The Minister approved this conservation advice and included this species in the Critically Endangered category, effective from 5 May 2016

# Conservation Advice

# *Limosa lapponica menzbieri*

Bar-tailed godwit (northern Siberian)

## Taxonomy

Conventionally accepted as *Limosa lapponica menzbieri* Portenko, 1936. Charadriidae.

Other common names include barred-rumped godwit, Pacific Ocean godwit, southern or small godwit.

The bar-tailed godwit is polytypic, meaning more than one subspecies exists. Globally, the following four subspecies are recognised:

- The nominate species, *L. l. lapponica*, breeds in northern Europe and north-western Asia;
- The subspecies *L. l. taymyrensis* breeds in north-west and north-central Siberia;
- The subspecies *L. l. baueri* breeds in north-east Siberia and west Alaska;
- The subspecies *L. l. menzbieri* also breeds in northern Siberia (Woodley 2009; Gill & Donsker 2015).

Note that some assessments recognise a fifth subspecies, *L. l. anadyrensis*, (Tomkovich 2010; Leyrer et al. 2014). Based on plumage differences, *L. l. anadyrensis* has been proposed as a separate subspecies rather than as a cline between westerly Siberian *L. l. menzbieri* and easterly Siberian *L. l. baueri* (e.g. Tomkovich 2010; Leyrer et al. 2014). However, this taxonomic split does not appear to be universally accepted with some considering the *L. l. baueri* population includes *L. l. anadyrensis* (Gill & Donsker 2015).

Two subspecies, *L. l. baueri* and *L. l. menzbieri*, regularly occur in Australia (Garnett et al. 2011).

## Summary of assessment

### Conservation status

Critically Endangered: Criterion 1 A2(a)

The highest category for which *Limosa lapponica menzbieri* is eligible to be listed is Critically Endangered.

*Limosa lapponica menzbieri* has been found to be eligible for listing under the following listing categories:
Criterion 1: A2 (a): Critically Endangered
Criterion 2: Not eligible
Criterion 3: Not eligible
Criterion 4: Not eligible
Criterion 5: Not eligible

Species can be listed as threatened under state and territory legislation. For information on the listing status of this species under relevant state or territory legislation, see http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl

### Reason for conservation assessment by the Threatened Species Scientific Committee

This advice follows assessment of new information provided to the Committee to list *Limosa lapponica menzbieri*.

### Public Consultation

Notice of the proposed amendment and a consultation document was made available for public comment for 47 business days between 1 October and 4 December 2015. Any comments received that were relevant to the survival of the species were considered by the Committee as part of the assessment process.

## Species/Sub-species Information

### Description

The bar-tailed godwit (northern Siberian) is a large migratory shorebird. It has a length around 37-39 cm, a wingspan of 62-75 cm and body mass between 250 - 450 g. It has a long neck with a very long upturned bill which is characterized by a dark tip and pinkish base. All non-breeding plumages have a uniform upper pattern, with a dark back and upper rump. It is distinguishable from other godwits by the dark barring on the lower white rump, upper-tail and lining of the underwing. The sexes differ with females being larger and with longer bills than males and having a duller breeding plumage. Males and females exhibit marked variation in plumages with males having a deep rufous head and neck. Juveniles are similar to non-breeding adults with the exception that the crown is more heavily streaked (Higgins & Davies 1996).

The two subspecies in the East Asian – Australasian Flyway (EAAF), *L. l. baueri* and *L. l. menzbieri*, are distinguishable morphologically in the field (Wilson et al. 2007; Choi et al. 2015). The bar-tailed godwit (northern Siberian) is slightly larger and stockier than the black-tailed godwit, *L. limosa*, with a shorter neck and legs, a steeper forehead, and a more upturned and pointed bill (Higgins & Davies 1996).

