

Table 1. Extinct and possibly extinct species last seen before listing under the Endangered Species Act.

Common Name	Scientific	Listed	Last Seen	Status	NS/IUCN	Taxonomic Group	Region	Source
Oahu tree snail	<i>Achatinella buddii</i>	1981	~1900	Possibly extinct	GX/EX	Mollusk	Hawaii and Pacific I	USFWS 1992, 2011a
Oahu tree snail	<i>Achatinella casta</i>	1981	<1900	Possibly extinct	GX/EX	Mollusk	Hawaii and Pacific I	USFWS 2011a
Oahu tree snail	<i>Achatinella caesia</i>	1981	~1900	Possibly extinct	GX/EX	Mollusk	Hawaii and Pacific I	USFWS 1992, 2011a
Oahu tree snail	<i>Achatinella cestus</i>	1981	1966	Possibly extinct	G1 TH/CR	Mollusk	Hawaii and Pacific I	USFWS 2011a
Oahu tree snail	<i>Achatinella decora</i>	1981	1900	Possibly extinct	GX/EX	Mollusk	Hawaii and Pacific I	USFWS 2011a
Oahu tree snail	<i>Achatinella dimorpha</i>	1981	1967	Possibly extinct	GH/EX	Mollusk	Hawaii and Pacific I	USFWS 2011a
Oahu tree snail	<i>Achatinella elegans</i>	1981	1952	Possibly extinct	G1 TH/EX	Mollusk	Hawaii and Pacific I	USFWS 2011a
Oahu tree snail	<i>Achatinella juddii</i>	1981	1958	Possibly extinct	GH/EX	Mollusk	Hawaii and Pacific I	USFWS 2011a
Oahu tree snail	<i>Achatinella juncea</i>	1981	Unknown	Possibly extinct	GH/EX	Mollusk	Hawaii and Pacific I	USFWS 2011a
Oahu tree snail	<i>Achatinella lehuiensis</i>	1981	1922	Possibly extinct	GX/EX	Mollusk	Hawaii and Pacific I	USFWS 2011a
Oahu tree snail	<i>Achatinella lorata</i>	1981	1979	Possibly extinct	GH/CR	Mollusk	Hawaii and Pacific I	USFWS 2011a
Oahu tree snail	<i>Achatinella papyracea</i>	1981	<1945	Possibly extinct	GX/EX	Mollusk	Hawaii and Pacific I	USFWS 1992, 2011a
Oahu tree snail	<i>Achatinella phaeozona</i>	1981	1974	Possibly extinct	GH/CR	Mollusk	Hawaii and Pacific I	USFWS 1992, 2011a
Oahu tree snail	<i>Achatinella pupukanioe</i>	1981	1980	Possibly extinct	GH/CR	Mollusk	Hawaii and Pacific I	USFWS 2011a
Oahu tree snail	<i>Achatinella rosea</i>	1981	1949	Possibly extinct	G1 TX/EX	Mollusk	Hawaii and Pacific I	USFWS 1992, 2011a
Oahu tree snail	<i>Achatinella spaldingi</i>	1981	1938	Possibly extinct	GX/EX	Mollusk	Hawaii and Pacific I	USFWS 1992, 2011a
Oahu tree snail	<i>Achatinella swiftii</i>	1981	1970's	Possibly extinct	GH/CR	Mollusk	Hawaii and Pacific I	USFWS 1992, 2011a
Oahu tree snail	<i>Achatinella taeniolata</i>	1981	1966	Possibly extinct	GH/CR	Mollusk	Hawaii and Pacific I	USFWS 1992, 2011a
Oahu tree snail	<i>Achatinella thanumi</i>	1981	1900	Possibly extinct	GX/EX	Mollusk	Hawaii and Pacific I	USFWS 1992, 2011a
Oahu tree snail	<i>Achatinella turgida</i>	1981	1974	Possibly extinct	GX/CR	Mollusk	Hawaii and Pacific I	USFWS 1992, 2011a
Oahu tree snail	<i>Achatinella valida</i>	1981	1951	Possibly extinct	GX/EX	Mollusk	Hawaii and Pacific I	USFWS 1992, 2011a
Oahu tree snail	<i>Achatinella viridans</i>	1981	1979	Possibly extinct	GH/CR	Mollusk	Hawaii and Pacific I	USFWS 1992, 2011a
