Ara and *Orthopsittaca* Macaw Populations in the Peruvian Amazon

Thomas Hull

I. Overview

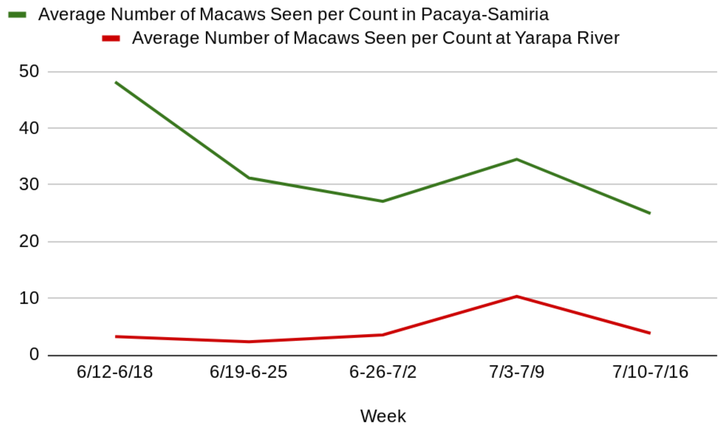
The largest remaining tropical rainforest, home to over 10% of the planet's biodiversity, the Amazon Rainforest is a critical habitat for millions of species of plants and animals. It is also home to 30 million people whose livelihoods depend on the health of the rainforest, and its flora influences weather patterns across South America and stores 90-140 billion metric tons of carbon. The entire planet is a stakeholder in the Amazon Rainforest, and the more it is degraded, the more we all lose. Thus, it is vital that we assess the forest's health, which can be done by evaluating the populations of indicator species, such as macaws. This is what I did for two weeks in the Yarapa River region of Peru, assisting surveys conducted by Operation Wallacea to monitor the health of the forest.

II. Methods

Point counts were conducted on the Yarapa River in which all macaw and parrot species seen were recorded. This took place for 15 minutes at each site the boat stopped, and the species, group size, estimated distance of sightings, GPS location, start and end times, times of sightings, and weather conditions were recorded. This data was gathered during the two weeks I spent at that location, as well as the rest of the summer of 2019. In addition, similar point counts were conducted during the summer of 2018 in the Pacaya-Samiria National Reserve.

Figure 1: The riverine habitat where the point counts were conducted.

Figure 2 (above): Scarlet macaws (*Ara macao*), one of six *Ara* and *Orthopsittaca* macaw species observed.
Figure 3 (below): Graph comparing the macaw populations at the two sites.



III. Results

The Pacaya-Samiria National Reserve site had a much higher average number of macaws seen per count than the Yarapa River site for every recorded week. The Pacaya-Samiria results varied from 24.95 to 48.19, with an average for the entire summer of 33.2. On the other hand, the Yarapa results varied from 2.32 to 10.33, with an average for the entire summer of 4.65.

IV. Discussion & Analysis

The Yarapa River site is unprotected and is home to a number of native peoples, while the Pacaya-Samiria National Reserve Site is protected and has strict regulations concerning human activity. In all other ways the two sites are very similar, so a reasonable explanation for the stark differences between their macaw populations is that the human activity at the Yarapa River site is negatively affecting the macaws. One possible human activity that could be causing this is deforestation. Macaws are considered indicator species because they depend on primary forests for feeding and nesting, in particular healthy stands of aguaje (*Mauritia flexuosa*). The locals around the Yarapa River cut down aguaje trees—as well as many others—to harvest their leaves and fruit, so this could be negatively impacting the macaws. Other factors could include poaching for their colorful feathers and general disturbance.

V. Conclusion

If the macaw population around the Yarapa River is an accurate representation of the macaw populations of other unprotected areas of the Amazon Rainforest, then these data imply that macaws across the Amazon could be in a very dire situation. I saw first hand just how much we have to lose if this is true. Thus, I think it's important that we acknowledge the success of the Pacaya-Samiria Reserve and install similar protected areas throughout the Amazon, for the sake of one of the most incredible ecological regions on earth.

VI. Acknowledgments

I would like to thank Mrs. Abraham for putting up with me and the other Magnetos for two weeks. I would also like to thank Operation Wallacea and its wonderful biologists for providing the data for this project.