### Distribution

*Australian distribution*

The bar-tailed godwit (both subspecies combined) has been recorded in the coastal areas of all Australian states. It is widespread in the Torres Strait and along the east and south-east coasts of Queensland, NSW and Victoria. In Tasmania, the bar-tailed godwit has mostly been recorded on the south-east coast. In South Australia it has mostly been recorded around coasts from Lake Alexandrina to Denial Bay. In Western Australia it is widespread around the coast, from Eyre to Derby. Populations have also been recorded in the northern Australia, from Darwin east to the Gulf of Carpentaria. The bar-tailed godwit is a regular migrant to Christmas Island, Norfolk Island, Lord Howe Island. It has also been recorded on subantarctic islands such as Macquarie Island, Snares Islands, Auckland Islands and Campbell Islands (Higgins & Davies 1996).

During the non-breeding period, the distribution of *L. l. menzbieri* is predominantly in the north and north-west of Western Australia and in south-eastern Asia (Bamford et al. 2008).

*Global distribution*

The bar-tailed godwit (all subspecies combined) has an extremely large global range. For the species, the global extent of occurrence is estimated to be 1,470,000 km$^2$ (BirdLife International 2015).

The subspecies *L. l. menzbieri* breeds in northern Siberia, Russia between the Khatanga River and the delta of the Kolyma River (Higgins & Davies 1996). This subspecies spends the non-breeding period mostly in the north of Western Australia, but also in south-east Asia (Bamford et al. 2008). Migrating birds stage for over one month during both southwards and northwards migration in western and northern parts of the Yellow Sea (Leyrer et al. 2014). The Yalu Jiang coastal wetland supports, on average, at least 19% of the EAAF's northward-migrating *L. l. menzbieri* godwits (Choi et al. 2015).

### Relevant Biology/Ecology

*Life history*

A generation time of 9.7 years (BirdLife International 2015) is derived from an age at first breeding of 2 years (Cramp et al. 1983), an adult survival of 70% (Cramp et al. 1983) and a maximum longevity of 22.8 years (Australian Bird and Bat Banding Scheme; Garnett et al. 2011).

*Breeding*

The migratory bar-tailed godwit (northern Siberian) does not breed in Australia.

They nest in the northern hemisphere during the boreal summer with egg laying occurring from late May through June (del Hoyo et al. 1996). This species nests in solitary pairs although nests may be grouped together due to polyandrous behaviour. They lay two to five eggs, incubate for 20-21 days, and have a nestling period of 28 days (del Hoyo et al. 1996). The species is gregarious and they often fly in large flocks. They forage in groups outside of the breeding season (del Hoyo et al. 1996); occasionally aggregating into huge flocks of several hundreds or thousands of individuals at favoured sites (BirdLife International 2015).

*General habitat*

At northern hemisphere breeding sites, the bar-tailed godwit (northern Siberian) nests on the ground in open tundra, usually on dry elevated sites and often between clumps of grass (del Hoyo et al. 1996; Woodley 2009). The nest is usually a depression lined with bits of vegetation and lichens (del Hoyo et al. 1996).

The bar-tailed godwit (northern Siberian) occurs mainly in coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays. It has also been recorded in coastal sewage farms and saltworks, saltlakes and brackish wetlands near coasts, sandy ocean beaches, rock platforms, and coral reef-flats (Higgins & Davies 1996).

*Feeding habitat*

The bar-tailed godwit (northern Siberian) usually forages near the edge of water or in shallow water, mainly in tidal estuaries and harbours. They prefer exposed sandy or soft mud substrates on intertidal flats, banks and beaches.

*Roosting habitat*

The bar-tailed godwit (northern Siberian) usually roosts on sandy beaches, sandbars, spits and also in near-coastal saltmarsh (Higgins & Davies 1996). In some conditions, shorebirds may choose roost sites where a damp substrate lowers the local temperature. During periods of cyclonic activity, shorebirds moved to sheltered areas to avoid high winds and heavy rain (Jessop & Collins 2000).

