

Fluorescent ornamentation in the Rhinoceros Auklet

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The recent discovery of fluorescence in the bills of Atlantic Puffins has garnered much attention since it first made headlines in 2018. Given this information, we wanted to see whether another auk, the Rhinoceros Auklet, would show fluorescence in their ornamental bill structures as well. Rhinoceros Auklets are very closely related to puffins, deriving their name from a ‘horn’ that is grown at the base of the upper mandible during the breeding season. We hypothesized that this horn may be a likely source of fluorescence, given its probable role as an ornamental structure and how similar auklets are to puffins.

We tested our hypothesis at our field station on Southeast Farallon Island, where we have access to hundreds of breeding auklets every summer. Setting up mist nets around breeding burrows as we have done every year since 1987, we eagerly awaited adult auklets to return to their nests at dusk with bills full of fish for their waiting

chicks. After carefully extracting them from the net, we safely exposed their bills to a UV light source. Excitingly, our suspicions about fluorescence were correct! Hiding beyond our detection all these years was a novel discovery: a unique turquoise glow. Concentrated mainly on the horn, every subject that we examined displayed at least some amount of fluorescence. Some individuals showed more than others, especially on the mandibles, but this variation was not because of sex.

While the mechanisms and biological significance of this trait are less understood, we suggest that it likely aids in reproductive signaling. This may be especially true given this species’ habits: most interactions among auklets take place just after dusk or right before sunrise. During these times, ambient light is low and ultraviolet spectrums may be enhanced, serving to highlight the horn to other birds. More research into auklet fluorescence is clearly needed,

but we are excited to report this unusual phenomenon in another member of this unique group of seabirds.

Main Points

We report Rhinoceros auklet bill fluorescence under UV light for the first time.

Most of the fluorescence occurs in the horn.

The degree of fluorescence differs across individuals, indicating a potential signaling of reproductive status or quality.

Both sexes exhibited bill fluorescence.

Bradley Wilkinson, Michael Johns, Pete Warzybok. 2019. [Fluorescent ornamentation in the Rhinoceros Auklet \(*Cerorhinca monocerata*\)](#). *Ibis*. doi: [10.1111/ibi.12715](https://doi.org/10.1111/ibi.12715). Point Blue Contribution number 2187