

Endling

An **endling** is the last known individual of a species or subspecies. Once the endling dies, the species becomes extinct. The word was coined in correspondence in the scientific journal *Nature*. Alternative names put forth for the last individual of its kind include **ender** and **terminarch**.

The word relict may also be used, but usually refers to a population, rather than an individual, that is the last of a species.^[1]



Benjamin was an endling, the last known thylacine (Tasmanian tiger), photographed at Hobart Zoo in 1933.

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Usage

The 4 April 1996 issue of *Nature* published a correspondence in which commentators suggested that a new word, *endling*, be adopted to denote the last individual of a species.^{[1][2]} The 23 May issue of *Nature* published several counter-suggestions, including *ender*, *terminarch*, and *relict*.^{[1][3]}

The word *endling* appeared on the walls of the National Museum of Australia in *Tangled Destinies*, a 2001 exhibition by Matt Kirchman and Scott Guerin, about the relationship between Australian peoples and their land. In the exhibition, the definition, as it appeared in *Nature*, was printed in large letters on the wall above two specimens of the extinct Tasmanian tiger: "Endling (n.) The last surviving individual of a species of animal or plant". A printed description of this exhibition offered a similar definition, omitting reference to plants: "An endling is the name given to an animal that is the last of its species."^{[4][5]}

In *The flight of the emu: a hundred years of Australian ornithology 1901-2001*, author Libby Robin states that "the very last individual of a species" is "what scientists refer to as an 'endling'".^[6]

In 2011, the word was used in the *Earth Island Journal*, in an essay by Eric Freedman entitled "Extinction Is Forever: A Quest for the Last Known Survivors". Freedman defined *endling* as "the last known specimen of her species."^[7]

In *The sense of an endling*, author Helen Lewis describes the notion of an endling as poignant, and the word as "wonderfully Tolkien-esque".^[8]

In *Cut from history*, author Eric Freedman describes *endling* as "a word with finality." He opines, "It is deep-to-the-bone chilling to know the exact date a species disappeared from Earth. It is even more ghastly to look upon the place where it happened and know that nobody knew or cared at the time what had transpired and why."^[9]

Notable endlings

This is not a comprehensive list of contemporary extinction, but a list of high-profile, widely publicised examples of when the last individual of a species was known.

Birds

- The last known great auks (*Pinguinus impennis*) were killed in 1844 for specimen collectors, after many centuries of exploitation for meat, eggs and oil for burning. A disputed sighting in 1852 has also been debated.
- The passenger pigeon (*Ectopistes migratorius*) became extinct on 1 September 1914 with the death of Martha at the Cincinnati Zoo.^{[10][11]} Once hugely abundant, millions of other passenger pigeons were eradicated by hunting.
- Incas, the last known Carolina parakeet (*Conuropsis carolinensis*), died, also at the Cincinnati Zoo, on 21 February 1918.^[11]
- Booming Ben, a solitary heath hen (*Tympanuchus cupido cupido*), was last seen 11 March 1932 on Martha's Vineyard, Massachusetts.^[12]
- Orange Band was the last known dusky seaside sparrow (*Ammodramus maritimus nigrescens*) who died on 17 June 1987 at the Discovery Island zoological park at Walt Disney World Resort.^[13]
- The Kaua'i 'ō'ō (*Moho braccatus*) was last seen in 1985, and last heard in 1987 when it was recorded by the Cornell Lab of Ornithology. The death of the 'ō'ō endling represented the extinction of not only a species, but the genus *Moho*, and the family *Mohoidae*.^[14]
- The last confirmed American ivory-billed woodpecker, a female, vanished by 1944,^[15] though there have been possible sightings of the bird in later years such as 1967,^[16] 1999,^[17] 2004,^[18] 2005, and 2006.^[19] Those sightings have left the question of its survival up for debate.^[20] The Cuban ivory-billed woodpecker has not been seen since 1987.^[21]
- By mid-1997, only 3 confirmed individuals of the Po'ouli remained. One died in 2004, and the other 2 have been missing since 2003 and 2004.^[22]
- The last survivor of the rufous-fronted laughingthrush subspecies *Garrulax rufifrons slamatensis* is a female in a rescue station on Java.^[23]
- Only 1–2 Bahama nuthatches (*Sitta insularis*) may survive in the forests of Grand Bahama Island; a 2018 search produced several sightings, but no more than 1 or possibly 2 individuals were seen at once, and they might have been killed by Hurricane Dorian.^{[24][25]}



Martha, the last passenger pigeon, died in the Cincinnati Zoo in 1914



A dusky seaside sparrow (*Ammodramus maritimus nigrescens*), officially declared extinct in 1990.