*Diet*

The bar-tailed godwit (northern Siberian) is mainly carnivorous with a diet consisting of worms, molluscs, crustaceans, insects and some plant material. While it is in breeding grounds it eats mainly ground dwelling insects (Higgins & Davies 1996). On the estuary of the Parramatta River, NSW, polychaetes represented at least 86.7% of their diet and were the only prey able to be identified (Taylor et al. 1996). At Roebuck Bay, Western Australia, birds were observed feeding on bivalves which had been exposed by a cyclone (Jessop & Collins 2000). At Roebuck Bay, birds showed a strong tendency to follow the tide edge and females tending to feed closer to the sea edge than males (Rogers 1999).

*Migration patterns*

The bar-tailed godwit breeds in the northern hemisphere and migrates southwards for the boreal winter. Leg flag sightings and plumage differences suggest that *L. l. menzbieri*, from north-west Australia, has a more westerly migration route than *L. l. baueri* (Barter 2002).

The entire migrations of *L. l. menzbieri* averaged 21,940 ± 570 km over 154 days. Despite these large migration distances, bar-tailed godwit adults are thought to have high site fidelity in the non-breeding season (Barter 1989).

*Departure from breeding grounds*

The post-breeding migration to Australia for *L. l. menzbieri* involved stopovers in the New Siberian Islands, Russia, and the Yellow Sea. *L. l. menzbieri* travelling on average 4,510 ± 360 km from Russia to the Yellow Sea, staged there for 40.8 ± 5.6 days, and then flew another 5,680 – 7,180 km to Australia (i.e. 10,820 ± 300 km in total) (Battley et al. 2012).

*Return to the breeding grounds*

At Broome Bird Observatory, 103,123 bar-tailed godwits were counted leaving on northward migration and the median departure date was 8 April (Wilson et al. 2007). Most birds that had not left south-eastern Australia by the end of the first week of April were immature (Wilson et al. 2007). Most if not all bar-tailed godwits may spend their second austral winter in the non-breeding range, and some their third winter as well (Wilson 2000).

Using satellite telemetry, the migration of *L. l baueri* (travelling between non-breeding grounds in New Zealand) and *L. l. menzbieri* (from northwest Australia) to breeding grounds in Alaska and eastern Russia, respectively was studied (Battley et al. 2012). Individuals of both subspecies made long flights from non-breeding grounds to coastal staging grounds in the Yellow Sea region of East Asia (average 10,060 ± SD 290 km for *L. l baueri* and 5,860 ± 240 km for *L. l. menzbieri*). *L. l baueri* staged for 41.2 ± 4.8 days before flying over the North Pacific Ocean and then heading northeast to the Alaskan breeding grounds (6,770 ± 800 km). *L. l. menzbieri* staged for 38.4 ± 2.5 days before flying over land and sea northeast to high arctic Russia (4,170 ± 370 km) (Battley et al. 2012).

At the key staging site of Yalu Jiang, the mean arrival date for *L. l. baueri* godwits was 29 March and mean departure date was 8 May. Corresponding dates were 11 April and 15 May for *L. l. menzbieri* godwits (Choi et al. 2015).

## Threats

Migratory shorebirds, such as the bar-tailed godwit (northern Siberian), are sensitive to certain development activities due to their: high site fidelity, tendency to aggregate, very high energy demands, and need for habitat networks containing both roosting and foraging sites (Department of the Environment 2015a,b).

Threats to the global population of the bar-tailed godwit (northern Siberian) across its range include: habitat loss and habitat degradation (e.g. through land reclamation, industrial use and urban expansion; changes to the water regime; invasive plants; environmental pollution); over-exploitation of shellfish; pollution/contamination impacts; disturbance; direct mortality (hunting); diseases; extreme weather events; and climate change impacts (Garnett et al. 2011; BirdLife International 2015; Department of the Environment 2015a,b).

Threats in Australia, especially northern and north-west Australia, include ongoing human disturbance as well as habitat loss and degradation from pollution, changes to the water regime and invasive plants (Rogers et al. 2006; Garnett et al. 2011; Department of the Environment 2015a,b).

