

**Davis's Green Pitaya**  
***Echinocereus viridiflorus* var. *davisii* Houghton**

**5-Year Review:**  
**Summary and Evaluation**

**U.S. Fish and Wildlife Service**  
**Austin Ecological Services Field Office**  
**Austin, Texas**

**5-YEAR REVIEW**  
**Davis's Green Pitaya (*Echinocereus viridiflorus* var. *davisii* Houghton)**

**1.0 GENERAL INFORMATION**

**1.1 Listing History**

**Species:** *Echinocereus viridiflorus* var. *davisii*

**Date listed:** November 7, 1979

**FR citation(s):** 44 Federal Register, 64738

**Classification:** Endangered without critical habitat

**Critical habitat/4(d) rule/Experimental population designation/Similarity of appearance listing:**

Critical habitat was not designated. There were no other rules.

**1.2 Methodology used to complete the review:**

The U.S. Fish and Wildlife Service (USFWS) previously evaluated the biology and status of Davis's green pitaya in 2012 (USFWS 2012). We announced the current 5-year review in the Federal Register on March 19, 2020. We requested new information from the Texas Parks and Wildlife Department (TPWD) Natural Diversity Database (TXNDD 2020) and reviewed monitoring reports, scientific publications, unpublished documents, personal communications from botanists familiar with the species, and Internet web sites. We determined that no new information has become available since the previous 5-year review. The 5-year review was prepared without peer review by personnel of the Austin Ecological Services Field Office.

**1.3 FR Notice citation announcing the species is under active review:**

85 FR 15795: Endangered and Threatened Wildlife and Plants; Initiation of 5-Year Status Reviews of 10 Species in Arizona, Arkansas, Kansas, Missouri, New Mexico, Oklahoma, Texas, and Mexico. March 19, 2020.

**2.0 REVIEW ANALYSIS**

**2.1 Updated Information and Current Species Status**

**2.1.1 Biology and Habitat:**

No new information has become available since the previous 5-year review.

### **2.1.2 Threats Analysis (threats, conservation measures, and regulatory mechanisms):**

The Recovery Plan (U.S. Fish and Wildlife Service 1984) lists the following existing and potential threats to the conservation and recovery of Davis's green pitaya: Over-collection by commercial and private cactus collectors, trampling by livestock, competition from other plant species, and the narrow endemic restriction to a small portion of a single mineral formation. The threats analysis included in the 5-year review we conducted in 2012, as summarized below, remains applicable.

Factor A: Present or threatened destruction, modification or curtailment of its habitat or range.

The degree of threats from livestock trampling, wildfire and prescribed burning, herbicides used for brush control, and novaculite mining are relatively minor.

Factor B: Overutilization for commercial, recreational, scientific, or educational purposes.

Over-collection for commercial and recreational purposes continues to be the major threat to this species.

Factor C: Disease or predation.

Herbivory by insects, rodents, and perhaps other animals constitutes a potential threat to Davis's green pitaya; we recommend periodic monitoring of the wild populations to determine the degree of this threat.

Factor E: Other natural or manmade factors affecting its continued existence.

The species is potentially threatened by climate changes, but we cannot currently project the severity or net effect of climate changes on the species and its habitat. Therefore, we will adapt our recovery and management strategies when necessary to address the changing conditions. However, our ability to make sound decisions will depend on periodic, verifiable monitoring of the species' wild populations.

### **2.2 Synthesis:**

We reviewed the best available scientific information and evaluated threats affecting the species under the factors in 4(a)(1) of the Endangered Species Act. The analysis of the species' status in our previous 5-year review (USFWS 2012) remains an accurate assessment of the species current status. We conclude that Davis's green pitaya should continue to be classified as an endangered species.

### 3.0 RESULTS

#### 3.1 Recommended Classification:

**Downlist to Threatened**

**Uplist to Endangered**

**Delist** (Indicate reasons for delisting per 50 CFR 424.11):

*The species is extinct*

*The species does not meet the definition of an endangered species or a threatened species (i.e., is recovered, or new information on status and threats indicate species does not meet definitions)*

*The listed entity does not meet the statutory definition of a species.*

**No change is needed**

#### 3.2 New Recovery Priority Number and rationale:

No change; recovery priority number remains as 3, meaning the degree of threat is high, the recovery potential is high, and the taxon is a subspecies.

#### 3.3 Listing and Reclassification Priority Number:

Not applicable.

### 4.0 RECOMMENDATIONS FOR FUTURE ACTIONS

The 2012 5-year review recommended revising the recovery plan to establish both downlisting and delisting criteria that comply with updated recovery planning guidance. We have now amended the recovery plan and recovery criteria (USFWS 2019). The other recommendations from the 2012 5-year review have not been accomplished, and are continued here:

- Explore means to monitor the species and its habitats that are acceptable to landowners in the Marathon Basin as well as scientifically verifiable. Specific objectives should include a more complete determination of the species' ranges, distributions, population sizes, demographic trends, and threats.
- Support conservation of wild populations on private lands with willing landowners through the USFWS Partners for Fish and Wildlife Program, section 6-funded grants, cooperative efforts with Natural Resources Conservation Service, or non-governmental partners. Establish a private landowner support group for conservation of the Caballos novaculite rare plants, similar to the group now actively working to conserve Texas snowbells (*Styrax platanifolius* ssp. *texanus*).
- Support continued research on the population dynamics, reproductive biology, and genetic structure of the wild populations.

## 5.0 LITERATURE CITED

- U.S. Fish and Wildlife Service. 1984. Davis' Green Pitaya Cactus Recovery Plan. U.S. Fish and Wildlife Service, Albuquerque, NM. iii + 34 pp.
- U.S. Fish and Wildlife Service. 2012. Davis's Green Pitaya (*Echinocereus viridiflorus* var. *davisii* Houghton) and Nellie's Cory Cactus (*Escobaria minima* (Baird) D.R. Hunt (Syn. *Coryphantha minima* Baird)) Five-Year Review: Summary and evaluation. Austin Ecological Services Field Office, Austin, Texas. 37 pp.
- U.S. Fish and Wildlife Service. 2019. Recovery Plan for *Echinocereus viridiflorus* var. *davisii* (Houghton) W.T. Marshall (Davis's Green Pitaya). Amendment 1. U.S. Fish and Wildlife Service Region 2, Albuquerque, New Mexico. September 2019. 10 pp. + 1 appendix.
- Texas Natural Diversity Database. 2020. Element Occurrence records for *Echinocereus davisii*. July 20, 2020. 2 pp.

**U.S. FISH AND WILDLIFE SERVICE  
5-YEAR REVIEW of DAVIS'S GREEN PITAYA**

**Current Classification:** Endangered.

**Recommendation resulting from the 5-Year Review:**

- Downlist to Threatened
- Uplist to Endangered
- Delist
- No change needed

**Appropriate Listing/Reclassification Priority Number, if applicable:**

Not applicable.

**FIELD OFFICE APPROVAL:**

**Lead Field Supervisor, Fish and Wildlife Service, Austin Ecological Services Field Office**

Approve \_\_\_\_\_

Date \_\_\_\_\_