Mammals

- In 1627, the last aurochs, an ancestor of bovine and cattle, died in a forest near what is now Jaktorów in modern-day Poland.
- The quagga (*Equus quagga quagga*) became extinct in the wild in the late 1870s due to hunting for meat and skins, and the subspecies' endling died in captivity on 12 August 1883 at the Artis in Amsterdam.
- The tarpan became extinct when the last one died in captivity in 1909.

- On 7 September 1936, Benjamin, the last known Tasmanian tiger (*Thylacinus cynocephalus*) died in Hobart Zoo, after the species was hunted to extinction by farmers. It has been suggested Benjamin died of neglect during a night of unusually extreme weather conditions in Tasmania.^[26] Benjamin was not only the last individual thylacine, but the last individual of the genus *Thylacinus* and even of the entire family *Thylacinidae*.
- Celia, the last Pyrenean ibex (*Capra pyrenaica pyrenaica*), was found dead on 6 January 2000 in the Spanish Pyrenees, after hunting and competition from livestock reduced the population to one individual.^[27] The species was successfully cloned back from extinction by scientists in 2003; however, the clone only lived for seven minutes due to lung failure.
- Najin and her daughter Fatu at Ol Pejeta Conservancy are the last two individuals of the northern white rhinoceros.^[28]
- Approximately 10 vaquita specimens are the relict of their species.^[29]



Lonesome George, the last Pinta Island tortoise

Reptiles and amphibians

- The last known golden toad was seen in 1989.
- On 24 June 2012, Lonesome George, who was the last known Pinta Island tortoise (*Chelonoidis abingdonii*), died in his habitat in the Galápagos Islands.^[30]
- Until September 26, 2016, the Atlanta Botanical Garden was home to the last known surviving Rabbs' fringe-limbed treefrog (*Ecnomiohyla rabborum*) named Toughie. It is believed that the species became extinct in the wild mainly because of an epizootic of Batrachochytrium dendrobatidis in its native range.
- The relict of Panamanian golden frogs were taken into captivity in 2006 to prevent their deaths from Chytridiomycosis infection.
- The Cochabamba Natural History Museum has Romeo, who until 2019 was believed to be likely the last Sehuencas water frog.^[31] The confirmed population now consists of 6 individuals.^[32]
- After being considered possibly extinct for 113 years, a Fernandina Island Galápagos tortoise was found in 2019. However, this female is the only confirmed individual.^[33]
- All that is confirmed to remain of the Yangtze giant softshell turtle is a captive male in China and 2 wild individuals in Vietnam of unknown sexes.^[34]



'Toughie', the last known Rabb's fringe-limbed treefrog.

Invertebrates

- Turgi was the last *Partula turgida*, a Polynesian tree snail, who died on 31 January 1996 in the London Zoo.^[35]
- A tank in the Bristol Zoo was the last refuge of *Partula faba*, a land snail from Ra'iātea in French Polynesia. The population dropped from 38 in 2012^[36] to one in 2015.^[37] The last individual died on 21 February 2016.^[37]
- George was the last known individual of the Oahu tree snail species *Achatinella apexfulva*. It died on January 1, 2019, in captivity near Kailua, Oahu.^[38]

Plants

- The Curepipe Botanic Gardens in Mauritius have housed the last specimen of the palm *Hyophorbe amaricaluis* since the 1950s.^[39]
- Pennantia baylisiana* has only ever been known from one wild tree that still lives today.^[40]

- Only one individual of the Wood's cycad (*Encephalartos woodii*) has existed since 1895 (excluding the many clones).