*Habitat loss and habitat degradation*

Threats at migratory staging sites include environmental pollution, reduced river flows, reclamation for tidal power plants and barrages, industrial use and urban expansion (Barter

2002; Moores 2006; Garnett et al. 2011). A significant and serious threat to the bar-tailed godwit (northern Siberian) is loss of habitat and/or habitat degradation, particularly at migration staging sites. Staging areas used during migration through eastern Asia are being lost and degraded by activities which are reclaiming the mudflats for development or utilising them for aquaculture (Barter 2002; Ge et al. 2007; Round 2006; Murray et al. 2014).

There have been major changes and loss of intertidal habitat in the Yellow Sea where c.80% of the EAAF population of bar-tailed godwit (subspecies combined) stages on northward migration (Barter 2002; Bamford et al. 2008). Around 75% of the tidal flat area that historically existed in the Republic of Korea was lost by 2010 (Moores 2012 cited in Choi et al. 2015). These coastal wetlands are important staging areas where shorebirds stop and replenish their energy reserves in order to complete their migration (Battley et al. 2012; Choi et al. 2015). The rates of loss of intertidal habitat in the Yellow Sea region show no sign of slowing (Murray et al. 2014).

The degradation of foraging habitat in some areas, including Australian locations, may also be caused by the invasion of mudflats and coastal saltmarshes from the spread of mangroves. This may be due to increased sedimentation and nutrient loads at the coast from land-use practices in upstream catchment areas (Straw & Saintilan 2006; Woodley 2009) as well as from sea level rise causing landward invasion of plants (Straw & Saintilan 2006; BirdLife International 2015).

In Australia, the loss of important habitat reduces the availability of foraging and roosting sites. This probably affects the ability of the birds to build up the energy stores required for successful migration and breeding. Some sites are important all year round for juveniles who may stay in Australia throughout the breeding season until they reach maturity. A variety of activities may cause habitat loss. These include direct losses through land clearing, inundation, infilling or draining. Indirect loss may occur due to changes in water quality, hydrology or structural changes near roosting sites (Department of the Environment 2015a,b). Anthropogenic nutrient enrichment of wetland areas can cause cyanobacterium blooms that may impact the prey species of bar-tailed godwits (e.g. at Roebuck Bay; Estrella et al. 2011).

As most migratory shorebirds have specialised feeding techniques, they are particularly susceptible to slight changes in prey sources and foraging environments. Activities that cause habitat degradation include (but are not restricted to): loss of marine or estuarine vegetation, which is likely to alter the dynamic equilibrium of sediment banks and mudflats; invasion of intertidal mudflats by weeds such as cord grass; water pollution and changes to the water regime; changes to the hydrological regime and exposure of acid sulphate soils, hence changing the chemical balance at the site (Department of the Environment 2015a,b).

*Climate change*

Global warming and associated changes in sea level are likely to have a long-term impact on the breeding, staging and non-breeding grounds of migratory shorebirds (Harding et al. 2007). Rises in sea level could have a major impact on the bar-tailed godwit due to loss of intertidal habitat (Iwamura et al. 2013). Taking into account up-shore movements of intertidal habitat, modelling indicates that, for this species, population flow (i.e. maximum flow capacity of the migratory population) could reduce by 15% with a 150 cm sea level rise (Iwamura et al. 2013).

*Pollution/contamination*

Migratory shorebirds are adversely affected by pollution, both on passage and in non-breeding areas (Harding et al. 2007; Wei et al. 2006).

Feather samples of bar-tailed godwits (western Alaskan) from two New Zealand sites were tested for mercury. The distribution of mercury concentrations in all samples did not differ significantly from normal either from non-breeding plumage samples on arrival in New Zealand or from breeding plumage samples prior to departure from New Zealand (Thompson 2001).