Oahu tree snail	<i>Achatinella vittata</i>	1981	1953	Possibly extinct	G1 TH/EX	Mollusk	Hawaii and Pacific I	USFWS 1992, 2011a
Oahu tree snail	<i>Achatinella vulpina</i>	1981	1965	Possibly extinct	GH/CR	Mollusk	Hawaii and Pacific I	USFWS 1992, 2011a
Oahu tree snail	<i>Achatinella bellula</i>	1981	1981	Possibly extinct	GH/CR	Mollusk	Hawaii and Pacific I	USFWS 2011a
Kauai 'akialoa	<i>Akialoa stejnegeri</i>	1967	1965	Possibly extinct	GX/EX	Bird	Hawaii and Pacific I	USFWS 2009
Brown's pigweed	<i>Amaranthus brownii</i>	1996	1983	Possibly extinct	G1/CR	Plant	Hawaii and Pacific I	USFWS 2017a
Culebra Island giant anole	<i>Anolis roosevelti</i>	1977	1932	Possibly extinct	NA/CRPE	Reptile	Southeast	USFWS 2014a
Ivory-billed woodpecker	<i>Campephilus principalis</i>	1967	1944	Possibly extinct	G1/CRPE	Bird	Southeast	USFWS 2010a
Longjaw cisco	<i>Coregonus alpenae</i>	1967	1967	Extinct, delisted	NA/EX	Fish	Midwest	USFWS 1983a
Haha (<i>Cyanea copelandii</i> ssp. <i>copelandii</i>)	<i>Cyanea copelandii</i> ssp. <i>copelandii</i>	1994	1957	Possibly extinct	G1TH/EX	Plant	Hawaii and Pacific I	USFWS 2012
Long-foot cyanea	<i>Cyanea dolichopoda</i>	2010	1990	Possibly extinct	GH/EX	Plant	Hawaii and Pacific I	USFWS 2017b
'Oha (<i>Cyanea eleeleensis</i>)	<i>Cyanea eleeleensis</i>	2010	1977	Possibly extinct	GH/EX	Plant	Hawaii and Pacific I	USFWS 2017c
Haha	<i>Cyanea kolekoleensis</i>	2010	1998	Possibly extinct	G1/CRPE	Plant	Hawaii and Pacific I	USFWS 2017d
Haha	<i>Cyanea kuhihewa</i>	2010	2001	Possibly extinct	GH/CRPE	Plant	Hawaii and Pacific I	USFWS 2017e
Maui cyanea	<i>Cyanea mauiensis</i>	2013	1918	Possibly extinct	GH/EX	Plant	Hawaii and Pacific I	USFWS 2016a
No common name	<i>Cyperus neokunthianus</i>	2016	1996	Possibly extinct	GH/NA	Plant	Hawaii and Pacific I	USFWS 2016a
Tecopa pupfish	<i>Cyprinodon nevadensis calidae</i>	1970	1970	Extinct, delisted	G2TX/NA	Fish	Pacific Southwest	USFWS 1982, Miller et al. 1989
Ha'iwale	<i>Cyrtandra crenata</i>	1994	1947	Possibly extinct	GH/CRPE	Plant	Hawaii and Pacific I	USFWS 2011b
Waiolani Cyrtandra	<i>Cyrtandra waiolani</i>	2012	2005	Possibly extinct	GH/EX	Plant	Hawaii and Pacific I	USFWS 2012b
Opuhe nalo	<i>Drosophila aglaia</i>	2006	1997	Possibly extinct	G1/NA	Arthropod	Hawaii and Pacific I	USFWS 2012c, Magnacca 2018
Picture-wing fly	<i>Drosophila differens</i>	2006	1999	Possibly extinct	G1/NA	Arthropod	Hawaii and Pacific I	USFWS 2018a, Magnacca 2018
Nalo mea hula	<i>Drosophila neoclavisetae</i>	2006	1975	Possibly extinct	G1/NA	Arthropod	Hawaii and Pacific I	USFWS 2018b, Magnacca 2018
Picture-wing fly	<i>Drosophila sharpi</i>	2006	1991	Possibly extinct	G1/NA	Arthropod	Hawaii and Pacific I	USFWS 2017f, Magnacca 2018
Mull's picture-wing	<i>Drosophila tarphytrichia</i>	2006	1997	Possibly extinct	G1/NA	Arthropod	Hawaii and Pacific I	USFWS 2012d, Magnacca 2018
Na'ena'e	<i>Dubautia kenwoodii</i>	2010	1991	Possibly extinct	G1/CRPE	Plant	Hawaii and Pacific I	USFWS 2017g

