

## 5-YEAR REVIEW

Short Form Summary

**Species Reviewed:** *Poa sandvicensis* (Hawaiian bluegrass)

**Current Classification:** Endangered

### **Federal Register Notice announcing initiation of this review:**

[USFWS] U.S. Fish and Wildlife Service. 2020. Endangered and Threatened Wildlife and Plants; Initiation of 5-Year Status reviews for 129 Species in Oregon, Washington, Idaho, Hawaii, Montana, California, and Nevada. Federal Register 85(48): 14240–14243, March 11, 2020.

### **Lead Region/Field Office:**

Interior Region 12/Pacific Islands Fish and Wildlife Office (PIFWO), Honolulu, Hawai‘i

### **Name of Reviewer:**

Cheryl Phillipson, Biologist, PIFWO

Lauren Weisenberger, Plant Recovery Coordinator, PIFWO

Megan Laut, Conservation & Restoration Team Manager, PIFWO

### **Methodology used to complete this 5-year review:**

This review was conducted by staff of the Pacific Islands Fish and Wildlife Office (PIFWO) of the U.S. Fish and Wildlife Service (Service or USFWS) beginning in October 2021. The review was based on a review of current, available information since the last 5-year review for *Poa sandvicensis* (USFWS 2017). The evaluation by Cheryl Phillipson, Biologist, was reviewed by Lauren Weisenberger, Plant Recovery Coordinator, and Megan Laut, Conservation and Restoration Team Manager.

### **Background:**

For information regarding the species’ listing history and other facts, please refer to the Fish and Wildlife Service’s Environmental Conservation On-line System (ECOS) database for threatened and endangered species (<https://ecos.fws.gov/ecp/species/6402>).

### **Review Analysis:**

Please refer to the previous 5-year reviews for *Poa sandvicensis* published in the Federal Register on August 27, 2010, and September 17, 2017 (available at [http://ecos.fws.gov/docs/tess/species\\_nonpublish/1605.pdf](http://ecos.fws.gov/docs/tess/species_nonpublish/1605.pdf) and [http://ecos.fws.gov/docs/tess/species\\_nonpublish/2489.pdf](http://ecos.fws.gov/docs/tess/species_nonpublish/2489.pdf)) for a complete review of the species’ status, threats, management efforts, and references cited. We are not aware of any significant new information regarding the species’ biological status since listing to warrant a change in the Federal listing status of *P. sandvicensis*.

This short-lived perennial grass in the Poaceae (grass) family is listed as endangered and is known from the island of Kaua‘i. The status and trends for *Poa sandvicensis* are provided in the tables below.

New Status Information:

- In 2017, there were 2,000 to 2,500 wild individuals of *Poa sandvicensis* on Kaua'i (USFWS 2017). Currently, the estimated number of wild individuals remains the same with populations at Awa'awapuhi, Kōke'e (Kumuwela), Mōhihi and the Mōhihi-Wai'alae trail, Koai'e, Kawai Iki, and Wai'alae (Flynn et al. 2021).

New Threats:

- None reported.

New Management Actions:

- Surveys and monitoring—The National Tropical Botanical Garden (NTBG) surveys for and monitors wild populations of *Poa sandvicensis* on Kaua'i (NTBG 2018, 2019).

**Table 1. Status and trends of *Poa sandvicensis* from listing through current 5-year review.**

Date	No. wild individuals	No. outplanted	Downlisting Criteria identified in Recovery Plan	Downlisting Criteria Completed?
1992 (listing)	40	0	All threats managed in all 5–7 populations	No
			Complete genetic storage	No
			5–7 populations with 300 mature individuals each	No
			Naturally reproducing, stable, and increasing in number	Unknown
			Stable for 5 consecutive years	No
1995 (recovery plan)	<1,000	0	All threats managed in all 5–7 population	No
			Complete genetic storage	Partially
			5–7 populations with 300 mature individuals each	Yes
			Naturally reproducing, stable, and increasing in number each	Unknown

