

## Watching the skies



Luis Wilfrido Atienza

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lw.atienza@gmail.com

**T**he Philippines is home to over 500 species of birds. The most well-known of these species, such as the monkey-eating eagle, are endemic to the Philippines. Aside from supporting a wide variety of endemic bird species, the country hosts hundreds of species found in nearby countries and plays an important role in the migration patterns of birds.

Birds migrate at regular times every year, temporarily leaving their original habitats to escape cold temperatures, find new sources of food, or access breeding areas. Certain populations of birds year after year take the same paths—called flyways—to get to their destinations.

Because of the difficulty for birds to fly over the open ocean for long periods without stopping, their journeys often involve stops to rest. The Philippines is one such stop in one of the most expansive flyways, the East Asian–Australasian Flyway, connecting mainland Asia with Southeast Asia and Australia.

The Philippines being in a central spot in this flyway, there is much to be learned about the behavior of migrating birds as they enter and exit the country. Research will allow more to be found out about migration on a larger scale, the role the Philippines plays in the migration of the birds across the globe, the determination of particular sites important to bird migration, and assistance in directing efforts to protect the birds.

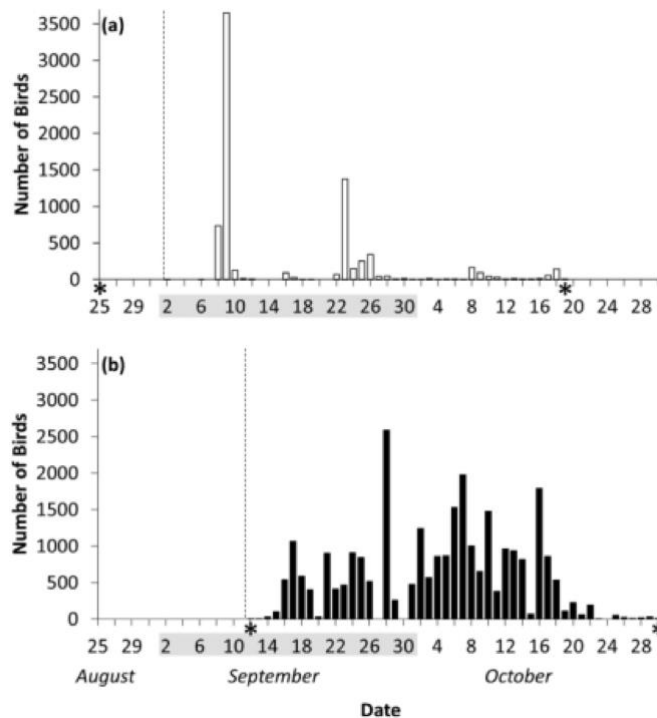
An international team of scientists, including researchers from West Virginia University, Davao del Norte State College, and University of the Philippines Mindanao, looked to fill some of any

gaps in such information by observing the behavior of raptors as they entered and left the Philippines during migration seasons.

The researchers chose two sites from where they made their observations. The first, at the northern tip of the Philippines, was on Basco Island, in the province of Batanes. From here, they observed raptors as they entered the country from Taiwan over a 50-day period from August to October 2014. The grey-faced buzzard (*Butastur indicus*) and Chinese sparrowhawk (*Accipiter soloensis*) were the main raptor species observed.

The second site was in Cape San Agustin, at the southeastern tip of Mindanao, where the researchers observed raptors leaving the Philippines, bound for Indonesia and other countries farther to the south. The observation period for this site was 47 days from September through October 2012. The two sites were optimal because they would be able to give the best picture of these raptors as they entered and exited the country over a long period during known migration seasons.

During the observation periods, the scientists counted how many birds entered or exited the country every day. Along with these counts, the researchers also recorded weather data, measuring the air temperature and wind speed every hour. Comparing the number of birds taking flight at a certain time with the weather conditions at that time would allow the researchers to determine the conditions that are most conducive to long flights, or the types of conditions that raptors prefer to fly across the ocean in.



The number of migrating raptors observed during each day of the study.

Gathered data showed the times of day that the different species each preferred as their flight times across the ocean. The data showed promising trends, such as more flights seeming to take place on days with favorable wind conditions and less cloud cover. The data tell us not only that certain factors make for better ocean crossings but also that the raptors sense and observe these factors and make ocean crossings accordingly.

The data showed promising avenues for further study, such as the possibility of determining the ways that wind patterns and thermal sea patterns (the differing water temperatures over parts of the ocean's surface) affect migrating raptors in different areas.

A significant aspect of this study is that the researchers relied almost entirely on observation. Without the use of expensive machines or complex laboratory setups, the researchers were able to find a starting point for research into migration patterns within the country and the Philippines' role in global bird migration.

A study of this kind builds a foundation for more complex explorations. The collaborative nature of scientific research and its gradual but meaningful progression mean that while no groundbreaking

discoveries were made, the knowledge gained can serve to change our collective understanding of bird migration and even ecology as a whole.

As this study is a suitable basis for both local studies and international ones, it highlights the role that the Philippines—and Filipino scientists—can play not only in discovering more things about our own country but also in contributing to research on an international scale and to the global scientific conversation.

## REFERENCE

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**Luis Wilfrido Atienza** graduated from the Ateneo de Manila University, with a BS in Biology, and a minor in poetry. He currently works as a copywriter for a sustainability agency, and spends some of his free time writing about science.