Western toad

Anaxyrus boreas

Class: Amphibia
Order: Anura

Review Status: Peer-reviewed **Version Date:** 23 April 2018

Conservation Status

NatureServe:	*Agency:*		
G Rank: G4	ADF&G: Species of Greatest Conservation Need	IUCN: Least Concern	Audubon AK:
S Rank: S3S4	USFWS:	BLM:	

Final Rank

Conservation category: **V. Orange**

unknown status and either high biological vulnerability or high action need

Category	Range	Score
Status	-20 to 20	0
Biological	-50 to 50	-28
Action	-40 to 40	12

Higher numerical scores denote greater concern

Status - variables measure the trend in a taxon's population status or distribution. Higher status scores denote taxa with known declining trends. Status scores range from -20 (increasing) to 20 (decreasing). **Score**

Population Trend in Alaska (-10 to 10) 0

In Alaska, seems to undergo large population fluctuations, which makes it difficult to reliably assess trends. Localized long-term declines appear to have occurred in some areas of southeast AK including Haines, Ketchikan, and Skagway (Anderson 2004; Adams et al. 2007; MacDonald 2010). However, it is unknown whether these observations represent ongoing declines or whether they are low points in the population's cycle. Until additional information is available, we rank this question as Unknown.

Distribution Trend in Alaska (-10 to 10) 0

Unknown.

Status Total: 0

Biological - variables measure aspects of a taxon's distribution, abundance and life history. Higher biological scores suggest greater vulnerability to extirpation. Biological scores range from -50 (least vulnerable) to 50 (most vulnerable). **Score**

Population Size in Alaska (-10 to 10) -6

Unknown, but suspected large. The western toad has a fairly large range in Alaska and is often the most commonly reported amphibian in surveys (Anderson 2004; Ream 2016; Ream et al. 2019) Surveys at two sites in southeast Alaska recorded 1,263 adult individuals and estimated >100,000 tadpoles (Table 4.2 in Ream 2016).

Range Size in Alaska (-10 to 10) -8

Year-round resident on mainland and islands of southern Alaska, north to and including Prince William Sound (Anderson 2004; MacDonald 2010; Ream 2016). Their northern range includes Cordova, Tatitlek, Valdez, Chenega Bay and many islands in PWS (Ream 2016; ACCS 2017a; J. Ream, USFWS, pers. comm.). Estimated range size is ~170,000 sq. km. (ACCS 2017a).

Population Concentration in Alaska (-10 to 10) -10

Can congregate in large numbers during hibernation and during the breeding season (Carstensen et al. 2003; MacDonald 2010; Ream 2016). However, given its relatively large population and range size, we estimate that there are >250 sites in the state.

Reproductive Potential in Alaska

Age of First Reproduction (-5 to 5) 1

Western toads reach sexually maturity between 4 to 6 years old (Olson 1988; Carey 1993).

Number of Young (-5 to 5) 0

In Alaska, females can lay over 5,000 eggs and appear to breed every 2 to 3 years (Pyare et al. 2004; Bull and Carey 2008). However, as with other amphibians, survivorship of young is likely much lower (M. Spangler, UAF, pers. comm.; see pages 34-35 in Patla et al. 2005) and there is some evidence to suggest that amphibians do not recover as quickly as we would expect given their fecundity (Murray et al. 2009; Pilliod et al. 2010). Rather than inflate our assessment of reproductive potential, we cautiously rank this question as 0- Unknown until estimates of survivorship are available.

Ecological Specialization in Alaska

Dietary (-5 to 5) 0

Little is known about the diet of western toads in Alaska or elsewhere. In Oregon, they feed on small invertebrates such as beetles and ants (Bull 2006). We rank this question as 0- Unknown because we feel that the information available is too scant to assess dietary specialization.

Habitat (-5 to 5) -5

Found in a variety of habitats including forests, wetlands, high-elevation sites, and anthropogenic areas (Waters 1992; Carstensen et al. 2003; Anderson 2004; Moore et al. 2011). Breeding habitat is equally flexible and includes freshwater and saline ponds, streams, fjords, and ditches with aquatic vegetation (Waters 1992; Carstensen et al. 2003; Moore et al. 2011; Holmes 2015; Ream 2016). Overwinters in burrows and natural crevices in forests and hummocks (Pyare et al. 2004; Browne and Paszkowski 2010).

Biological Total: -28

Action - variables measure current state of knowledge or extent of conservation efforts directed toward a given taxon. Higher action scores denote greater information needs due of lack of knowledge or conservation action. Action scores range from -40 (lower needs) to 40 (greater needs). **Score**

Management Plans and Regulations in Alaska (-10 to 10) 10

Not managed or protected in the state of Alaska. A permit is required to collect specimens for scientific or educational purposes (ADF&G 2004).

Knowledge of Distribution and Habitat in Alaska (-10 to 10) -10

Distirbution and habitat associations are well-known from amphibian surveys conducted in several areas of this species' range (e.g. Waters 1992; Carstensen et al. 2003; Anderson 2004; MacDonald 2010; Gotthardt et al. 2015; Surdyk and Waldo 2018; Ream et al. 2019). Habitat assessments specific to the western toad have also been conducted (Pyare et al. 2007).

Knowledge of Population Trends in Alaska (-10 to 10) 2

Western toads are monitored at two sites by Klondike Gold Rush National Monument and the Alaska Herpetological Society's Stikine Long-term Amphibian Monitoring Program (SLAMP) (J. Ream, USFWS, pers. comm.). However, monitoring sites only cover a small part of this species' range and data collected are currently inadequate for detecting statewide population trends.

Knowledge of Factors Limiting Populations in Alaska (-10 to 10) 10

Little is known about the ecology of this species in Alaska. Potential threats include diseases and pathogens, competition with non-native species (e.g. the red-legged frog), climate change, and human development (Blaustein et al. 2001; Carey et al. 2005; Olson et al. 2009; MacDonald 2010). Chytrid fungus has been reported in several populations of southeast Alaska (Adams et al. 2007; MacDonald 2010; Surdyk and Waldo 2018). Moore et al. (2011) found that roads had little effect on the movement and connectivity of western toads in southeast Alaska.

Action Total: 12

Supplemental Information - variables do not receive numerical scores. Instead, they are used to sort taxa to answer specific biological or management questions.

Harvest:	Not substantial
Seasonal Occurrence:	Year-round
Taxonomic Significance:	Monotypic species
% Global Range in Alaska:	<10%
% Global Population in Alaska:	<25%
Peripheral:	No

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