SUPPLEMENTARY MATERIAL

FEEDING STRATEGIES FOR CAPTIVE ASIAN SMALL-CLAWED OTTERS (*Aonyx cinereus*, Illiger, 1815): WHAT WORKS TO REDUCE REPETITIVE FEEDING ANTICIPATORY ACTIVITY IN THE COLD SEASON?

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Table S.1. State behaviours Winter 2015: Means (*N* =4), standard deviations and outcomes of the Kruskal-Wallis test for the behaviours that were significantly influenced by time of day, at $p \leq 0.05$ level of significance (n.s. = not significant).

Behaviour Winter 2015	Time Intervals							Outcome of the Kruskal-Wallis Test (5 d.f.)
	10:30-13:40	13:40-14:00	14:00-14:20	14:20-14:40	# 15:10-15:30	15:30-15:50	15:50-16:10	
Land Locomotion	n/a	**32.2** ±1.2	**3.8** ±1.8	**0.6** ±0.7	**14.4** ±13.3	**8.8** ±4.7	**7.5** ±5.9	P = 0.010 H = 15.189
Swimming	n/a	**47.2** ±8.9	**8.1** ±8.0	**2.2** ±2.6	**17.5** ±14.0	**17.8** ±19.5	**17.2** ±15.0	P = 0.023 H = 13.077
Foraging	n/a	**2.2** ±4.4	**26.6** ±2.1	**14.1** ±14.3	**6.9** ±10.5	**13.1** ±8.8	**10.3** ±4.5	P=0.039 H = 11.688
Maintenance	n/a	**2.2** ±1.6	**43.1** ±12.9	**20.9** ±11.2	**8.8** ±11.1	**17.5** ±11.8	**14.7** ±15.6	P = 0.018 H = 13.596
Scent Marking	n/a	**0.0**	**6.3** ±2.3	**8.1** ±5.5	**2.5** ±3.1	**1.9** ±3.0	**5.6** ±3.9	P = 0.042 H = 11.534

Playing	n/a	**0.6** ±1.3	**2.2** ±2.6	**3.8** ±3.7	**10.3** ±13.6	**5.6** ±3.1	**4.7** ±3.6	n.s.
Social Affiliative	n/a	**0.0**	**2.5** ±2.9	**19.4** ±18.1	**5.6** ±6.5	**1.6** ±3.1	**5.0** ±5.4	n.s.
Aggression	n/a	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	n.s.
Vigilance	n/a	**15.3** ±5.7	**6.6** ±8.0	**4.1** ±4.5	**10.3** ±9.5	**29.4** ±13.3	**20.0** ±12.0	P = 0.043 H = 11.445
Resting & Sleeping	n/a	**0.0**	**0.0**	**22.2** ±17.6	**20.9** ±40.2	**0.6** ±1.3	**8.4** ±9.8	P = 0.041 H = 11.573
Out of Sight	n/a	**0.3** ±0.6	**0.9** ±1.9	**4.7** ±5.6	**2.8** ±2.8	**3.8** ±4.4	**6.6** ±4.9	n.s.

Table S.2. State behaviours Summer 2016: Means (*N* =4), standard deviations and outcomes of the Kruskal-Wallis test for the behaviours that were significantly influenced by time of day, at $p \leq 0.05$ level of significance (n.s. = not significant).