			Stable for 5 consecutive years	Unknown
2003 (critical habitat)	1,321	0	All threats managed in all 5–7 populations	No
			Complete genetic storage	Partially
			5–7 populations with 300 mature individuals each	No
			Naturally reproducing and increasing in number each	Unknown
			Stable for 5 consecutive years	Unknown
2010 (5-year review)	1,200–6,000	0	All threats managed in all 5–7 populations	No
			Complete genetic storage	Partially
			5–7 populations with 300 mature individuals each	No
			Naturally reproducing, stable, and increasing in number	Unknown
			Stable for 5 consecutive years	Unknown
<b>Date</b>	<b>No. wild individuals</b>	<b>No. outplanted</b>	<b>Interim Criteria identified by HPPRCC</b>	<b>Interim Criteria Completed?</b>
2017 (5-year review)	2,000–2,500	0	All threats managed in all 3 populations	No
			Complete genetic storage	Initiated
			Replacement regeneration (seedlings become mature plants) at all 3 populations	Unknown
			3 populations with 300 mature individuals each	Unknown
2022 (5-year review)	2,500	0	All threats managed in all 3 populations	No

			Complete genetic storage	No
			Replacement regeneration (seedlings become mature plants) at all 3 populations	Partially
			3 populations with 300 mature individuals each	Partially, 2 populations >300

**Table 2. Threats to *Poa sandvicensis* and ongoing conservation efforts.**

Threat	Listing factor	Current Status	Conservation/ Management Efforts
Destruction and degradation of habitat by feral ungulates	A	Ongoing	None
Established ecosystem altering invasive plant species degradation of habitat	A	Ongoing	None
Landslide destruction and degradation of habitat	A	Ongoing	None
Climate change degradation and destruction of habitat, including hurricanes	A	Ongoing	None
Human disturbance—Hiking and trail maintenance impacts	E	Ongoing	None

**Synthesis:**

Currently, there are estimated to be 2,500 wild individuals of *Poa sandvicensis* on Kaua‘i. There are no collections or propagation. None of the populations are within exclosures or managed. There are no reintroductions.

Stabilizing (interim), downlisting, and delisting objectives are provided in the Kaua‘i Islandwide Recovery Plan (USFWS 2021) and have been updated according to the draft revised recovery objective guidelines developed by the Hawai‘i and Pacific Plants Recovery Coordinating Committee (HPPRCC 2011). The HPPRCC identifies an additional initial objective, the Preventing Extinction Stage, in addition to the Interim Stabilization, Delisting, and Downlisting objectives. Furthermore, life history traits such as breeding system, population size fluctuation or decline, and reproduction type (sexual or vegetative), have been included in the calculation of goals for the number of populations and reproducing individuals for each stage. The goals for each stage remain grouped by life span defined as annual, short-lived perennial (fewer than 10 years), or long-lived perennial.

*Poa sandvicensis* is a short-lived perennial grass. To reach interim stabilization goals, the second step in recovering the species, the taxon must be managed to control threats (e.g.,

fenced) and have 50 individuals (or the total number of individuals if fewer than 50 exist) from each of three populations *adequately* represented in *ex situ* (secured off-site, such as a nursery or seed bank) collections that are well managed. In addition, a minimum of a total of three populations of 300 mature individuals each should be documented on Kaua‘i where the species now occurs or occurred historically and each of these populations must demonstrate regeneration of seedlings and growth to at least sapling stage for woody species and documented regeneration within each of the target populations.

The interim stabilization goals for *Poa sandvicensis* have not been met. Although there are estimated to be 2,500 wild individuals, only two populations total more than 300 mature individuals (Table 1). There are no recent collections or propagative materials and no reintroductions (Table 1). In addition, not all threats are being addressed (Table 2). Therefore, *P. sandvicensis* meets the definition of Endangered as it remains in danger of extinction throughout its range.

### **Recommendations for Future Actions:**

No new threats and no significant new information regarding the species' biological status have been reported since the last 5-year review in 2017. Thus, the following recommendations for future actions are reiterated or updated for the 5-year review for 2022.