Yellow-blossom pearly mussel	<i>Epioblasma florentina florentina</i>	1976	1967	Extinct, delisting recommended	G1TX/EX	Mollusk	Southeast	USFWS 2017h
Upland combshell	<i>Epioblasma metastriata</i>	1993	1988	Extinct, delisting recommended	GH/CR	Mollusk	Southeast	USFWS 2008
Southern acornshell	<i>Epioblasma othcaloogensis</i>	1993	1974	Extinct, delisting recommended	GHQ/CR	Mollusk	Southeast	USFWS 2008
Sampson's pearl mussel	<i>Epioblasma sampsonii</i>	1976	1935	Extinct, delisted	GX/EX	Mollusk	Midwest	USFWS 1984
Tuberled blossom	<i>Epioblasma torulosa torulosa</i>	1976	1969	Extinct, delisting recommended	G2TX/EX	Mollusk	Southeast	USFWS 2017h
Turgid blossom pearly mussel	<i>Epioblasma turgidula</i>	1976	1965	Extinct, delisting recommended	GX/EX	Mollusk	Southeast	USFWS 2017h
Amistad gambusia	<i>Gambusia amistadensis</i>	1980	1974	Extinct, delisted	GX/EX	Fish	Southwest	USFWS 1987, Miller et al. 1989
Maui nukupu'u	<i>Hemignathus affinis</i>	1970	1967	Possibly extinct	G1T1/CRP	Bird	Hawaii and Pacific I	USFWS 2006, USFWS 2010 b
Kauai nukupu'u	<i>Hemignathus hanapepe</i>	1967	egs in 1995	Possibly extinct	G1T1/CRP	Bird	Hawaii and Pacific I	USFWS 2006, USFWS 2010b
Santa Barbara song sparrow	<i>Melospiza melodia graminea</i>	1973	1959	Extinct, delisted	G5T1/NA	Bird	Pacific Southwest	USFWS 1983b
West Indian monk seal	<i>Monachus tropicalis</i>	1979	1952	Extinct, delisted	GX/EX	Mammal	Southeast	NMFS 2008
Guam broadbill	<i>Myiagra freycineti</i>	1984	1984	Extinct, delisted	NA/EX	Bird	Hawaii and Pacific I	USFWS 2004
Scioto madtom	<i>Noturus trautmani</i>	1975	1957	Extinct, delisting recommended	GX/EX	Fish	Midwest	USFWS 2009b
Eskimo curlew	<i>Numenius borealis</i>	1967	1963	Possibly extinct	GH/EX	Bird	Alaska	USFWS 2016b
Holei	<i>Ochrosia kilauaeensis</i>	1994	1927	Possibly extinct	GH/CR	Plant	Hawaii and Pacific I	USFWS 2012e
Squirrel Chimney Cave Shrimp	<i>Palaemonetes cummingi</i>	1990	1973	Possibly extinct	GH/CR	Arthropod	Southeast	USFWS 2016c
Molokai creeper	<i>Paroreomyza flammea</i>	1970	1963	Possibly extinct	GH/EX	Bird	Hawaii and Pacific I	USFWS 2015a
Phyllostegia glabra var. lanaiensis	<i>Phyllostegia glabra var. lanaiensis</i>	1991	1914	Possibly extinct	G3TH/NA	Plant	Hawaii and Pacific I	USFWS 2012f
Flat pigtoe	<i>Pleurobema marshalli</i>	1987	1980	Extinct, delisting recommended	GX/CR	Mollusk	Southeast	USFWS 2015b
Little Mariana fruit bat	<i>Pteropus tokudae</i>	1984	1968	Extinct, delisting recommended	NA	Mammal	Hawaii and Pacific I	USFWS 2015c
Eastern cougar	<i>Puma concolor cougar</i>	1973	1938	Extinct, delisted	G5TXQ/C	Mammal	Northeast	USFWS 2018c
Stirrup shell	<i>Quadrula stapes</i>	1987	1984	Extinct, delisting recommended	GH/CR	Mollusk	Southeast	USFWS 2015b
Blue pike	<i>Sander vitreus glaucus</i>	1967	1965	Extinct, delisted	G5TX/NA	Fish	Midwest	USFWS 1983a, Miller et al. 1989
Bachman's warbler	<i>Vermivora bachmanii</i>	1967	1962	Possibly extinct	GH/CR	Bird	Southeast	USFWS 2015d
Guam bridled white-eye	<i>Zosterops conspicillatus conspicill</i>	1984	1983	Extinct, delisting recommended	NA/EX	Bird	Hawaii and Pacific I	USFWS 2015

