



Larus argentatus & Larus delawarensis

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Objective

The purpose of this study was to compare the ethograms of the herring gull and ring billed gull. We hypothesized that since herring and ring billed gulls are sympatric and related, they would possess similar ethograms. Social signals would be used for both intra and inter-specific communication. The purpose of social signals is to aid in foraging and resolution of conflict. Both foraging and conflict impose costs on individuals.

Research Methods

The behaviors of the ring billed gull were observed and recorded at the beach at Seaside Park. The research was performed in the morning because that seemed to be when the gulls were most active. On the first day a laptop that was recording was placed on a rock adjacent to the group of gulls. The video was captured for twenty minutes and as soon as it was stopped, we began ad libitum sampling.

On the second day both a go-pro camera that was placed by the water and a laptop mounted closer inland recorded two different groups of ring billed gulls. Again, ad libitum sampling was performed.

Ad libitum sampling was used to record gull behaviors as they were performed; one noticed that the ring billed gulls were interacting with a few herring gulls. Herring gulls are usually seen throughout the East Coast shoreline. They spend hours bathing, grooming and loafing. Researching on the first day it was noticed in the videos recorded that there were a few herring gulls associating with the ring billed gulls, compared to the second day of research where there were hardly any recorded. If the behaviors of the ring billed gull were to be recorded then they would be better understood. This is because the ring billed gull can be partially territorial. Herring gulls are more plentiful, and ring billed gulls less plentiful at Pleasure Beach as opposed to Sea Side Park (Leedom, 2016).

What is an Ethogram?

An ethogram is a full documentation of the behavior of a species. Ethograms are important because they often reveal phylogenetic relationships. The herring gull, *Larus argentatus* ethogram was one of the first to be described (Tinbergen, 1953). A related but smaller species, the ring billed gull *Larus delawarensis* is found throughout New England on beaches, rivers, lakes and meadows.

Results

Ethogram	Laptop Ethogram Behavior
AWF 2:40	Attack and Wing flap(AWF)- The Gull seems to flap its wings and attack another gull.
AWF 4:00	
AWF 4:30	
WO 4:44	
SW 4:47	Scare Other (SO) – The gull seems to run towards another Gull to scare it away with its wings open. Or the bird who is scared will flap its wings.
F 5:10	
G 5:10	
G 5:27	
SO 6:40	
F 7:31	One Wing Open (WO) – Gull is seen having one wing open
FY 7:40	
F 7:41	
F 8:00	Grooming (G)- The Gull is seen grooming its self
SW 8:15	
SO 9:37	Feeding (F)- Gulls are seen with their head down and pecking at the ground.
AWF 10:15	
AWF 10:20	
AWF 10:36	Swimming (SW) – Gulls are seen floating on top of the water.
AWF 10:39	
SO 11:33	
SW 11:40	Fly (FY)- Gulls are seen flying
AWF 12:50	
WO 13:10	All Flap Wings (AF)- All the Gulls are seen flapping their wings
SO 13:45	
SO 14:05	
AF 18:00	<u>Key</u>
AWF 19:40	AWF SO WO
SO 21:50	G F SW
SO 21:52	FY AF

Ethogram	Gopro Ethogram Behavior
SW: 0:12	Attack and Wing flap (AWF) - The Gull seems to flap its wings and attack another gull.
F: 0:37	Wing Open (WO) - The gull opens its wing.
AWF: 1:00	Scare Other (SO) – The gull seems to run towards another Gull to scare it away with its wings open. Or the bird who is scared will flap its wings.
G: 1:50	
AWF: 3:12	
AWF: 3:30	Grooming (G) - The Gull is seen grooming its self.
C: 3:50	Feeding (F) - Gulls are seen with their head down and pecking at the ground.
SO: 4:30	
AWF: 5:00	Swimming (SW) – Gulls are seen floating on top of the water.
G: 5:07	
G: 5:20	Fly (FY) - Gulls are seen flying.
C: 6:12	All Flap Wings (AFW) - All the Gulls are seen flapping their wings
WO: 6:55	
G: 6:56	Communicate(C) - Gulls will make noises at each other.
SO: 7:00	
C: 7:05	
C: 7:30	<u>Key</u>
F: 7:31	AWF SO WO
FY: 7:40	G F SW
F: 7:41	FY AF
SW: 7:48	
FY: 8:03	
AWF: 8:35	
AWF: 8:35	
SW: 8:51	
AF: 8:57	
F: 9:00	
F: 9:00	
SO: 9:31	
AWF: 9:36	
AWF: 9:57	

Conclusion

In conclusion, we observed that ring billed gulls had several behaviors that were similar to published accounts of herring gull behaviors. Behavioral similarity likely allows the two species to communicate.

The behaviors that were similar seemed to be attacking other gulls, stereotypic feeding, grooming, flying as well as other behaviors. The Ring billed gulls from the laptop video seemed to attack and scare away other gulls that were surrounding them the most. Those two behaviors were recorded the most. The ring billed gull also was seen pecking at the ground for food, swimming and grooming. If the gulls weren't attacking the other gulls they seemed to just scare them away. Behaviors that have to do with scaring away and attacking seem related to feeding competition. Examining the video and times on the laptop only major behaviors were recorded such as attacking and scaring, but throughout the entire video it is seen that birds were always feeding, walking, foraging (looking for food or in the water). The video captured from the gopro video camera observed similar behaviors. Gulls can be seen mostly walking, feeding and flying. These birds flock together in large groups dividing parts of Seaside beach. Gulls feed on mollusks and small sea life using their large ring bills. The younger birds were dominated by the older gulls sticking their chests out with a simple call. The birds were found in a large numbers making it easy to characterize certain behaviors.

References

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