Behaviour Summer 2016	**Time Intervals**													**Outcome of the Kruskal-Wallis Test (11 d.f.)**
	10:30-10:50	**10:50-11:10**	**11:10-11:30**	**11:30-11:50**	**11:50-12:10**	**#**	**13:00-13:20**	**13:20-13:40**	**13:40-14:00**	**14:00-14:20**	**14:20-14:40**	**#**	**15:10-15:30**	**15:30-15:50**	**15:50-16:10**	
Land Locomotion	**2.5** ±3.1	**4.4** ±5.9	**1.6** ±2.4	**8.1** ±8.2	**7.2** ±5.8		**20.0** ±11.9	**24.1** ±2.1	**26.9** ±3.6	**3.1** ±1.6	**0.6** ±0.7		**13.1** ±8.3	**13.1** ±6.6	n/a	P = 0.001 H = 32.060
Swimming	**3.4** ±6.9	**5.0** ±6.1	**9.4** ±17.1	**15.6** ±13.3	**22.8** ±18.2		**38.4** ±25.9	**61.9** ±8.1	**62.8** ±2.1	**20.6** ±5.4	**4.1** ±8.1		**32.5** ±24.5	**42.5** ±18.3	n/a	P = 0.001 H = 31.476
Foraging	**1.3** ±1.8	**1.9** ±3.0	**2.2** ±2.8	**3.1** ±4.1	**2.2** ±1.9		**1.6** ±0.6	**1.3** ±1.0	**0.3** ±0.6	**4.4** ±3.9	**0.3** ±0.6		**4.1** ±1.6	**6.9** ±8.1	n/a	n.s.
Maintenance	**1.9** ±2.2	**5.0** ±5.3	**6.9** ±3.1	**7.5** ±6.1	**7.8** ±5.8		**3.4** ±2.6	**0.9** ±1.2	**2.8** ±4.0	**42.5** ±7.0	**9.7** ±9.8		**9.7** ±10.8	**15.0** ±12.9	n/a	P = 0.044 H = 20.120
Scent Marking	**0.9** ±1.9	**2.2** ±3.6	**0.6** ±0.7	**5.6** ±5.2	**1.9** ±1.6		**0.6** ±1.3	**1.3** ±1.0	**0.3** ±0.6	**11.6** ±6.0	**1.9** ±2.2		**3.4** ±2.6	**3.4** ±3.9	n/a	P = 0.049 H = 19.717
Playing	**7.2** ±12.0	**13.4** ±26.0	**10.9** ±14.2	**14.4** ±13.6	**12.5** ±12.2		**4.7** ±5.6	**1.3** ±2.5	**1.3** ±1.4	**5.0** ±3.4	**12.2** ±12.0		**1.3** ±1.0	**1.6** ±2.4	n/a	n.s.
Social Affiliative	**4.1** ±4.3	**3.8** ±1.0	**5.0** ±5.3	**8.4** ±9.0	**4.4** ±3.8		**1.9** ±3.0	**0.9** ±1.2	**0.0**	**6.3** ±4.3	**19.4** ±16.6		**1.3** ±1.4	**2.8** ±2.6	n/a	n.s.
Aggression	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**		**0.3** ±0.6	**0.0**	**0.0**	**1.3** ±2.5	**0.0**		**0.3** ±0.6	**0.0**	n/a	n.s.
Vigilance	**6.6** ±6.0	**5.6** ±4.6	**6.6** ±3.3	**5.3** ±3.6	**5.3** ±4.5		**10.3** ±8.6	**5.6** ±2.6	**4.7** ±4.8	**4.4** ±2.2	**6.3** ±3.1		**12.5** ±2.7	**11.6** ±7.3	n/a	n.s.
Resting & Sleeping	**64.4** ±39.0	**57.2** ±37.0	**47.8** ±38.1	**26.9** ±48.9	**24.1** ±48.1		**17.5** ±35.0	**0.0**	**0.0**	**0.3** ±0.6	**45.3** ±31.3		**18.8** ±29.1	**0.0**	n/a	P = 0.009 H = 25.013

Out of Sight	**7.8** ±15.6	**1.6** ±3.1	**9.1** ±11.1	**5.0** ±5.3	**11.9** ±9.9	**1.3** ±2.5	**2.8** ±1.6	**0.9** ±0.6	**0.6** ±1.3	**0.3** ±0.6	**3.1** ±3.8	**3.1** ±3.6	n/a	n.s.

Table S.3. State behaviours Winter 2018: Means (*N* =4), standard deviations and outcomes of the Kruskal-Wallis test for the behaviours that were significantly influenced by time of day, at $p \leq 0.05$ level of significance (n.s. = not significant).

