

Table S1. Additional information on protected areas and other sites used by cranes, as named in Figure 1.

Site name	Geographic region	Country	Season used	Habitat characteristics*
Ang Trapeang Thmor	Tonle Sap floodplain	Cambodia	Non-breeding	Shallow water reservoir with wetland of predominantly wild Chinese water chestnut (<i>Eleocharis dulcis</i>), surrounded by ricefields.
Anlung Pring	Mekong delta	Cambodia	Non-breeding	Tidal wetland of predominantly wild Chinese water chestnut and other spikerushes, surrounded by rice- and shrimp farms.
Beng Per	Northern Plains	Cambodia	Breeding	Mix of open deciduous dipterocarp forest with scattered wetlands and denser forest types. Scattered ricefields in areas nearer to habitation.
Boeung Prek Lapouv	Mekong delta	Cambodia	Non-breeding	Freshwater wetland with patches of wild Chinese water chestnut and Water lily (<i>Nymphaea</i> sp.), surrounded by dry-season, irrigated ricefields.
Chep	Northern Plains	Cambodia	Breeding	Mix of open deciduous dipterocarp forest with scattered wetlands and denser forest types. Scattered ricefields in areas nearer to habitation.
Chong Doung - Baray	Tonle Sap floodplain	Cambodia	Non-breeding	Floodplain grasslands with scattered small wetlands and ponds, mixed with wet- and dry season cultivation areas.
Hon Chong	Mekong delta	Vietnam	Non-breeding	Wetland that was used in 1998-2001, but has since been lost to development.
Kien Luong	Mekong delta	Vietnam	Non-breeding	Area of wetlands mixed with ricefields.
Kulen Promtep	Northern Plains	Cambodia	Breeding	Mix of open deciduous dipterocarp forest with scattered wetlands and denser forest types. Scattered ricefields in areas nearer to habitation.
Lo Go Xa Mat	Eastern Plains	Vietnam	Breeding	Mix of open deciduous dipterocarp forest with scattered wetlands and areas of dense forest.
Lomphat	Eastern Plains	Cambodia	Breeding	Mix of open deciduous dipterocarp forest with scattered wetlands and denser forest types. Scattered ricefields in areas nearer to habitation.
Ou Ya Dav	Eastern Plains	Cambodia	Breeding	Mix of open deciduous dipterocarp forest with scattered wetlands and denser forest types.
Phnom Prich	Eastern Plains	Cambodia	Breeding	Mix of open deciduous dipterocarp forest with scattered wetlands and denser forest types.
Phnom Teuk	Mekong delta	Cambodia	Non-breeding	Non-tidal wetland of predominantly wild Chinese water chestnut and other spikerushes, surrounded by ricefields.
Phu My	Mekong delta	Vietnam	Non-breeding	Non-tidal wetland with Grey sedge (<i>Lepironia articulata</i>), wild Chinese water chestnut and other spikerushes, surrounded by rice- and shrimp farms.
Preah Net Preah	Tonle Sap floodplain	Cambodia	Non-breeding	Floodplain grasslands with scattered small wetlands and ponds, mixed with wet- and dry season cultivation areas.
Seima	Eastern Plains	Cambodia	Breeding	Open deciduous dipterocarp forest with scattered wetlands in the west, but mostly dense forest habitats on hilly terrain.
Srepok	Eastern Plains	Cambodia	Breeding	Mix of open deciduous dipterocarp forest with scattered wetlands and denser forest types.

Stoung - Chikraeng	Tonle Sap floodplain	Cambodia	Non-breeding	Floodplain grasslands with scattered small wetlands and ponds, mixed with wet- and dry season cultivation areas.
Stung Sen – Santuk	Tonle Sap floodplain	Cambodia	Non-breeding	Floodplain grasslands with scattered small wetlands and ponds, mixed with wet- and dry season cultivation areas.
Tram Chim	Mekong delta	Vietnam	Non-breeding	Largely embanked freshwater wetland with scattered wild Chinese water chestnut and Water lily, surrounded by ricefields.

