



**WIKIPEDIA**  
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[Main page](#)  
[Contents](#)  
[Current events](#)  
[Random article](#)  
[About Wikipedia](#)  
[Contact us](#)  
[Donate](#)

[Contribute](#)

[Help](#)  
[Community portal](#)  
[Recent changes](#)  
[Upload file](#)

[Tools](#)

[What links here](#)  
[Related changes](#)  
[Special pages](#)  
[Permanent link](#)  
[Page information](#)  
[Cite this page](#)  
[Wikidata item](#)

[Languages](#)

[Català](#)  
[Cebuano](#)  
[Deutsch](#)  
[Español](#)  
[Euskara](#)  
[Français](#)  
[Galego](#)  
[Italiano](#)  
[Lietuvių](#)  
[Nederlands](#)  
[日本語](#)  
[Polski](#)  
[Português](#)  
[Русский](#)  
[Українська](#)  
[Tiếng Việt](#)

[Edit links](#)

[In other projects](#)

Not logged in [Talk](#) [Contributions](#) [Create account](#) [Log in](#)

Article

[Talk](#)

Read

[Edit](#)

[View history](#)



# Gardner Pinnacles

From Wikipedia, the free encyclopedia

Coordinates : 24°59′56″N 167°59′58″W﻿ / ﻿24.99889°N 167.99944°W﻿ / 24.99889; -167.99944

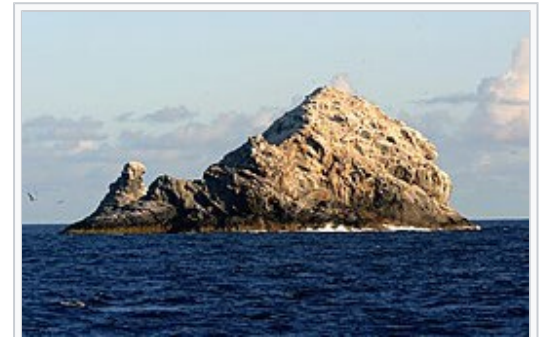
The **Gardner Pinnacles** (Hawaiian : *Pūhāhonu*) are two barren [rock](#) outcrops surrounded by a reef and located in the [Northwestern Hawaiian Islands](#) at 24°59′56″N 167°59′58″W﻿ / ﻿24.99889°N 167.99944°W﻿ / 24.99889; -167.99944.

The volcano is 511 [nautical miles \(946](#) [km; 588](#) [mi\)](#) northwest of [Honolulu](#) and 108 [miles \(94](#) [nmi; 174](#) [km\)](#) from [French Frigate Shoals](#). The total area of the two small islets—remnants of an ancient volcano that is the world's largest [shield volcano](#) —is 5.939 [acres \(24,030](#) [m](#)<sup>2</sup>[\).](#)<sup>[1]</sup> The highest peak is 170 [feet \(52](#) [meters\)](#). The surrounding reef has an area in excess of 1,904 [square kilometres \(470,000](#) [acres; 735](#) [sq](#) [mi\)](#).<sup>[2]</sup>

Gardner Pinnacles was first discovered on June 2, 1820, by the American [whaler](#) *Maro*, commanded by Captain Joseph Allen.<sup>[3]</sup>

The Gardner Pinnacles are home to the Giant [Opihi](#) (*Cellana talcosa*), Hawaiian Limpet known as the ‘opihi ko‘ele, which is not found anywhere else in the world outside the Hawaiian Islands.<sup>[2]</sup> Numerous insects live on the island.<sup>[2][4]</sup>

Since this is part of [Papahānaumokuākea Marine National Monument](#) wildlife refuge, Gardner Pinnacles is off limits to even the military, although they made an unauthorized landing in 1961 or 1962 and blew off the tip of the outcrop to create an emergency helicopter landing spot for the Hawaiian HIRAN project, an effort to determine location of area islands with great precision for navigational purposes.<sup>[5]</sup> To this day the tip has not been replaced, and debris from the blast can be found scattered throughout the island. In the Hawaiian Archipelago, adjacent islands/reefs are [French Frigate Shoals](#) to the southeast, and [Maro Reef](#) to the northwest.



The guano-coated Gardner Pinnacles.



Map showing the location of Gardner Pinnacles in the Hawaiian island chain



Gardner Pinnacles in 1909

**Contents** [[hide](#)]

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Printable version

- Geology
- Name
- See also
- References
- External links

## Geology [ edit ]

According to a 2020 report in  *Earth and Planetary Science Letters* , Pūhāhonu contains approximately 150,000 cubic kilometers of rock, based on a 2014 sonar survey. This would make it Earth's largest single volcano. Only about one-third of that volume is exposed above the sea floor. The rest is buried beneath a ring of debris, broken coral, and other material that has eroded from the peak. Pūhāhonu is so heavy, researchers note, that it has caused Earth's crust nearby—and thus the volcano itself—to sink hundreds of meters over millions of years.

By comparison, from sea floor to peak,  *Mauna Loa* , on Hawaii's Big Island, is the tallest shield volcano on Earth. But it's nowhere near as big as Pūhāhonu; a 2013 study estimates Mauna Loa's volume at 83,000 cubic kilometers. The Tamu Massif , a 4-kilometer-tall volcanic feature the size of the British Isles on the sea floor east of Japan, contains almost 7 million cubic kilometers of material and was once thought to be the world's largest shield volcano. But Tamu Massif is now believed to have formed along a midocean ridge rather than over a single source of magma. That makes Pūhāhonu the largest known shield volcano on Earth.<sup>[6]</sup>

## Name [ edit ]

The Hawaiian name,  *Pūhāhonu*, means 'turtle surfacing for air', from *pūhā* 'to breathe at the surface' and *honu* 'turtle'.<sup>[7]</sup>

## See also [ edit ]

- List of volcanoes in the Hawaiian – Emperor seamount chain*

## References [ edit ]

- ↑ Giuliani-Hoffman, Francesca. "The largest volcano in the world sits beneath two small rocky peaks in Hawaii". *CNN*. Retrieved 2020-05-26.
- ↑ <sup>a</sup> <sup>b</sup> <sup>c</sup> Gardner Pinnacles - Hawaiian Islands National Wildlife Refuge. U.S Fish and Wildlife Service. December 14, 2016
- ↑ Mark J. Rauzon (2001). *Isles of Refuge: Wildlife and History of the Northwestern Hawaiian Islands*. University of Hawaii Press. pp. 95–. ISBN 978-0-8248-2330-6.
- ↑ *Gardner Pinnacles (Pūhāhonu)*. Papahānaumokuākea (Northwestern Hawaiian Islands) Marine National Monument
- ↑ King, Warren B. (March 1973). "Conservation Status of Birds of Central Pacific Islands". *The Wilson Bulletin*. Wilson Ornithological Society. **85** (1): 89–103. JSTOR 4160286.
- ↑ World's biggest volcano is barely visible , *Science Magazine*, May. 12, 2020. doi:10.1126/science.abc7615
- ↑ Ulukau Hawaiian Electronic Dictionary

## External links [ edit ]

- Gardner Pinnacles  Islands of the Hawaiian Chain
- Gardner Pinnacles Page  ~ Bishop Museum
- Quick Facts on the Gardner Pinnacles from the PBS Ocean Adventures site
- Papahānaumokuākea Marine National Monument Information Management System



Wikimedia Commons has media related to ***Gardner Pinnacles***.

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