Literature Cited:

Miller, R.R., Williams, J.D. & Williams, J.E., (1989). Extinctions of North American fishes during the past century. *Fisheries* 14(6):22-38.

National Marine Fisheries Service, (2008). Federal Register, Endangered and Threatened Species; Final Rule to Remove the Caribbean Monk Seal From the Federal List of Endangered and Threatened Wildlife. <https://www.gpo.gov/fdsys/pkg/FR-2008-10-28/pdf/E8-25704.pdf#page>

U.S. Fish and Wildlife Service, (1982). Deregulation of the Tecopa Pupfish. Federal Register, Vol. 47, No 10: 2317-2319. https://ecos.fws.gov/docs/federal_register/fr572.pdf

U.S. Fish and Wildlife Service, (1983a). Deregulation of the Longjaw Cisco and the Blue Pike. September 2, 1983. Federal Register, Vol. 48, No. 172: 39941-39943. https://ecos.fws.gov/docs/federal_register/fr735.pdf

U.S. Fish and Wildlife Service, (1983b). Removal of the Santa Barbara Song Sparrow from the List of Endangered Species. Federal Register, Vol. 48, No. 198: 46336-46337. https://ecos.fws.gov/docs/federal_register/fr754.pdf

U.S. Fish and Wildlife Service, (1984). Removal of *Epioblasma sampsoni*, Sampson's pearly Mussel, from the list of Endangered and Threatened wildlife. Federal Register, Vol. 49, No.5: 1057-1058. https://ecos.fws.gov/docs/federal_register/fr781.pdf

U.S. Fish and Wildlife Service, (1987). Removal of *gambusia amistadensis*, the Amistad Gambusia, From the list of Endangered and Threatened Wildlife. Federal Register, Vol.52, No 233: 46083-46087. https://ecos.fws.gov/docs/federal_register/fr1362.pdf

U.S. Fish and Wildlife Service, (1992). Recovery Plan for the O'ahu tree snails of the genus *Achatinella*. https://esadocs.cci-dev.org/ESAdocs/recovery_plan/920630.pdf

U.S. Fish and Wildlife Service, (2004). Removing the Mariana Mallard and the Guam broadbill from the Federal List of Endangered and Threatened Wildlife. Federal Register, Vol. 69, No. 35: 8116-8119. <https://www.gpo.gov/fdsys/pkg/FR-2004-02-23/pdf/04-3784.pdf#page=1>

U.S. Fish and Wildlife Service, (2006). Revised Recovery Plan for Hawaiian Forest Birds. https://ecos.fws.gov/docs/recovery_plans/2006/060922a_docs/doc760.pdf

U.S. Fish and Wildlife Service, (2008). 5-Year Review, Summary and Evaluation, Upland Combshell (*Epioblasma metastrata*), Southern acornshell (*Epioblasma othcaloogensis*) https://ecos.fws.gov/docs/five_year_review/doc2365.pdf

U.S. Fish and Wildlife Service, (2009a). 5-year Review, Summary and Evaluation, Kaua'i'akialoa (*Hemignathus procerus*, now *Akialoa stejnegeri*). https://ecos.fws.gov/docs/five_year_review/doc2533.pdf

U.S. Fish and Wildlife Service, (2009b). 5-Year Review, Summary and Evaluation, Scioto Madtom (*Noturus trautmani*). https://ecos.fws.gov/docs/five_year_review/doc3057.pdf

U.S. Fish and Wildlife Service, (2010a). Recovery Plan for the Ivory-billed Woodpecker (*Campephilus principalis*). U.S. Fish and Wildlife Service. http://ecos.fws.gov/docs/recovery_plan/100719.pdf

U.S. Fish and Wildlife Service, (2010b). 5-Year Review: Summary and Evaluation, Kaua'i nukupu'u (*Hemignathus lucidus hanapepe*) and Maui nukupu'u (*Hemignathus lucidus affinis*). https://ecos.fws.gov/docs/five_year_review/doc3858.pdf

U.S. Fish and Wildlife Service, (2011a). Oahu tree snails (*Achatinella* spp.) 5-Year Review. https://ecos.fws.gov/docs/five_year_review/doc3903.pdf

U.S. Fish and Wildlife Service, (2011b). 5-Year Review: Short Form Summary, *Cyrtandra crenata* (ha'iwale). https://ecos.fws.gov/docs/five_year_review/doc3819.pdf

U.S. Fish and Wildlife Service, (2012a). 5-Year Review: Summary and Evaluation, *Cyanea copelandii copelandii* (Haha). https://ecos.fws.gov/docs/five_year_review/doc4088.pdf

U.S. Fish and Wildlife Service, (2012b). Federal Register. Endangered and Threatened Wildlife and Plants; Endangered Status for 23 Species on Oahu and Designation of Critical Habitat for 124 Species; Final Rule. Vol. 77 No.181: 57653. <http://www.gpo.gov/fdsys/pkg/FR-2012-09-18/pdf/2012-19561.pdf>