Table S2. Overview of individual cranes captured, fitted with transmitters and number of data points received (change in background colour indicates a different family group)

Band ID	Tag ID	Age/Gender	Capture Location	Release Date	PTT End Date	# PTT Locations*			# GPS Locations	Total Locations	
						3	2	1			
150-0361	5444	Adult Female	Tram Chim	11/03/1998	10/03/1999	5	19	64		88	
150-0362	5420	Adult Female	Tram Chim	11/03/1998	01/04/1999	1	4	2		7	
150-0363	5418	Adult Male	Tram Chim	11/03/1998	03/04/1999	3	18	46		67	
150-0364	5437	Adult Male	Tram Chim	14/03/1998	21/03/1999	4	14	42		60	
150-0365	n.a.	Adult Female	Tram Chim	14/03/1998	no transmitter						
150-0366	n.a.	Juvenile	Tram Chim	14/03/1998	no transmitter						
150-0367	n.a.	Juvenile	Tram Chim	14/03/1998	no transmitter						
150-1126	19298	Juvenile	Tram Chim	05/03/2001	20/02/2002	8	12	70		90	
150-1127	19275	Juvenile	Tram Chim	05/03/2001	21/01/2002	3	19	51		73	
150-1128	19303	Adult Female	Tram Chim	05/03/2001	04/04/2003	8	28	108		144	
150-1129	n.a.	Adult Male	Tram Chim	05/03/2001	no transmitter						
ICF001	4234	Juvenile	Stoung	29/01/2015	05/08/2015				486	486	
ICF002	n.a.	Juvenile	Stoung	29/01/2015	no transmitter						
ICF003	4233	Adult Male	Stoung	29/01/2015	04/10/2016				675	675	
ICF004	n.a.	Adult Female	Stoung	29/01/2015	no transmitter						
ICF006**	4235	Juvenile	Anlung Pring	04/02/2015	18/05/2016				394 (2276)	394	
ICF005	n.a.	Adult Female	Anlung Pring	04/02/2015	no transmitter						
ICF007	4236	Adult Male	Anlung Pring	04/02/2015	26/05/2015				463	463	
ICF008	4237	Juvenile	Stoung	09/02/2015	07/06/2017				4998	4998	
ICF009	n.a.	Juvenile	Stoung	09/02/2015	no transmitter						
ICF010	n.a.	Adult Female	Stoung	09/02/2015	no transmitter						
ICF011	4238	Adult Male	Stoung	09/02/2015	16/05/2016				208	208	
ICF012	4239	Adult Male	Ang Trapeang Thmor	10/02/2015	22/07/2016				6770	6770	
ICF013	4240	Juvenile	Ang Trapeang Thmor	10/02/2015	18/04/2017				11414	11414	

Band ID	Tag ID	Age/Gender	Capture Location	Release Date	PTT End Date	# PTT Locations*			# GPS Locations	Total Locations
						3	2	1		
ICF014	n.a.	Adult Female	Anlung Pring	18/02/2015	no transmitter					
ICF015	4241	Adult Male	Anlung Pring	18/02/2015	no data					
ICF016	4242	Juvenile	Anlung Pring	18/02/2015	25/06/2015				22464	22464
None***	4234	Juvenile	Tonle Sap region	29/08/2015	26/11/2016				(205)	(205)
						Total Locations			47478	48401

*PTT accuracy categories: 1= 500-1500m, 2= 250-500m, 3= <250m. **This juvenile was captured by local people on 26 June 2015, then released in Tonle Sap region on 29 August 2015, together with *** a wild juvenile from an unknown capture site. All numbers in brackets are post release and not used in analysis, except for movements depicted in maps.