See also

- [Anthropocene](#)
- [Conservation status](#)
- [De-extinction](#)
- [Extinction](#)
- [Holocene extinction](#)
- [Last man](#)
- [Lists of extinct animals](#)
- [List of neologisms](#)
- [Rare species](#)
- [Rememberer](#)

References

1. Jorgensen, Dolly (13 April 2013). "Naming and claiming the last" (<http://dolly.jorgensenweb.net/nordicnature/?p=450>). Retrieved 26 January 2014.
2. Robert M. Webster & Bruce Erickson (4 April 1996). "The last word?" (<https://doi.org/10.1038/380386c0>). *Nature*. **380** (386): 386. Bibcode:1996Natur.380..386W (<https://ui.adsabs.harvard.edu/abs/1996Natur.380..386W>). doi:[10.1038/380386c0](https://doi.org/10.1038/380386c0) (<https://doi.org/10.1038%2F380386c0>). PMID 8602235 (<https://pubmed.ncbi.nlm.nih.gov/8602235>).
3. Elaine Andrews (4 April 1996). "The last word". *Nature*. **381** (272): 272. Bibcode:1996Natur.381..272A (<https://ui.adsabs.harvard.edu/abs/1996Natur.381..272A>). doi:[10.1038/381272d0](https://doi.org/10.1038/381272d0) (<https://doi.org/10.1038%2F381272d0>).
4. "Tangled Destinies" (http://www.nma.gov.au/__data/assets/pdf_file/0020/19514/tangled_destinies_bw.pdf) (PDF). National Museum of Australia. 2002. Retrieved 27 January 2014.
5. Smith, Mike (2001). "The Endling exhibition, Tangled Destinies gallery, National Museum of Australia, Canberra, 2001" (<http://environmentalhistory-au-nz.org/links/publications/reviews/pdfs/robin-rev1.pdf>) (PDF). National Museum of Australia. Retrieved 27 January 2014.
6. Robin, Libby (2002). *The flight of the emu: a hundred years of Australian ornithology 1901-2001*. Melbourne University Press. p. 260. ISBN 978-0522849875.
7. Freedman, Eric (2011). "Extinction is Forever: A Quest for the Last Known Survivors" (http://www.earthisland.org/journal/index.php/eij/article/extinction_is_forever). Earth Island Journal. Retrieved 27 January 2014.
8. Lewis, Helen (27 June 2012). "Sense of an endling" (<http://www.newstatesman.com/sci-tech/sci-tech/2012/06/sense-endling>). The New Statesman. Retrieved 30 January 2014.
9. Freedman, Eric (5 July 2008). "Cut from history: An abandoned Tasmanian zoo tells the haunting tale of an ending" (<https://web.archive.org/web/20080705225257/http://www.ejmagine.com/2002a/history.html>). EJ Magazine. Archived from the original (<http://www.ejmagine.com/2002a/history.html>) on 2008-07-05. Retrieved 30 January 2014.
10. "Endangered Species Handbook" (https://web.archive.org/web/20121202091952/http://www.endangeredspecieshandbook.org/dinos_eastern.php). Animal Welfare Institute. 1983. Archived from the original (http://www.endangeredspecieshandbook.org/dinos_eastern.php) (pdf) on 2 December 2012. Retrieved 29 February 2012.
11. Blythe, Anne (27 August 2012). "Extinct Carolina Parakeet still fascinates" (<https://web.archive.org/web/20140225025110/http://www.newsobserver.com/2012/08/27/2299018/a-talkative-bird-gone-without.html>). www.newsobserver.com. Archived from the original (<http://www.newsobserver.com/2012/08/27/2299018/a-talkative-bird-gone-without.html>) on 25 February 2014. Retrieved 27 January 2014.

