

## Did You Know?

### Feathers do more than help birds fly!

Raptors such as hawks and owls have various types of specialized feathering, each designed so differently that they don't even look as if they come off of the same bird. As many bird watchers and non-bird watchers know, feathering almost defines the birds you see. You recognize them by feather color, length, even shape, and some people are able to figure out what type of bird belongs to a stray feather they found. While many larger hawk feathers are easily identified by the stripes or bars across them, there is some difficulty in identifying the smaller feathers off of the same hawks.

Feathers serve many functions on birds, some enable them to fly, some serve as insulators, some protect birds from injuries, and some provide camouflage or attract mates. Rehabilitators can also tell a lot about the health of a bird by their feather condition. If the tail feathers are all broken and frayed, we can guess our bird has been on the ground unable to fly for some time. Stress lines can form on birds who have experienced inadequate nutrition or poor health at some time during the feather's growth. If a bird has allowed his



Semiplume

feathers to get dirty or disheveled and makes no effort to preen, we can tell he is in very poor shape. But a rehabilitator really needs to know what types of feathering a bird should have and where. Raptors have five types we'll explore.

The feathers we are all most familiar with are the *Contour feathers*. These are flight and tail feathers and have a strong middle shaft with vanes (also known as webs) on both sides. The vanes or webs adhere to each other with little hooks or barbs so as to make a waterproof covering and to make a solid wing to lift the birds



Down

on the air. When birds are preening themselves they are conditioning these vanes so that they stay smooth and aerodynamic.

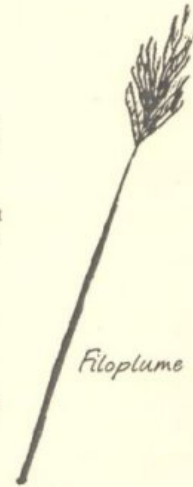
*Semiplume feathers* are fluffy and light, what we might call downy, but are longer than *Down feathers*. Both of these types lack hooks and barbs but the semiplume feathers have a main shaft, unlike the down. Semiplume feathers provide some insulation but mainly lay beneath the contour feathers to provide flexibility to move for flight.

Down, as many people know, is solely for insulation and are located right next to the skin. Because they have no main shaft they look like little puffs of cotton almost, and have little form. Around the nostrils, eyes and mouth of raptors we find

*Bristles*. These are funny shaped feathers with fluff at the bottom of the shaft but no vanes or down at the top. The shaft is very stiff, but has no barbs, and allows the birds to feel, almost like whiskers on an opossum or feelers on a bug. Some owls, like the barn owl, have bristles on their feet to help them feel things close by.

The purpose of the *Filoplume feathers* is not fully understood at this time. They are the opposite of the bristle in that they have no vanes or down on the bottom part of the shaft, but a little plume of barbs at the tip. We do know that at the follicle (where the feather grows from) there are highly sensitive nerve endings, and that these feathers are concentrated around the contour feathers, so they may play a role in feather movement.

Hopefully we've given you some clues to help you when identifying feathers you find in your nature walks, because now you know!



Filoplume



Bristle



Contour

Excerpt from *Care and Management of Captive Raptors*  
by Lori Arent, M.S. & Mark Martell, M.S.

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