Table S3. Home ranges (50% and 95% MCP) per individual/season/year

Individual	Life Stage	Sex	Season	Yr	Yr Track	Start Date	End Date	Days	Detections	Days/Detect	50% MCP (km ²)	95% MCP (km ²)	General Location
19303	Adult	Female	Dry	01	1 st	09/03/01	14/04/01	35	21	1.67	15.74	93.35	Mekong Delta
5418	Adult	Male	Dry	98	1 st	13/03/98	19/04/98	36	9	4.00	1.32	22.65	Mekong Delta
5437	Adult	Male	Dry	98	1 st	16/03/98	19/04/98	33	7	4.71	1.96	4.38	Mekong Delta
5444	Adult	Female	Dry	98	1 st	13/03/98	12/04/98	29	7	4.14	2.07	5.83	Mekong Delta
4233	Adult	Male	Dry	15	1 st	29/01/15	16/07/15	167	472	0.35	0.34	0.57	Tonle Sap
4236	Adult	Male	Dry	15	1 st	04/02/15	22/02/15	18	457	0.04	0.08	0.74	Mekong Delta
4238	Adult	Male	Dry	15	1 st	09/02/15	18/06/15	129	65	1.98	1.85	33.09	Tonle Sap
4239	Adult	Male	Dry	15	1 st	10/02/15	18/04/15	68	276	0.25	3.35	181.86	Tonle Sap
19303	Adult	Female	Dry	02	2 nd	11/12/01	18/03/02	97	9	10.78	1.81	116.70	Mekong Delta
5444	Adult	Female	Dry	99	2 nd	05/12/98	20/02/99	75	21	3.57	38.15	5953.35	Tonle Sap
4233	Adult	Male	Dry	16	2 nd	05/11/15	10/05/16	185	166	1.11	0.75	6.13	Tonle Sap
4239	Adult	Male	Dry	16	2 nd	29/10/15	24/05/16	205	395	0.52	131.48	1166.20	Tonle Sap
19275	Juvenile	Unknown	Dry	01	1 st	09/03/01	15/04/01	36	20	1.80	4.86	187.11	Mekong Delta
19298	Juvenile	Unknown	Dry	01	1 st	09/03/01	14/04/01	35	22	1.59	2.93	33.36	Mekong Delta
4234	Juvenile	Unknown	Dry	15	1 st	29/01/15	19/07/15	170	553	0.31	0.19	1.65	Tonle Sap
4235	Juvenile	Unknown	Dry	15	1 st	04/02/15	12/04/15	68	325	0.21	0.08	0.32	Mekong Delta
4235R	Juvenile	Unknown	Dry	15	1 st	20/10/15	18/05/16	208	749	0.28	2.01	328.58	Tonle Sap
4237	Juvenile	Unknown	Dry	15	1 st	09/02/15	10/07/15	151	882	0.17	14.32	137.79	Tonle Sap
4240	Juvenile	Unknown	Dry	15	1 st	10/02/15	29/05/15	109	363	0.30	9.39	208.76	Tonle Sap
4242	Juvenile	Unknown	Dry	15	1 st	18/02/15	05/05/15	77	12098	0.01	9.01	42.51	Mekong Delta
19298	Sub-adult	Unknown	Dry	02	2 nd	18/12/01	02/02/02	44	11	4.00	1.01	268.15	Mekong Delta
4237	Sub-adult	Unknown	Dry	16	2 nd	28/10/15	27/05/16	209	233	0.90	12.15	69.32	Tonle Sap
4240	Sub-adult	Unknown	Dry	16	2 nd	23/10/15	09/06/16	226	841	0.27	3.62	494.71	Tonle Sap
4243	Sub-adult	Unknown	Dry	16	2 nd	20/10/15	10/06/16	230	42	5.48	300.36	7125.99	Tonle Sap
4237	Sub-adult	Unknown	Dry	17	3 rd	28/12/16	30/03/17	92	93	0.99	110.26	695.56	Tonle Sap
4240	Sub-adult	Unknown	Dry	17	3 rd	20/11/16	18/04/17	148	266	0.56	157.98	3120.14	Tonle Sap
19303	Adult	Female	Wet	01	1 st	18/04/01	28/11/01	220	58	3.79	28.47	1346.01	Eastern Plains
5418	Adult	Male	Wet	98	1 st	11/05/98	20/07/98	69	42	1.64	3.71	18.67	Eastern Plains

