report which educates the public about Kennecott company's social, economic and environmental commitments and ongoing sustainable development practices. Thus the company was shown that the corporate responsibility can also merge with social and environmental responsibility.

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