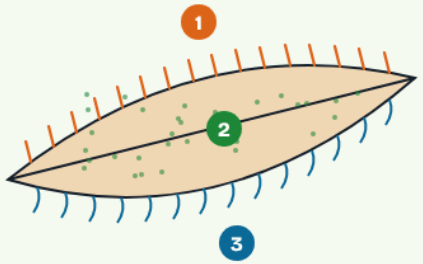
That is why

Why do owls fly so silently?

A comb, a velvet coat and a soft fringe calm the air over every flight feather, and big wings let owls fly slowly.

A Three soft features



Front edge on top, back edge below

1. Comb
bristles on the front edge break up turbulent air before it flows over

2. Velvet
a downy coat stops feathers rubbing against each other

3. Fringe
a soft, porous back edge where the noisy swirls usually start

B The flyover test near Berlin

92 microphones on the ground. Three birds flew over at almost the same speed.



What the microphones heard

The owl was a few decibels quieter. The gap was clear above 1.6 kHz, the high-pitched hiss of flight. Above 6.3 kHz, the owl was too quiet to measure at all.

Big wings let a barn owl fly as slowly as about 2 mph. But even at the same speed, the feathers made the difference.

C Why be quiet?

Stealth: prey can't hear it coming. Prey detection: its own wings don't drown out a rustling mouse.

Across 70 owl species, the evidence fits both. Night owls have wider combs, and wider combs are quieter. The Tawny Fish Owl and Burrowing Owl have little or no comb.

The price

Below about 15 degrees, a combed edge flies worse than a clean one.

Copied for wind turbines



The coating was tested on a full-size turbine blade section.

Like trading a swishing nylon jacket for a soft fleece robe.

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