U.S. Fish and Wildlife Service, (2012c). 5-Year Review: Summary and Evaluation, picture-wing fly (*Drosophila aglaia*). https://ecos.fws.gov/docs/five_year_review/doc4103.pdf

U.S. Fish and Wildlife Service, (2012d). 5-Year Review: Summary and Evaluation, Picture-wing fly (*Drosophila tarphytrichia*). https://ecos.fws.gov/docs/five_year_review/doc4092.pdf

U.S. Fish and Wildlife Service, (2012e). 5-Year Review: Summary and Evaluation. *Ochrosia Kilaueaensis* (Holei). https://ecos.fws.gov/docs/five_year_review/doc4071.pdf

U.S. Fish and Wildlife Service, (2012f). 5-Year Review. *Phyllostegia glabra* var. *lanaiensis* (No common name). https://ecos.fws.gov/docs/five_year_review/doc4068.pdf

U.S. Fish and Wildlife Service, (2015a). 5-Year Review: Short Form Summary, Kakawahie or Molokai creeper (*Paroreomyza flammea*). https://ecos.fws.gov/docs/five_year_review/doc4575.pdf

U.S. Fish and Wildlife Service, (2015b). 5-Year Review: Summary and Evaluation, Black Clubshell (*Curtus*' Pearly Mussel), Stirrup shell (*Quadrula stapes*), Flat Pigtoe (Marshall's Pearly Mussel)(*Pleurobema marshalli*). https://ecos.fws.gov/docs/five_year_review/doc4642.pdf

U.S. Fish and Wildlife Service, (2015c). 5-Year Review: Short Form Summary, *Pteropus tokudae* (little Mariana fruit bat) https://ecos.fws.gov/docs/five_year_review/doc4544.pdf

U.S. Fish and Wildlife Service, (2015d). 5-Year Review, Summary and Evaluation, Bachman's Warbler (*Vermivora bachmanii*). https://ecos.fws.gov/docs/five_year_review/doc4548.pdf

U.S. Fish and Wildlife Service, (2015e). 5-Year Review: Short Form Summary, Zosterops conipicillatus conspicillatus (Guam bridled white-eye)
https://ecos.fws.gov/docs/five_year_review/doc4545.pdf

U.S. Fish and Wildlife Service, (2016a). Endangered status for 49 species from the Hawaiian Islands. Federal Register, Vol. 81, No. 190: 67786 -67860.
<https://www.govinfo.gov/content/pkg/FR-2016-09-30/pdf/2016-23112.pdf>

U.S. Fish and Wildlife Service, (2016b). 5-Year Review: Summary and Evaluation, Eskimo Curlew (*Numenius borealis*). https://ecos.fws.gov/docs/five_year_review/doc4866.pdf

U.S. Fish and Wildlife Service. (2016c). 5-Year Review: Summary and Evaluation, Squirrel Chimney Cave Shrimp (*Palaemonetes cummingsi*).
https://ecos.fws.gov/docs/five_year_review/doc5095.pdf

U.S. Fish and Wildlife Service, (2017a). 5-year review, short form summary, *Amaranthus brownii* (No common name). https://ecos.fws.gov/docs/five_year_review/doc5238.pdf

U.S. Fish and Wildlife Service, (2017b). 5-Year Review, *Cyanea dolichopoda*.
https://ecos.fws.gov/docs/five_year_review/doc5247.pdf

U.S. Fish and Wildlife Service, (2017c). 5-Year Review: summary and evaluation, *Cyanea eleeleensis*. https://ecos.fws.gov/docs/five_year_review/doc5248.pdf

U.S. Fish and Wildlife Service, (2017d). 5-Year Review: summary and evaluation, *Cyanea kolekoleensis*. https://ecos.fws.gov/docs/five_year_review/doc5249.pdf

U.S. Fish and Wildlife Service, (2017e). 5-Year Review: summary and evaluation, *Cyanea kuhihewa*. https://ecos.fws.gov/docs/five_year_review/doc5250.pdf

U.S. Fish and Wildlife Service, (2017f). 5-Year Review: summary and evaluation, picture-wing fly (*Drosophilla sharpi*). https://ecos.fws.gov/docs/five_year_review/doc5232.pdf

U.S. Fish and Wildlife Service, (2017g). 5-Year Review: summary and evaluation, *Dubautia Kenwoodii* (Na'ena'e). https://ecos.fws.gov/docs/five_year_review/doc5264.pdf

