

Bird Pirates

Biologist Julie Morand-Ferron studies feathered pirates.



STRIKE AGAIN!

by Amber J. Keyser

LOCATION:

**Masked Booby Roosting Site
Pitcairn Islands, South Pacific**

A great frigate bird hovers high above the beach. Its razor-thin, sharp-angled wings cut a black zig-zag against the blue sky. Far below, a masked booby zooms just above the surface of the water. Like an acrobat, the frigate bird dive-bombs from above. It yanks the booby's tail feathers. The terrorized bird vomits its last meal and darts away. The frigate bird swoops to catch and swallow the abandoned fish. Another successful attack for the man-o'-war bird!



Masked Booby



Pitcairn Islands

**LOCATION:**

**Roseate and Common Tern
Breeding Colony
Falkner Island, North Atlantic**

Chaos reigns and it smells like guano! Terns are everywhere — flying in and out, feeding chicks, fighting over space, and constantly jabbering. Amid the rabble, a delicate roseate tern perches above a cluster of common tern nests. Glossy black feathers cover its head. Snow white feathers touched with pink cover its belly. A common tern lands nearby with fish for its chick. Suddenly — *THWACK* — the roseate pounces! The pirate's lovely pink belly is full!



Jackdaw

A nesting roseate tern



Piracy is not just for hook-handed humans who sail the seas. When one animal steals food from another, biologists call it *kleptoparasitism* (from the Greek root *klepto* meaning “to steal”). Some spiders, fish, reptiles, and mammals practice piracy, but the most notorious thieves are birds. Ducks, herons, and hawks are occasional buccaneers, but seabirds are the real professionals, especially frigate birds, terns, gulls, skuas, jaegers, and sheathbills.

None of these agile flyers are full-time pirates. With some species, piratical activities supplement normal hunting, but with others, stolen food is a big part of the diet. Certain ecological conditions seem to make kleptoparasitism much more likely. These include lots of potential, predictable victims and large quantities of high quality, easy-to-steal food.

Most bird pirates are seabirds because breeding colonies seem to be the perfect place for a heist. Multiple species nest close together on small islands, and they number in the thousands. Adult birds fly to sea and return with fish to feed their young. Again and again, they catch fish and return.

All a smart pirate really has to do is wait and watch for the perfect moment to pounce.

A recent study by biologist Julie Morand-Ferron at the University of Quebec suggests that bird pirates may be smarter than the average pigeon. She examined 197 bird species that steal food from other birds. Were the brawniest birds the most likely to bully? Nope! Dr. Morand-Ferron found that pirates don't have bigger bodies — they have bigger brains!

Why would big brains matter? Piracy involves strategy — finding the right victim, planning an attack, learning new techniques, and being flexible enough to change the plan if things don't go quite right. For example, gulls and jackdaws that terrorize puffin colonies quickly learn which burrows contain active nests, then they hide in the grass and wait for the adults to return with beaks full of sand eels.

One unanswered question is: How do birds become kleptoparasites? Dr. David Shealer, a biologist and bird researcher at Loras College in Dubuque, Iowa, would like to figure that out. At his study site on Falkner Island, some female roseate terns are pirates, but most are not. Year after year, the same birds were always pirates and successful ones too! Their chicks grew faster and survived better than those of non-piratical mothers. If there are genes for stealing behavior, one would expect those chicks to grow up to be pirates. As far as Dr. Shealer knows, they don't, but more DNA work is underway to confirm this.

Julie Morand-Ferron (back) and an assistant observe Carib grackles in Barbados, a country on an island of the West Indies.

On the other hand, those terns might have used their big brains to learn how to steal. If so, why would they *choose* to be pirates? Energy is the key. Total energy available to an animal is equal to the amount of energy it gets from food minus the amount of energy it spends to catch that food. If a bird can get more total energy from stealing than from hunting, it should try the pirate life! ✉

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These gulls are on the lookout for dinner.

Ask Dr. David Shealer: Biologist in the Field

How did you become interested in studying kleptoparasitism?

I didn't set out to study it — it kind of just fell in my lap. One of my study females suspiciously fed her chicks at an extremely high rate, sometimes as many as three to four fish in 10 minutes. Often these fish had slash marks on them and occasionally she delivered only parts of fish. This was the first clue that she was a kleptoparasite.



What is it like being in a seabird colony?

Living and working in a tern colony is a disgusting job. Terns use two main defenses to drive you away from their nests: They swoop down on you and often jab you in the skull with their pointy bill, and they will rain steaming hot gobs of [guano] down upon you from above. On Falkner Island, hard hats are standard issue, but some terns have figured out that attacking hard hats doesn't hurt, so they will go for your ears, or even your knuckles when you're hunched over a nest writing down data.

Anything else you want kids to know about being a biologist in the field?

Scientists are not just men in white coats. Anyone can contribute to the advancement of scientific knowledge. You just have to know what questions to ask, or in the case of the tern pirates, to be in the right place at the right time.