Behaviour Winter 2018	Time Intervals					#						#				Outcome of the Kruskal-Wallis Test (11 d.f.)
	10:30-10:50	10:50-11:10	11:10-11:30	11:30-11:50	11:50-12:10		13:00-13:20	13:20-13:40	13:40-14:00	14:00-14:20	14:20-14:40		15:10-15:30	15:30-15:50	15:50-16:10	
Land Locomotion	**5.9** ±11.9	**5.3** ±10.6	**4.7** ±9.4	**10.6** ±4.3	**5.6** ±7.3		**16.6** ±2.6	**19.4** ±3.1	**17.5** ±3.5	**7.2** ±3.9	**11.9** ±8.2		**14.7** ±5.0	**20.6** ±8.9	n/a	n.s.
Swimming	**4.4** ±8.8	**9.7** ±19.4	**12.8** ±25.6	**7.2** ±6.8	**5.6** ±8.3		**37.8** ±29.1	**33.8** ±18.3	**44.7** ±12.8	**9.7** ±4.5	**17.5** ±13.5		**25.3** ±13.2	**12.5** ±10.9	n/a	P = 0.032 H = 21.118
Foraging	**0.6** ±1.3	**0.0**	**0.0**	**19.7** ±15.1	**17.8** ±24.5		**2.8** ±4.8	**5.0** ±7.6	**1.3** ±1.8	**17.2** ±6.2	**2.8** ±3.6		**3.4** ±5.3	**5.0** ±10.0	n/a	P = 0.014 H = 23.636
Maintenance	**1.9** ±3.8	**0.0**	**0.0**	**32.8** ±8.9	**26.6** ±11.9		**2.2** ±4.4	**5.0** ±6.8	**4.7** ±1.9	**43.1** ±11.3	**10.6** ±6.0		**6.3** ±7.8	**7.5** ±15.0	n/a	P < 0.001 H = 34.351
Scent Marking	**0.0**	**0.0**	**0.0**	**8.4** ±9.8	**8.4** ±9.1		**0.0**	**2.2** ±2.6	**1.9** ±3.8	**12.2** ±4.7	**5.9** ±6.1		**3.4** ±3.4	**0.6** ±1.3	n/a	P = 0.010 H = 24.616
Playing	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**	**0.0**	**0.0**	**0.0**	**4.1** ±5.3		**5.6** ±11.3	**0.9** ±1.9	n/a	n.s.
Social Affiliative	**1.9** ±3.8	**0.0**	**0.0**	**0.6** ±0.7	**8.8** ±9.4		**0.3** ±0.6	**0.3** ±0.6	**0.0**	**0.3** ±0.6	**3.4** ±6.1		**0.3** ±0.6	**1.3** ±2.5	n/a	n.s.
Aggression	**0.0**	**0.0**	**0.0**	**0.0**	**0.9** ±1.9		**0.0**	**0.0**	**0.0**	**0.3** ±0.6	**0.0**		**0.3** ±0.6	**0.0**	n/a	n.s.
Vigilance	**14.4** ±27.9	**9.7** ±19.4	**7.5** ±15.0	**8.8** ±5.0	**0.0**		**25.3** ±16.8	**32.5** ±5.1	**29.7** ±10.3	**6.6** ±6.2	**21.3** ±15.9		**33.8** ±18.9	**50.9** ±23.2	n/a	P = 0.008 H = 25.440
Resting & Sleeping	**45.9** ±53.3	**50.0** ±57.7	**50.0** ±57.7	**7.5** ±11.9	**13.8** ±17.4		**0.3** ±0.6	**0.0**	**0.0**	**1.9** ±3.0	**21.3** ±40.0		**3.8** ±7.5	**0.3** ±0.6	n/a	n.s.

Out of Sight	**25.0** ±50.0	**25.3** ±49.8	**25.0** ±50.0	**4.4** ±7.2	**12.5** ±25.0	**14.7** ±27.7	**1.9** ±3.0	**0.3** ±0.6	**1.6** ±3.1	**1.3** ±1.8	**3.1** ±4.1	**0.3** ±0.6	n/a	n.s.

Table S.4. State behaviours Winter 2019: Means (*N* =3), standard deviations and outcomes of the Kruskal-Wallis test for the behaviours that were significantly influenced by time of day, at p ≤ 0.05 level of significance (n.s. = not significant).