- Surveys and inventories—Continue to survey for populations of *Poa sandvicensis* in areas of potentially suitable habitat and monitor known occurrences to determine current status.
- Feral ungulate monitoring and control—Construct and maintain exclosures and strategic fencing to protect occurrences against disturbance and herbivory by feral ungulates.
- Nonnative invasive plant monitoring and control—Control established ecosystem-altering nonnative invasive plant species at all populations of *P. sandvicensis*.
- Climate change adaptation strategy—Research suitability of habitat for viability of species, including where to conduct translocations in the future due to impacts of climate change, including hurricanes.
- Captive propagation for genetic storage and reintroduction—Continue collection and propagation efforts for maintenance of genetic stock.
- Reintroduction and augmentation—Reintroduce individuals into protected suitable habitat that is being managed for known threats to this species.
- Human interaction management and monitoring—Develop and implement effective measures to reduce impacts of hikers and trail maintenance.
- Build resiliency and redundancy—Increase numbers of individuals and populations to reduce impacts of climate change, hurricanes, and landslides.
- Population biology research—Study *P. sandvicensis* populations to determine viable population size and structure, geographical distribution, flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, limiting factors, and threats.

- Alliance and partnership development—Continue to work with partners and other land managers in planning and implementation of ecosystem-level restoration and management to benefit this species.

**References:**

- Flynn, T., S. Walsh, B. Nyberg, and K. Wood. 2021. *Poa sandvicensis*. The IUCN Red List of Threatened Species 2021: e.T80176878A80176907.  
<https://dx.doi.org/10.2305/IUCN.UK.2021-1.RLTS.T80176878A80176907.en>.
- [HPPRCC] Hawai‘i and Pacific Plants Recovery Coordinating Committee. 2011. Revised recovery objective guidelines. 8 pp.
- [NTBG] National Tropical Botanical Garden. 2018. NTBG database herbarium record detail for *Poa sandvicensis*, PTBG1000069109, 079796, 27 JUN 2018.
- [NTBG] 2019. NTBG database herbarium record detail for *Poa sandvicensis*, PTBG1000068195 and PTBG1000068193, 079907 and 18187, 8 MAY 2019, 9 MAY 2019.
- [NTBG] 2019. Report on controlled propagation of listed species, as designated under the U.S. Endangered Species Act. Unpublished report submitted to the U.S. Fish and Wildlife Service, Pacific Islands Fish and Wildlife Office, Honolulu, Hawai‘i.
- [USFWS] U.S. Fish and Wildlife Service. 2010. *Poa sandvicensis* 5-year review summary and evaluation. USFWS Pacific Islands Fish and Wildlife Office, Honolulu, HI. [https://ecos.fws.gov/docs/tess/species\\_nonpublish/1606.pdf](https://ecos.fws.gov/docs/tess/species_nonpublish/1606.pdf).
- [USFWS] 2017. *Poa sandvicensis* 5-year review summary and evaluation. USFWS Pacific Islands Fish and Wildlife Office, Honolulu, HI.  
[https://ecos.fws.gov/docs/tess/species\\_nonpublish/2489.pdf](https://ecos.fws.gov/docs/tess/species_nonpublish/2489.pdf).
- [USFWS] 2020. Endangered and threatened wildlife and plants; initiation of 5-year status reviews for 129 Species in Oregon, Washington, Idaho, Hawaii, Montana, California, and Nevada. Federal Register 85(48): 14240–14243, March 11, 2020.
- [USFWS] 2021. Kaua‘i Islandwide Recovery Plan. U.S. Fish and Wildlife Service, Portland, OR. 65 pp. + appendices.

**U.S. FISH AND WILDLIFE SERVICE**  
SIGNATURE PAGE for 5-YEAR REVIEW of *Poa sandvicensis*  
(Hawaiian bluegrass)

**Pre-1996 DPS listing still considered a listable entity?**   N/A  

**Recommendation resulting from the 5-year review:**

- Delisting
- Reclassify from Endangered to Threatened status
- Reclassify from Threatened to Endangered status
- X   No Change in listing status

**For Field Supervisor, Pacific Islands Fish and Wildlife Office**

\_\_\_\_\_ Date \_\_\_\_\_