U.S. Fish and Wildlife Service, (2017h). 5-Year Review: Summary and Evaluation, Green-Blossom pearly mussel (*Epioblasma torulosa gubernaculum*), Tubercled-blossom pearly mussel (*Epioblasma torulosa torulosa*), Turgid-blossom pearly mussel (*Epioblasma turgidula*), Yellow-Blossom pearly mussel (*Epioblasma florentina florentina*).
https://ecos.fws.gov/docs/five_year_review/doc5656.pdf

U.S. Fish and Wildlife Service, (2018a). 5-Year Review: Summary and Evaluation, picture-wing fly (*Drosophila differens*). https://ecos.fws.gov/docs/five_year_review/doc4102.pdf

U.S. Fish and Wildlife Service, (2018b). 5-Year Review: Summary and Evaluation, picture-wing fly (*Drosophila neoclavisetae*) https://ecos.fws.gov/docs/five_year_review/doc4096.pdf

U.S. Fish and Wildlife Service, (2018c). Federal Register, Endangered and Threatened Wildlife and Plants; Removing the Eastern Puma (=cougar) From the Federal List of Endangered and Threatened Wildlife. <https://www.gpo.gov/fdsys/pkg/FR-2018-01-23/pdf/2018-01127.pdf>

Table 2. Extinct or possibly extinct species last seen after listing under the Endangered Species Act.

Common Name	Scientific	Listed	Last Seen	Status	NS/IUCN	Taxonomic Group	Region	Abundance at Listing	Reference
Liliwai	<i>Acaena exigua</i>	1992	2000	Possibly extinct	G1/EX	Plant	Hawaii and Pacific Islands	None at listing, one 1997	USFWS, 2014a; USFWS, 2016a
Oahu tree snail curta	<i>Achatinella curta</i>	1981	1989	Possibly extinct	G1/CR	Mollusk	Hawaii and Pacific Islands	Six snails seen 1983	U.S. Army, 2004; USFWS, 2011
Oahu tree snail leucorraphe	<i>Achatinella leucorraphe</i>	1981	1989	Possibly extinct	G1T1/CR	Mollusk	Hawaii and Pacific Islands	Unknown	USFWS, 2011a
Oahu tree snail pulcherrima	<i>Achatinella pulcherrima</i>	1981	1993	Possibly extinct	G1T1/CR	Mollusk	Hawaii and Pacific Islands	<50	USFWS, 2011a
Dusky seaside sparrow	<i>Ammodramus maritimus nigrescens</i>	1967	1987	Extinct, Delisted	G4TX/EX	Bird	Southeast	927 singing males	USFWS 1990
Mariana mallard	<i>Anas oustaleti</i>	1977	1981	Extinct, Delisted	NA	Bird	Hawaii and Pacific Islands	Two males and a female	USFWS 2004
Morro Bay kangaroo rat	<i>Dipodomys heermanni morroensis</i>	1970	1993	Possibly extinct	G3TH/CR	Mammal	Pacific Southwest	>2,000	USFWS 2011b
Fresno kangaroo rat	<i>Dipodomys nitratoides exilis</i>	1985	1992	Possibly extinct	G3TH/NA	Mammal	Pacific Southwest	Unknown	USFWS 2010a
Golden coqui	<i>Eleutherodactylus jasperi</i>	1977	1981	Possibly extinct	NA/CR	Amphibian	Southeast	Unknown	USFWS 2013a
Curtis' pearlymussel	<i>Epioblasma florentina curtisii</i>	1976	1993	Possibly extinct	G1T1	Mollusk	Southeast	>100	USFWS 2010b
White cat's paw pearly mussel	<i>Epioblasma obliquata perobliqua</i>	1976	1999	Possibly extinct	G1T1	Mollusk	Midwest	Two in 1975	USFWS 2013b
Green blossom pearly mussel	<i>Epioblasma torulosa gubernaculum</i>	1976	1982	Extinct, delisting recommended	G2TX/EX	Mollusk	Southeast	One after listing	USFWS 2017a
Slender chub	<i>Erimystax cahni</i>	1977	1996	Possibly extinct	G1/EN	Fish	Southeast	<30	USFWS 2014b
Maryland darter	<i>Etheostoma sellare</i>	1967	1988	Possibly extinct	GH/EX	Fish	Northeast	<50	Burkhead 2012, USFWS 2007
San Marcos gambusia	<i>Gambusia georgei</i>	1980	1982	Extinct	GX/EX	Fish	Southwest	Three	Burkhead 2012, USFWS 1996
Hau kuahiwi	<i>Hibiscadelphus woodii</i>	1996	2006	Possibly extinct	G1/EX	Plant	Hawaii and Pacific Islands	Four trees	USFWS 2017b
Maui 'ākepa	<i>Loxops ochraceus</i>	1970	1988	Possibly extinct	G1TH/CRPE	Plant	Hawaii and Pacific Islands	Unknown	Scott et al. 2008, USFWS 2015a
Po'ouli	<i>Melamprosops phaeosoma</i>	1975	2004	Possibly extinct	G1/CR	Bird	Hawaii and Pacific Islands	Unknown	USFWS 2015b
Kauai 'o'o	<i>Moho braccatus</i>	1967	1987	Possibly extinct	GH/EX	Bird	Hawaii and Pacific Islands	Unknown	USFWS 2009a
Molokai thrush	<i>Myadestes lanaiensis rutha</i>	1970	1980	Possibly extinct	GHTH/CRPE	Bird	Hawaii and Pacific Islands	Estimated 36 birds	Scott et al. 2008, USFWS 2018
Large Kauai thrush	<i>Myadestes myadestinus</i>	1970	1987	Possibly extinct	GH/EX	Bird	Hawaii and Pacific Islands	Estimated 337 birds	USFWS 2009b
Oahu creeper	<i>Paroreomyza maculata</i>	1970	1978	Possibly extinct	GH/CRPE	Bird	Hawaii and Pacific Islands	<10	USFWS 2013c
Lotis blue butterfly	<i>Lycaeides argyrognomon lotis</i>	1976	1983	Possibly extinct	G5TH/NA	Arthropod	Pacific Southwest	<30	USFWS 2011c
Black clubshell	<i>Pleurobema curtum</i>	1987	1990	Possibly extinct	GH/CR	Mollusk	Southeast	Unknown	USFWS 2015c
'O'u	<i>Psittirostra psittacea</i>	1967	1989	Possibly extinct	G1/CRPE	Bird	Hawaii and Pacific Islands	<500	Scott et al. 2008, USFWS 2015d
Pamakani	<i>Tetramolopium capillare</i>	1994	2001	Possibly extinct	G1/NA	Plant	Hawaii and Pacific Islands	<200	USFWS 2012

