

Project Update: April 2013

Project Outline

The proposed feasibility study will utilise the opportunity afforded by ex situ populations of African penguins – such as at the Bayworld Oceanarium – to investigate various research questions. The response of penguins to the transmitted signal and to tag attachment positions and techniques will be investigated, as well as the efficacy of the tag to record and transmit foraging events. Techniques will be refined ex situ and recommendations made regarding the applicability of this technology to track penguins at sea. If acoustic tags prove feasible for investigating the movement and foraging of African penguins, such a tagging project will be conducted in conjunction with a further investigation into the bioacoustic impacts of industrial developments on top predators and marine ecosystem health.

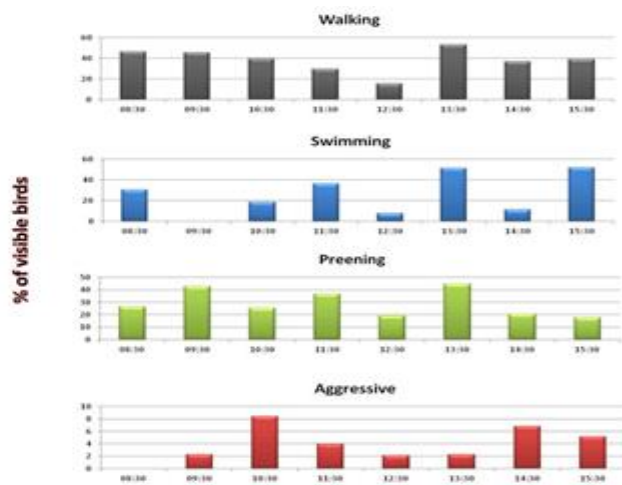
Behavioural observations of African Penguins

Following approval from the Bayworld Ethics Committee, the behavioural response of African Penguins to an active and inactive VEMCO 69 kHz transmitter was recorded.

The resident penguins at Bayworld were exposed to a transmitter (active and inactive) placed on a pole in the colony. Behavioural observations were conducted from a suitable vantage point during 10-minute sessions every hour from 8h30 to 16h30 over several days, and supplemented by GoPro video/photographs. The transmitter was alternatively active and inactive for subsequent observation sessions.

A GoPro camera was affixed above the colony such that it was able to photograph any penguins within a 2 m radius of the transmitter, and set to take a photograph every ten seconds. This resulted in sixty photographs per observation session of 10 minutes, and a total of 4440 photographs over 24 sessions! The position, behaviour and movement of penguins in relation to the transmitter were recorded for each photograph (see data excerpt below). This data supplemented the behavioural observations that were conducted concurrently.

1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Penguin	GoPro	pics				S	L	W		SP	AP	A	H	
2	Date	Pinger	Observation session	photo no.	Photo name	Size from pinger	Standing	Lying	Walking	Walk towards	Walk away	Self-preening	Ally-preening	Aggressive	Head-shaking
592	08-Mar	ON	09:30	50	0824	8	8	8	1	1					
593	08-Mar	ON	09:30	51	0825	8	8	8	1		1				1
594	08-Mar	ON	09:30	52	0826	9	9	9	3	3					
595	08-Mar	ON	09:30	53	0827	9	9	9	7	2	5				
596	08-Mar	ON	09:30	54	0828	8	8	8	4	2	4				
597	08-Mar	ON	09:30	55	0829	8	8	8	1	1	1				
598	08-Mar	ON	09:30	56	0830	8	8	8	2	1	1	1			
599	08-Mar	ON	09:30	57	0831	6	6	6	1	1					
600	08-Mar	ON	09:30	58	0832	5	5	5	2	2	2				
601	08-Mar	ON	09:30	59	0833	4	4	4	2	2	2				
602	08-Mar	ON	09:30	60	0834	1	1	1							
603	08-Mar	OFF	10:30	1	0867	5	5	5	1	1					
604	08-Mar	OFF	10:30	2	0868	5	5	5	1	1					
605	08-Mar	OFF	10:30	3	0869	6	6	6	1	1					
606	08-Mar	OFF	10:30	4	0860	8	8	8	3	3					
607	08-Mar	OFF	10:30	5	0861	8	8	8	1		1				
608	08-Mar	OFF	10:30	6	0862	8	8	8	2	1	1				
609	08-Mar	OFF	10:30	7	0863	8	8	8	6	6					
610	08-Mar	OFF	10:30	8	0864	9	9	9	1	1					
611	08-Mar	OFF	10:30	9	0865	8	8	8					2		
612	08-Mar	OFF	10:30	10	0866	8	8	8				1			
613	08-Mar	OFF	10:30	11	0867	8	8	8							



Left: Excerpt from spreadsheet detailing penguin behaviour recorded. Right: Diurnal behaviour of penguins as recorded during observation sessions.

Each Animal Keeper has a preference for an individual penguin, and has built a trust relationship with that bird. These birds are particularly valuable from a research perspective, as they are used to being handled and can be closely monitored. The next stage of this project will utilise this in attaching transmitters to these birds and monitoring their response.



African penguins spending time with their keepers during a public presentation to a school group. Education is crucial cornerstone of conservation and these children will hopefully recall their fascination with these endangered birds for years to come and become conservation ambassadors themselves.