*Disturbance*

Human disturbance can cause shorebirds to interrupt their feeding or roosting and may influence the area of otherwise suitable feeding or roosting habitat that is actually used. Disturbance from human recreation activities may force migratory shorebirds to increase the time devoted to vigilance and anti-predator behaviour and/or may compel the birds to move to alternative, less favourable feeding areas (Goss-Custard et al. 2006; Glover et al., 2011; Weston et al., 2012). Human disturbance can interrupt feeding and may restrict the area of feeding habitat available for bar-tailed godwits. Bar-tailed godwits (western Alaskan) at Phillip Island, Victoria, were recorded taking flight when humans approached within 10–70 m of them (Taylor & Bester 1999).

Disturbance can result from recreational activities including fishing, boating, four wheel driving, walking dogs, noise and night lighting. While some disturbances may have a low impact, it is important to consider the combined effect of disturbances with other threats (Department of the Environment 2015b).

*Diseases*

The bar-tailed godwit is also susceptible to avian influenza and so may be threatened by future outbreaks of the virus (Melville & Shortridge 2006; BirdLife International 2015).

Since, 1992, the viral disease testing of Charadriiformes from coastal northwest Australia has not detected any evidence of avian influenza virus excretion in the bar-tailed godwit or any other species tested. However, from serologic testing, there was evidence of a very low level of past exposure to the virus (Curran et al. 2014).

*Direct mortality*

Direct mortality may result from collision with large structures (e.g. wind farms) which cause a barrier to migration or movement pathways, bird strike with vehicles and aircraft, hunting, chemical spills and oil spills (Schacher et al., 2013; Department of the Environment 2015b). Hunting is still a very serious problem for shorebirds in China, and the bar-tailed godwit has been identified as one of the species caught (Ming et al. 1998).

**How judged by the Committee in relation to the EPBC Act Criteria and Regulations**

**Criterion 1. Population size reduction (reduction in total numbers)**
Population reduction (measured over the longer of 10 years or 3 generations) based on any of A1 to A4

| | Critically Endangered Very severe reduction | Endangered Severe reduction | Vulnerable Substantial reduction |
|---|---|---|---|
| **A1** | **≥ 90%** | **≥ 70%** | **≥ 50%** |
| **A2, A3, A4** | **≥ 80%** | **≥ 50%** | **≥ 30%** |

A1 Population reduction observed, estimated, inferred or suspected in the past and the causes of the reduction are clearly reversible AND understood AND ceased.

A2 Population reduction observed, estimated, inferred or suspected in the past where the causes of the reduction may not have ceased OR may not be understood OR may not be reversible.

A3 Population reduction, projected or suspected to be met in the future (up to a maximum of 100 years) [(*a) cannot be used for A3*]

A4 An observed, estimated, inferred, projected or suspected population reduction where the time period must include both the past and the future (up to a max. of 100 years in future), and where the causes of reduction may not have ceased OR may not be understood OR may not be reversible.

*based on any of the following:*

(a) direct observation [*except A3*]

(b) an index of abundance appropriate to the taxon

(c) a decline in area of occupancy, extent of occurrence and/or quality of habitat

(d) actual or potential levels of exploitation

(e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites

**Evidence:**

**Eligible under Criterion 1 A2 (a) for listing as Critically Endangered**

The global estimate of the bar-tailed godwit population has been estimated to be between 1,100,000-1,200,000 individuals (BirdLife International 2015). Globally, the overall population trend is decreasing, although some flyway populations may be stable and others have unknown trends. Although around the world the species is considered to be decreasing in numbers, the rate of decline is not great enough to warrant listing as a vulnerable species under the IUCN Red List (BirdLife International 2015).

The number of bar-tailed godwits in the EAAF has been estimated to be 325,000 and, during the non-breeding period, 88% of the EAAF population occurs in Australia and New Zealand (Bamford et al. 2008). Previously, there have been estimated of 185,000 bar-tailed godwits (both subspecies) in Australia during the non-breeding period (Bamford et al. 2008).