Behaviour Winter 2019	Time Intervals					#					#				Outcome of the Kruskal-Wallis Test (11 d.f.)
	10:30-10:50	10:50-11:10	11:10-11:30	11:30-11:50	11:50-12:10		13:00-13:20	13:20-13:40	13:40-14:00	14:00-14:20	14:20-14:40		15:10-15:30	15:30-15:50	15:50-16:10	
Land Locomotion	**4.6** ±7.9	**1.3** ±2.2	**5.8** ±10.1	**9.2** ±15.9	**7.5** ±13.0		**18.8** ±14.7	**20.0** ±17.3	**16.7** ±15.3	**19.2** ±15.1	**3.3** ±1.4		**7.1** ±6.4	**15.0** ±9.4	n/a	n.s.
Swimming	**0.0**	**0.0**	**0.0**	**8.3** ±14.4	**9.6** ±16.6		**21.7** ±24.0	**19.6** ±17.5	**27.5** ±24.6	**0.4** ±0.7	**0.8** ±1.4		**4.2** ±3.6	**7.1** ±6.2	n/a	n.s.
Foraging	**0.0**	**1.3** ±2.2	**1.3** ±2.2	**1.7** ±2.9	**1.7** ±2.9		**1.3** ±1.3	**0.4** ±0.7	**0.0**	**12.9** ±13.8	**8.3** ±8.0		**10.8** ±9.5	**3.8** ±2.5	n/a	n.s.
Maintenance	**12.5** ±15.6	**9.6** ±16.6	**0.8** ±1.4	**0.8** ±1.4	**0.4** ±0.7		**0.0**	**0.0**	**0.0**	**28.8** ±18.0	**23.3** ±13.1		**14.6** ±12.8	**8.8** ±1.3	n/a	P = 0.024 H = 22.030
Scent Marking	**0.0**	**0.8** ±1.4	**0.0**	**0.4** ±0.7	**0.8** ±1.4		**0.0**	**0.0**	**0.0**	**2.5** ±2.5	**12.1** ±10.6		**4.2** ±5.2	**2.9** ±1.4	n/a	n.s.
Playing	**0.0**	**8.3** ±14.4	**0.8** ±1.4	**0.8** ±1.4	**5.0** ±8.7		**5.0** ±6.6	**1.3** ±2.2	**0.0**	**0.0**	**10.8** ±12.0		**7.5** ±7.5	**21.3** ±20.1	n/a	n.s.
Social Affiliative	**1.3** ±2.2	**12.1** ±20.9	**5.0** ±6.6	**0.0**	**0.8** ±1.4		**0.0**	**0.0**	**0.0**	**0.8** ±1.4	**12.5** ±13.9		**5.8** ±10.1	**2.9** ±4.0	n/a	n.s.
Aggression	**0.0**	**0.0**	**0.8** ±1.4	**0.0**	**0.0**		**0.0**	**0.4** ±0.7	**0.0**	**0.8** ±1.4	**0.0**		**0.0**	**2.5** ±2.2	n/a	n.s.
Vigilance	**4.2** ±6.2	**0.0**	**5.4** ±7.3	**12.1** ±20.9	**10.8** ±13.5		**24.2** ±15.0	**24.6** ±20.6	**22.5** ±19.5	**20.4** ±24.7	**0.4** ±0.7		**5.8** ±5.6	**15.8** ±6.2	n/a	n.s.
Resting & Sleeping	**77.5** ±28.8	**66.7** ±57.7	**80.0** ±28.4	**66.7** ±57.7	**59.2** ±51.6		**0.0**	**26.7** ±46.2	**33.3** ±57.7	**3.3** ±5.8	**15.0** ±26.0		**26.7** ±35.9	**10.0** ±17.3	n/a	n.s.

Out of Sight	**0.0**	**0.0**	**0.0**	**0.0**	**4.2** ±7.2	**29.2** ±50.5	**7.1** ±10.2	**0.0**	**10.8** ±18.8	**13.3** ±23.1	**13.3** ±17.0	**10.0** ±17.3	n/a	n.s.

Table S.5. Event behaviours Winter 2015: Means (*N* =4), standard deviations and outcomes of the Kruskal-Wallis test for the behaviours that were significantly influenced by time of day, at $p \leq 0.05$ level of significance (n.s. = not significant).

Behaviour Winter 2015	Time Intervals							Outcome of the Kruskal-Wallis Test (5 d.f.)
	10:30-13:40	13:40-14:00	14:00-14:20	14:20-14:40	#	15:10-15:30	15:30-15:50	15:50-16:10	
Begging	n/a	**92.5** ±8.7	**13.8** ±15.5	**0.0**		**18.8** ±22.5	**37.5** ±27.2	**25.0** ±43.4	P = 0.021 H = 13.297
Short Calls	n/a	**98.8** ±2.5	**18.8** ±13.1	**3.8** ±7.5		**43.8** ±41.9	**42.5** ±44.8	**35.0** ±45.1	n.s.
Long Squeals	n/a	**17.5** ±15.0	**6.3** ±9.5	**0.0**		**10.0** ±9.1	**5.0** ±7.1	**3.8** ±4.8	n.s.

Table S.6. Event behaviours Summer 2016: Means (*N* =4), standard deviations and outcomes of the Kruskal-Wallis test for the behaviours that were significantly influenced by time of day, at $p \leq 0.05$ level of significance.