12. "Heath Hen (Extinct)" (<http://www.beautyofbirds.com/heathhen.html>). BeautyOfBirds (formerly Avian Web). Retrieved 27 January 2014.
13. "Last of dusky sparrows dies" (<https://www.nytimes.com/1987/06/17/us/last-of-dusky-sparrows-dies.html>). *The New York Times*. Associated Press. 17 June 1987.
14. "Moho braccatus (Kaua'i O'o, Kauai Oo)" (<https://www.iucnredlist.org/details/22704323/0>). *IUCN Red List of Threatened Species*. Retrieved 2018-05-15.
15. Weidensaul, Scott. "Ghost of a Chance" (<https://www.smithsonianmag.com/science-nature/ghost-of-a-chance-82491331/>). *Smithsonian*. Retrieved 2018-07-05.
16. Dennis, John V. (November–December 1967). "The ivory-bill flies still". *Audubon*: 38–45.
17. Brett Martel (19 November 2000). "Reported Sighting of 'Extinct' Woodpecker Drives Bird-Watchers Batty" (<http://www.latimes.com/archives/la-xpm-2000-nov-19-mn-54363-story.html>). *Los Angeles Times*.
18. Fitzpatrick, J. W.; Lammertink, M; Luneau Jr, M. D.; Gallagher, T. W.; Harrison, B. R.; Sparling, G. M.; Rosenberg, K. V.; Rohrbaugh, R. W.; Swarthout, E. C.; Wrege, P. H.; Swarthout, S. B.; Dantzker, M. S.; Charif, R. A.; Barksdale, T. R.; Remsen Jr, J. V.; Simon, S. D.; Zollner, D (2005). "Ivory-billed Woodpecker (*Campephilus principalis*) Persists in Continental North America" (<http://birds.cornell.edu/ivory/evidence/ScienceArticle05.pdf>) (PDF). *Science*. **308** (#5, 727): 1460–2. Bibcode:2005Sci...308.1460F (<https://ui.adsabs.harvard.edu/abs/2005Sci...308.1460F>). doi:10.1126/science.1114103 (<https://doi.org/10.1126%2Fscience.1114103>). PMID 15860589 (<https://pubmed.ncbi.nlm.nih.gov/15860589>).
19. Hill, Geoffrey E.; Mennill, Daniel J.; Rolek, Brian W.; Hicks, Tyler L. & Swiston, Kyle A. (2006). "Evidence Suggesting that Ivory-billed Woodpeckers (*Campephilus principalis*) Exist in Florida" (<http://www.ace-eco.org/vol1/iss3/art2/ACE-ECO-2006-78.pdf>) (PDF). *Avian Conservation and Ecology*. **1** (3): 2. doi:10.5751/ace-00078-010302 (<https://doi.org/10.5751%2Face-00078-010302>). Retrieved 2019-10-13. Erratum (<http://www.ace-eco.org/vol1/iss3/art2/errata.html>)
20. Eastman, Whitney (1958). "Ten year search for the Ivory-billed Woodpecker". *Atlantic Naturalist*. **13** (4).
21. "Campephilus principalis (ivory-billed woodpecker)" (http://animaldiversity.org/accounts/Campephilus_principalis/). *Animal Diversity Web*. Retrieved 2018-07-05.
22. "Melamprosops phaeosoma (Black-faced Honeycreeper, Po'o-uli, Poo-uli)" (<https://www.iucnredlist.org/details/2720863/0>). *IUCN Red List of Threatened Species*. Retrieved 2018-07-05.
23. "Cikananga Wildlife Center – Rufous-fronted Laughingthrush" (http://www.cikanangawildlifecenter.com/?page_id=1147). www.cikanangawildlifecenter.com. Retrieved 2018-07-05.
24. "The IUCN Red List of Threatened Species" (<https://www.iucnredlist.org/en>). *IUCN Red List of Threatened Species*. Retrieved 2019-07-27.
25. <https://us.blastingnews.com/lifestyle/2019/09/hurricane-dorian-might-have-wiped-out-the-critically-endangered-bahama-nuthatch-002977549.html>
26. Lewis, Robert; Arnold, David (2002). *Tangled Destinies: Exploring land and people in Australia over time through the National Museum of Australia* (https://web.archive.org/web/20110720224835/http://www.nma.gov.au/shared/libraries/attachments/schools/resources/tangled_destinies/tangled_destinies_document/files/19806/tangled_destinies_full_colour.pdf) (PDF). ISBN 0-949380-41-5. Archived from the original (http://www.nma.gov.au/shared/libraries/attachments/schools/resources/tangled_destinies/tangled_destinies_document/files/19806/tangled_destinies_full_colour.pdf) (PDF) on July 2011.
27. Richard Gray and Roger Dobson (31 January 2009). "Extinct ibex is resurrected by cloning" (<https://www.telegraph.co.uk/science/science-news/4409958/Extinct-ibex-is-resurrected-by-cloning.html>). *The Telegraph*. Retrieved 27 January 2014.
28. Karimi, Faith. "The world's last male northern white rhino is dead. Now what?" (<https://www.cnn.com/2018/03/20/africa/kenya-northern-white-rhino-dies-whats-next/index.html>). *CNN*. Retrieved 2018-07-05.
29. "One of About 10 Endangered Vaquitas Found Dead in Mexico" (<http://time.com/5552189/sea-shepherd-vaquita-porpoise-endangered-mexico/>).
30. Valencia, Alexandra; Garcia, Eduardo (24 June 2012). "Lonesome George, last-of-his-kind Galapagos tortoise, dies" (<https://web.archive.org/web/20120627230622/http://www.trust.org/alertnet/news/lonesome-george-last-of-his-kind-galapagos-tortoise-dies>). *Reuters*. Archived from the original (<http://www.trust.org/alertnet/news/lonesome-george-last-of-his-kind-galapagos-tortoise-dies>) on 2012-06-27.