On the basis of the hypothesised distribution of the two subspecies during the non-breeding period, and using regional population estimates for Australia, the EAAF population estimate of *L. l. menzbieri* is 170,000 individuals (Bamford et al. 2008; Garnett et al. 2011). By extrapolation, the population of this subspecies spending the non-breeding period in Australia is assumed to be 124,000 individuals, based on 185,000 for the species (Bamford et al. 2008) minus 61,000 *L. l. baueri* (Southey 2009; Garnett et al. 2011).

At Eighty Mile Beach, Western Australia, numbers of bar-tailed godwits (northern Siberian) declined from 110,000 to 52,000 between 2000 and 2008, and at northern Roebuck Bay from ~12,000 in 2001-2004 to ~9,000 in 2005-2008 (Rogers et al. 2009).

In Japan, between 1998 and 2008, populations of both subspecies have declined in general and by about 53% in spring counts (Amano et al. 2010). The numbers of bar-tailed godwits on migration at Saemangeum and adjacent estuaries declined by 11% from 2006 to 2008 (Choi et al. 2015). Populations of bar-tailed godwits in New Zealand (mainly considered to be *L. l. baueri*) declined by 18% (103,000 to 85,000) between 1993 and 2003 (Southey 2009).

A recent and more detailed assessment by a University of Queensland team (partly funded by the Department of the Environment under an Australian Research Council grant), puts the subspecies into the critically endangered category (Studds et al., submitted). Time series data from directly observed summer counts at a large number of sites across Australia indicate a very severe population decline of 81.9% over 29 years (6.1% per year) which for this subspecies is equal to three generations (Studds et al., submitted).

In large part, the observed decline in bar-tailed godwit (northern Siberian) numbers across Australia stems from ongoing loss of intertidal mudflat habitat at key migration staging sites in the Yellow Sea (Murray et al., 2014). Threats are also occurring in Australia including coastal development, habitat degradation and human disturbance. As such, qualification under criterion A2 rather than A1 seems warranted.

The Committee considers that the species has undergone a very severe reduction in numbers over three generation lengths (29 years for this assessment), equivalent to at least 81.9 percent and the reduction has not ceased, the cause has not ceased and is not understood. Therefore, the species has been demonstrated to have met the relevant elements of Criterion 1 to make it eligible for listing as Critically Endangered.

| **Criterion 2. Geographic distribution as indicators for either extent of occurrence AND/OR area of occupancy** | | | |
|---|---|---|---|
| | **Critically Endangered Very restricted** | **Endangered Restricted** | **Vulnerable Limited** |
| B1. Extent of occurrence (EOO) | **< 100 km$^2$** | **< 5,000 km$^2$** | **< 20,000 km$^2$** |
| B2. Area of occupancy (AOO) | **< 10 km$^2$** | **< 500 km$^2$** | **< 2,000 km$^2$** |
| AND at least 2 of the following 3 conditions: | | | |
| (a) Severely fragmented OR Number of locations | **= 1** | **≤ 5** | **≤ 10** |
| (b) Continuing decline observed, estimated, inferred or projected in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) area, extent and/or quality of habitat; (iv) number of locations or subpopulations; (v) number of mature individuals | | | |
| (c) Extreme fluctuations in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) number of locations or subpopulations; (iv) number of mature individuals | | | |

**Evidence:**

**Not eligible**

The extent of occurrence in Australia is estimated to be 7 500 000 km$^2$ (stable) and area occupied 8 100 km$^2$ (stable; Garnett et al. 2011). Therefore, the species does not meet this required element of this criterion.