Literature Cited:

Burkhead, N.M., (2012). Extinction Rates in North American Freshwater Fishes, 1900–2010. *BioScience*, 62, 798-808.

Scott, J. M., Ramsey, F. L., Lammertink, M., Rosenberg, K. V., Rohrbaugh, R., Wiens, J. A., & Reed, J. M., (2008). When is an “extinct” species really extinct? Gauging the search efforts for Hawaiian forest birds and the Ivory-billed Woodpecker. *Avian Conservation and Ecology*, 3, 3.

U.S. Army, (2004). Garrison Hawaii O’ahu Training Areas Natural Resource Management. Final Report. (*Achatinella curta*). Prepared by the Pacific Cooperative Studies Unit. http://manoa.hawaii.edu/hpicesu/DPW/2004_YER/YER2004_edited.pdf

U.S. Fish and Wildlife Service, (1990). Final Rule to Delist the Dusky Seaside Sparrow and Remove its Critical Habitat Designation. Federal Register, Vol. 55, No. 239: 51112-51114. https://ecos.fws.gov/docs/federal_register/fr1798.pdf

U.S. Fish and Wildlife Service, (1996). Recovery Plan for the San Marcos and Comal Springs and Associated Aquatic Ecosystems (Revised). https://ecos.fws.gov/docs/recovery_plan/960214.pdf

U.S. Fish and Wildlife Service, (2004). Removing the Mariana Mallard and the Guam broadbill from the Federal List of Endangered and Threatened Wildlife. Federal Register, Vol. 69, No. 35: 8116-8119. <https://www.gpo.gov/fdsys/pkg/FR-2004-02-23/pdf/04-3784.pdf#page=1>

U.S. Fish and Wildlife Service, (2007). 5-Year Review: Summary and Evaluation, Maryland darter (*Etheostoma sellare*). https://ecos.fws.gov/docs/five_year_review/doc1173.pdf

U.S. Fish and Wildlife Service, (2009a). 5-Year Review, Summary and Evaluation, Kaua’i’o’o (*Moho braccatus*). https://ecos.fws.gov/docs/five_year_review/doc2534.pdf

U.S. Fish and Wildlife Service, (2009b). 5-Year Review, Summary and Evaluation, Kama’o or Large Kauna’i thrush (*Myadestes myadestinus*). https://ecos.fws.gov/docs/five_year_review/doc2531.pdf