Behaviour Summer 2016	Time Intervals														Outcome of the Kruskal-Wallis Test (11 d.f.)
	10:30-10:50	10:50-11:10	11:10-11:30	11:30-11:50	11:50-12:10	#	13:00-13:20	13:20-13:40	13:40-14:00	14:00-14:20	14:20-14:40	#	15:10-15:30	15:30-15:50	15:50-16:10	
Begging	**1.3** ±2.5	**1.3** ±2.5	**1.3** ±2.5	**5.0** ±10.0	**8.8** ±17.5		**61.3** ±43.3	**80.0** ±20.0	**92.5** ±2.9	**7.5** ±2.9	**0.0**		**41.3** ±39.7	**38.8** ±35.7	n/a	P = 0.001 H = 30.660
Short Calls	**0.0**	**2.5** ±5.0	**0.0**	**0.0**	**7.5** ±8.7		**71.3** ±47.7	**97.5** ±5.0	**96.3** ±7.5	**6.3** ±6.3	**1.3** ±2.5		**55.0** ±42.0	**48.8** ±37.5	n/a	P = 0.001 H = 33.035
Long Squeals	**0.0**	**0.0**	**2.5** ±5.0	**3.8** ±4.8	**6.3** ±7.5		**23.8** ±16.0	**11.3** ±13.1	**15.0** ±7.1	**2.5** ±2.9	**0.0**		**10.0** ±13.5	**8.8** ±7.5	n/a	P = 0.034 H = 20.910

Table S.7. Event behaviours Winter 2018: Means (*N* =4), standard deviations and outcomes of the Kruskal-Wallis test for the behaviours that were significantly influenced by time of day, at $p \leq 0.05$ level of significance.

Behaviour Winter 2018	Time Intervals					#						#				Outcome of the Kruskal-Wallis Test (11 d.f.)
	10:30-10:50	10:50-11:10	11:10-11:30	11:30-11:50	11:50-12:10		13:00-13:20	13:20-13:40	13:40-14:00	14:00-14:20	14:20-14:40		15:10-15:30	15:30-15:50	15:50-16:10	
Begging	**18.8** ±37.5	**10.0** ±20.0	**6.3** ±12.5	**23.8** ±14.4	**0.0**		**31.3** ±22.9	**41.3** ±15.5	**43.8** ±13.8	**11.3** ±11.1	**17.5** ±11.9		**40.0** ±32.4	**63.8** ±34.2	n/a	P = 0.011 H = 24.364
Short Calls	**25.0** ±50.0	**25.0** ±50.0	**25.0** ±50.0	**26.3** ±12.5	**5.0** ±7.1		**87.5** ±25.0	**100.0**	**100.0**	**36.3** ±28.7	**72.5** ±48.6		**92.5** ±15.0	**93.8** ±12.5	n/a	P = 0.004 H = 27.393
Long Squeals	**0.0**	**2.5** ±5.0	**1.3** ±2.5	**12.5** ±15.5	**0.0**		**8.8** ±8.5	**31.3** ±8.5	**25.0** ±4.1	**5.0** ±4.1	**12.5** ±8.7		**15.0** ±14.7	**15.0** ±9.1	n/a	P = 0.001 H = 30.404

Table S.8. Event behaviours Winter 2019: Means (*N* =3), standard deviations and outcomes of the Kruskal-Wallis test for the behaviours that were significantly influenced by time of day, at $p \leq 0.05$ level of significance (n.s. = not significant).

Behaviour Winter 2019	Time Intervals					#						#				Outcome of the Kruskal-Wallis Test (11 d.f.)
	10:30-10:50	10:50-11:10	11:10-11:30	11:30-11:50	11:50-12:10		13:00-13:20	13:20-13:40	13:40-14:00	14:00-14:20	14:20-14:40		15:10-15:30	15:30-15:50	15:50-16:10	
Begging	**0.0**	**0.0**	**5.0** ±8.7	**26.7** ±46.2	**25.0** ±43.3		**65.0** ±56.3	**65.0** ±56.3	**65.0** ±56.3	**25.0** ±35.0	**0.0**		**0.0**	**16.7** ±17.6	n/a	n.s.
Short Calls	**0.0**	**0.0**	**13.3** ±23.1	**33.3** ±57.7	**33.3** ±57.7		**66.7** ±57.7	**66.7** ±57.7	**66.7** ±57.7	**35.0** ±43.3	**0.0**		**30.0** ±26.5	**63.3** ±55.1	n/a	n.s.
Long Squeals	**0.0**	**0.0**	**3.3** ±5.8	**18.3** ±31.8	**25.0** ±43.3		**68.3** ±25.7	**45.0** ±49.2	**53.3** ±48.6	**23.3** ±27.5	**0.0**		**25.0** ±8.7	**35.0** ±18.0	n/a	P = 0.041 H = 20.323

Figure S.1. The otters housed at the Tynemouth Aquarium between July 2014 and April 2019 (*Photos Copyright A-B: Tynemouth Aquarium*): A) Indra (F) displaying vigilance standing (begging) on one of the tree trunks in the pool, with white feeding container in the background; B) Sitting side-by-side on one of the tree trunks in the pool, Gizmo (M) displaying vigilance sitting (looking around) and Indra (F) playing with an object (juggling a mussel shell from a recent feed).