| **Criterion 3. Population size and decline** | | | |
|---|---|---|---|
| | **Critically Endangered Very low** | **Endangered Low** | **Vulnerable Limited** |
| Estimated number of mature individuals | **< 250** | **< 2,500** | **< 10,000** |
| AND either (C1) or (C2) is true | | | |
| C1 An observed, estimated or projected continuing decline of at least (up to a max. of 100 years in future) | **Very high rate 25% in 3 years or 1 generation (whichever is longer)** | **High rate 20% in 5 years or 2 generation (whichever is longer)** | **Substantial rate 10% in 10 years or 3 generations (whichever is longer)** |

| | | | | |
|---|---|---|---|---|
| C2 | An observed, estimated, projected or inferred continuing decline AND its geographic distribution is precarious for its survival based on at least 1 of the following 3 conditions: | | | |
| (a) | (i) Number of mature individuals in each subpopulation | **≤ 50** | **≤ 250** | **≤ 1,000** |
| | (ii) % of mature individuals in one subpopulation = | **90 – 100%** | **95 – 100%** | **100%** |
| (b) | Extreme fluctuations in the number of mature individuals | | | |

**Evidence:**

**Not eligible**

The number of mature individuals in Australia was estimated at 124 000 (decreasing) in 2011 (Garnett et al. 2011), but has declined since. There are no current data available to allow assessment against the criterion. Therefore, the species does not meet this required element of this criterion.

| **Criterion 4. Number of mature individuals** | | | |
|---|---|---|---|
| | **Critically Endangered Extremely low** | **Endangered Very Low** | **Vulnerable Low** |
| Number of mature individuals | **< 50** | **< 250** | **< 1,000** |

**Evidence:**

**Not eligible**

The number of mature individuals in Australia was estimated at 124 000 (decreasing) in 2011 (Garnett et al. 2011), but has declined since. The estimate is not considered extremely low, very low or low. Therefore, the species does not meet this required element of this criterion.

| **Criterion 5. Quantitative Analysis** | | | |
|---|---|---|---|
| | **Critically Endangered Immediate future** | **Endangered Near future** | **Vulnerable Medium-term future** |
| Indicating the probability of extinction in the wild to be: | **≥ 50% in 10 years or 3 generations, whichever is longer (100 years max.)** | **≥ 20% in 20 years or 5 generations, whichever is longer (100 years max.)** | **≥ 10% in 100 years** |

**Evidence:**

**Not eligible**

Population viability analysis has not been undertaken

## Conservation Actions

### Recovery Plan

There should not be a recovery plan for this species, as approved conservation advice provides sufficient direction to implement priority actions and mitigate against key threats. Significant management and research is being undertaken at international, national, state and local levels.

**Conservation and Management Actions**

- Work with governments along the East Asian – Australasian Flyway to prevent destruction of key breeding and migratory staging sites.
- Protect important habitat in Australia.
- Support initiatives to improve habitat management at key sites.
- Maintain and improve protection of roosting and feeding sites in Australia.
- Advocate for the creation and restoration of foraging and roosting sites.
- Incorporate requirements for bar-tailed godwit (northern Siberian) into coastal planning and management.
- Manage important sites to identify, control and reduce the spread of invasive species.
- Manage disturbance at important sites which are subject to anthropogenic disturbance when bar-tailed godwit (northern Siberian) are present – e.g. discourage or prohibit vehicle access, horse riding and dogs on beaches, implement temporary site closures.

**Survey and monitoring priorities**

- Enhance existing migratory shorebird population monitoring programmes, particularly to improve coverage across northern Australia.
- Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.

**Information and research priorities**

- Undertake work to more precisely assess bar-tailed godwit (northern Siberian) life history, population size, distribution and ecological requirements particularly across northern Australia.
- Improve knowledge about dependence of bar-tailed godwit (northern Siberian) on key migratory staging sites, and non-breeding sites to the in south-east Asia.
- Improve knowledge about threatening processes including the impacts of disturbance and hunting.

**Recommendations**

(i) The Committee recommends that the list referred to in section 178 of the EPBC Act be amended by **including** in the list in the Critically Endangered category:

*Limosa lapponica menzbieri*

(ii) The Committee recommends that there not be a recovery plan for this species.

Threatened Species Scientific Committee

01/03/2016

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