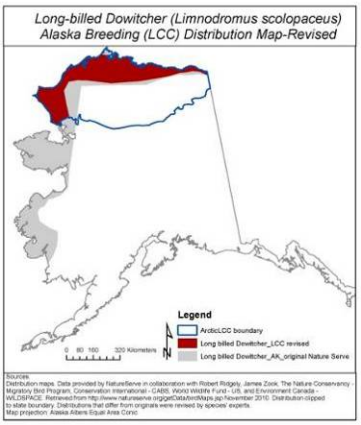
Long-billed Dowitcher (*Limnodromus scolopaceus*)

Vulnerability: **Presumed Stable** Confidence: Low

The Long-billed Dowitcher is a medium-sized shorebird that commonly breeds on the Arctic Coastal Plain of Alaska. This species nests in higher densities in the western portion of the coastal plain compared to the east (Johnson et al. 2007). They prefer wet grassy meadows for nesting often showing an affinity for sedge-willow, wet meadow or sedge marsh along drainages or near ponds (Takekawa and Warnock 2000). Long-billed Dowitchers generally migrate west of the Mississippi River and winter primarily along the Pacific and Gulf Coasts of North America into Mexico (Takekawa and Warnock 2000). Current population estimate of the North American population is 400,000 (Morrison et al. 2006).

Range: We used the extant NatureServe range map for the assessment as it closely matched that of the Birds of North America as well as other range descriptions (Johnson et al. 2007, Bart et al. 2012).

Physiological Hydro Niche: Among the indirect exposure and sensitivity factors in the assessment (see table on next page), Long-billed Dowitchers ranked "neutral", in many categories. In the physiological hydrologic niche category, the ranking ranged from neutral to greatly increased vulnerability. This range represents uncertainty both in the direction and intensity of change in Arctic hydrology, as well as in the effect this will have on dowitchers. Significant tundra drying could have a considerable negative effect, given that this species primarily depends on wet tundra habitats for nesting and foraging in Alaska, as well as in other parts of their range (Takekawa and Warnock 2000). Current models for the Alaskan Arctic generally project a greater potential drying in the western coastal plain (http://www.snap.uaf.edu/), which is also where Long-billed Dowitchers' have highest nest densities (Johnson et al. 2007). Current projections of annual potential evapotranspiration suggest negligible atmospheric-driven drying for the foreseeable future (TWS and SNAP). Thus atmospheric moisture, as an exposure factor (most influential on the "hydrological niche" sensitivity category), was not heavily weighted in the assessment.



Disturbance Regime: Disturbance regimes, specifically coastal erosion and increased coastal flooding (Jones et al. 2009) have the possibility of negatively impacting both breeding and post-breeding dowitchers. However, such coastal disturbance, as well as thermokarst-mediated changes on the landscape, could create new nesting and foraging habitat. As a case in point, along the coast, dowitchers are often associated with salt ponds (Taylor et al. 2010) and thus could benefit from salt water intrusion from storm events. More tundra fires (Racine et al. 2004) could theoretically reduce nesting and foraging habitat but tundra fires are relegated to inland areas at this point so they would likely not significantly impact dowitcher habitats in Alaska soon.

Dietary Versatility: This species has an omnivorous diet and current evidence suggests they take advantage of a wide variety of prey

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Vulnerability Factors	D	SD	N	SI	I	GI	Unknown or N/A
B1. Sea level rise			*				
B2a. Natural barriers			*				
B2b. Anthropogenic barriers			*				
B3. Human response to CC			*	*			
C1. Dispersal/Movement			*				
C2ai. Historical thermal niche (GIS)			*				
C2aii. Physiological thermal niche			*	*			
C2bi. Historical hydro niche (GIS)				*			
C2bii. Physiological hydro niche			*	*	*	*	
C2c. Disturbance regime		*	*	*	*		
C2d. Ice & Snow habitats			*				
C3. Physical habitat restrictions		*					
C4a. Biotic habitat dependence			*	*			
C4b. Dietary versatility		*	*				
C4d. Biotic dispersal dependence			*				
C4e. Interactions with other species			*	*			
C5a. Genetic variation							*
C5b. Genetic bottlenecks			*				
C6. Phenological response		*	*	*			*
D1. CC-related distribution response							*

D=Decrease vulnerability, SD=Somewhat decrease vulnerability, N=Neutral effect, SI=Slightly increase vulnerability, I=Increase vulnerability, GI=Greatly increase vulnerability.

(Takekawa and Warnock 2000) so they would likely not face any negative impacts from a changing prey base.

Interactions with Other Species: Climate change may reduce the amplitude of lemming cycles (Ims and Fuglei 2005) and thus could expose this species to greater nest predation pressure if lemmings become less available as alternative prey. Also, this species will communally feed and flock with other shorebirds during breeding and migration, as well as join other shorebird species in mobbing potential predators during the nesting season (Takekawa and Warnock 2000). It is unknown if these behaviors increase species persistence.

In summary, despite some vulnerability, overall, Long-billed Dowitchers will likely be able to compensate for climate-changes and remain "stable" at least during the timeframe of this assessment (next 50 years).

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From: Liebezeit et al. 2012. Assessing Climate Change Vulnerability of Breeding Birds in Arctic Alaska. A report prepared for the Arctic Landscape Conservation Cooperative. Wildlife Conservation Society, North America Program, Bozeman, MT., 167pp.