U.S. Fish and Wildlife Service (2010a), 5-Year Review: Summary and Evaluation, Fresno Kangaroo Rat (*Dipodomys nitratodes exilis*). https://ecos.fws.gov/docs/five_year_review/doc3214.pdf

U.S. Fish and Wildlife Service, (2010b). 5-Year Review The Curtis’ Pearlymussel (*Epioblasma florentina curtisii*). https://ecos.fws.gov/docs/five_year_review/doc3119.pdf

U.S. Fish and Wildlife Service, (2011a). Oahu tree snails (*Achatinella* spp.) 5-Year Review. https://ecos.fws.gov/docs/five_year_review/doc3903.pdf

U.S. Fish and Wildlife Service, (2011b). Morro Bay Kangaroo Rat (*Dipodomys heermanni morroensis*), 5-Year Review: Summary and Evaluation. https://ecos.fws.gov/docs/five_year_review/doc3641.pdf

U.S. Fish and Wildlife Service, (2011c). 5-year Review: Summary and Evaluation, lotis blue butterfly (*Lycaeides argyrognomon lotis*) https://ecos.fws.gov/docs/five_year_review/doc3960.pdf

U.S. Fish and Wildlife Service, (2012). 5-year Review: Summary and Evaluation, Tetramolopium capillare (Pamakani). https://ecos.fws.gov/docs/five_year_review/doc4056.pdf

U.S. Fish and Wildlife Service, (2013a). 5-Year Review Golden Coqui (*Eleutherodactylus jasperi*) https://ecos.fws.gov/docs/five_year_review/doc4276.pdf

U.S. Fish and Wildlife Service, (2013b). 5-Year Review, White Cat's Paw Pearly Mussel (*Epioblasma obliquata perobliqua*). https://ecos.fws.gov/docs/five_year_review/doc4135.pdf

U.S. Fish and Wildlife Service, (2013c). 5-Year Review: Short Form Summary, Paroreomyza maculate (O'ahu creeper). https://ecos.fws.gov/docs/five_year_review/doc4246.pdf

U.S. Fish and Wildlife Service, (2014a). 5-Year Review, Acaena exigua (Liliwai). https://ecos.fws.gov/docs/five_year_review/doc4384.pdf

U.S. Fish and Wildlife Service, (2014b). 5-Year Review: Slender Chub (*Erimystax (=Hybopsis)cahni*) https://ecos.fws.gov/docs/five_year_review/doc4357.pdf

U.S. Fish and Wildlife Service, (2015a). 5-Year Review: Short Form Summary, Maui akepa (*Loxops coccineus ochraceus*) https://ecos.fws.gov/docs/five_year_review/doc4568.pdf

U.S. Fish and Wildlife Service, (2015b). 5-Year Review: Short Form Summary, Po'ouli (*Melamprosops Phaeosoma*). https://ecos.fws.gov/docs/five_year_review/doc4578.pdf

U.S. Fish and Wildlife Service, (2015c). 5-Year Review: Summary and Evaluation, Black Clubshell (Curtus' Pearly Mussel), Stirrup shell (*Quadrula stapes*), Flat Pigtoe (Marshall's Pearly Mussel)(*Pleurobema marshalli*). https://ecos.fws.gov/docs/five_year_review/doc4642.pdf

U.S. Fish and Wildlife Service, (2015d). 5-Year Review: Short Form Summary. Ou (*Psittirostra Psittacea*) https://ecos.fws.gov/docs/five_year_review/doc4577.pdf

U.S. Fish and Wildlife Service, (2016a). Endangered and threatened wildlife and plants, designation and nondesignation of critical habitat on Molokai, Lanai, Maui, and Kahoolawe for 135 species. Federal Register, 81, 17790-18108.

U.S. Fish and Wildlife Service, (2017a). 5-Year Review: Summary and Evaluation, Green-Blossom pearly mussel (*Epioblasma torulosa gubernaculum*), Tubercled-blossom pearly mussel (*Epioblasma torulosa torulosa*), Turgid-blossom pearly mussel (*Epioblasma turgidula*), Yellow-

Blossom pearly mussel (*Epioblasma florentina florentina*).
https://ecos.fws.gov/docs/five_year_review/doc5656.pdf

U.S. Fish and Wildlife Service, (2017b). 5-Year Review: summary and evaluation, *Dubautia Kenwoodii* (Na'ena'e). https://ecos.fws.gov/docs/five_year_review/doc5264.pdf

U.S. Fish and Wildlife Service, (2018). 5-Year Review: Short Form Summary, Olomao or Molokai Thrush (*Myadestes lanaiensis rutha*).
https://ecos.fws.gov/docs/five_year_review/doc5760.pdf