31. Keerthana, R. (2018-04-10). "Going, going, gone" (<http://www.thehindu.com/todays-paper/tp-in-school/going-going-gone/article23485883.ece>). *The Hindu*.
32. Helen Briggs (15 January 2019). "World's 'loneliest' frog gets a date" (<https://www.bbc.co.uk/news/science-environment-46867424>). *BBC News*.
33. "Tortoise thought to be extinct for 113 years has been rediscovered on the Galapagos" (<https://www.foxnews.com/science/tortoise-thought-to-be-extinct-for-113-years-has-been-rediscovered-on-the-galapagos>). 2019-02-20.
34. "'Last female' of rare turtle species dies in China zoo" (<https://www.aljazeera.com/news/2019/04/female-rare-turtle-species-dies-china-zoo-190414094329985.html>). Al Jazeera English. 2019-04-14. Retrieved 2019-04-14.
35. "Tiny Tree Snail Finally Creeps To Extinction" (http://articles.chicagotribune.com/1996-02-01/news/9602020105_1_snail-partula-endangered). Chicago Tribune. 1 February 1996.
36. Five of the world's 10 most at-risk species at Bristol Zoo (<http://www.bristolpost.co.uk/world-s-10-risk-species-Bristol-Zoo/story-16774911-detail/story.html>)
37. "Captain Cook's bean snail Partula faba" (<http://islandbiodiversity.com/faba.htm>). *islandbiodiversity.com*. Retrieved 2018-07-05.
38. Ed Yong (2019) "The Last of Its Kind" (<https://www.theatlantic.com/magazine/archive/2019/07/extinction-endling-care/590617/>) *The Atlantic*, July 2019. Accessed June 28, 2019.
39. "Hyophorbe amaricaulis" (<https://www.iucnredlist.org/details/38578/0>). *IUCN Red List of Threatened Species*. Retrieved 2018-07-05.
40. "Pennantia baylisiana (Three Kings Kaikomako)" (<https://www.iucnredlist.org/details/30481/0>). *IUCN Red List of Threatened Species*. Retrieved 2018-07-05.

External links

- *What Do You Call the Last of a Species?* (<https://www.newyorker.com/tech/annals-of-technology/what-do-you-call-the-last-of-a-species>) by Michelle Nijhuis for *The New Yorker*
- *Cut from history* (http://www.earthisland.org/journal/index.php/eij/article/extinction_is_forever/) by Eric Freedman for Knight Center for Environmental Journalism (<https://web.archive.org/web/20070812022236/http://ej.msu.edu/about.php>)
- *Bringing Them Back to Life* (<http://ngm.nationalgeographic.com/2013/04/species-revival/zimmer-text/>) by Carl Zimmer for National Geographic Magazine.

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