Individual	Life Stage	Sex	Season	Yr	Yr Track	Start Date	End Date	Days	Detections	Days/Detec	50% MCP (km ²)	95% MCP (km ²)	General Location
5437	Adult	Male	Wet	98	1 st	01/05/98	11/08/98	100	37	2.70	6.38	35.77	Eastern Plains
5444	Adult	Female	Wet	98	1 st	25/04/98	02/12/98	217	60	3.62	5.03	26.21	Northern Plains
4233	Adult	Male	Wet	15	1 st	20/07/15	04/11/15	104	27	3.85	0.08	5.13	Northern Plains
4238	Adult	Male	Wet	15	1 st	19/06/15	03/11/15	134	141	0.95	0.71	9.19	Northern Plains
4239	Adult	Male	Wet	15	1 st	15/05/15	28/10/15	163	6003	0.03	1.81	9.42	Northern Plains
4239	Adult	Male	Wet	16	2 nd	28/05/16	22/07/16	54	7	7.71	1.06	2.16	Northern Plains
19275	Juvenile	Unknown	Wet	01	1 st	18/04/01	10/08/01	112	48	2.33	73.94	1317.38	Eastern Plains
19298	Juvenile	Unknown	Wet	01	1 st	18/04/01	19/11/01	211	56	3.77	22.64	65.23	Eastern Plains
4234	Juvenile	Unknown	Wet	15	1 st	20/07/15	04/08/15	14	32	0.44	3.17	975.22	Tonle Sap
4235	Juvenile	Unknown	Wet	15	1 st	29/04/15	25/06/15	56	58	0.97	8536.26	15322.09	Mekong Delta
4237	Juvenile	Unknown	Wet	15	1 st	11/07/15	27/10/15	106	3182	0.03	303.90	4859.41	Northern Plains
4240	Juvenile	Unknown	Wet	15	1 st	30/05/15	22/10/15	142	8831	0.02	68.58	12456.04	Northern Plains
4242	Juvenile	Unknown	Wet	15	1 st	05/05/15	25/06/15	50	10215	0.00	2183.98	15785.14	Mekong Delta
4237	Sub-adult	Unknown	Wet	16	2 nd	28/05/16	27/12/16	209	589	0.35	18.11	2514.60	Northern Plains
4240	Sub-adult	Unknown	Wet	16	2 nd	10/06/16	19/11/16	159	985	0.16	258.71	13722.75	Northern Plains
4243	Sub-adult	Unknown	Wet	16	2 nd	14/07/16	04/10/16	80	30	2.67	5.90	132.82	Northern Plains

Table S4. Dry season percentage overlap of 50% MCP home ranges with protected areas

Region	Individual	Year	Period	Core Home Range (km ²)	Area in PA (km ²)	% Core HR in PA
Adult - Non-breeding/Dry season						
Mekong	5418	1998	Mar-Apr	1.32	1.32	100.0%
Mekong	5437	1998	Mar-Apr	1.96	1.96	100.0%
Mekong	5444	1998	Mar-Apr	2.07	2.07	100.0%
Mekong	5444	1999	Dec-Feb	38.15	0.00	0.0%
Mekong	19303	2001	Mar-Apr	15.74	2.43	15.5%
Mekong	19303	2002	Dec-Mar	1.81	1.81	100.0%
Mekong	4236	2015	Feb	0.08	0.08	99.3%
Mekong Average				8.73	1.38	73.5%
Tonle Sap	4233	2015 & 2016	Feb-Jul / Nov-May	0.54	0.09	17.0%
Tonle Sap	4238	2015	Feb-Jun	1.85	1.51	81.4%
Tonle Sap	4239	2015	Feb-Apr	3.35	3.32	99.1%
Tonle Sap	4239	2016	Nov-May	131.48	0.00	0.0%
Tonle Sap Average				34.31	1.23	49.4%
Adult Total Average				18.03	1.33	64.7%
Sub-Adult (2nd-3rd year) - Dry season						
Mekong	19298	2002	Dec-Jan	1.01	1.01	100.0%
Tonle Sap	4237	2016	Nov-May	12.15	11.45	94.2%
Tonle Sap	4237	2017	Dec-Mar	110.26	9.31	8.4%
Tonle Sap	4240	2016	Nov-May	3.62	0.00	0.0%
Tonle Sap	4240	2017	Nov-Apr	157.98	0.00	0.0%
Tonle Sap Average				71.00	5.19	25.7%
Juvenile (1st year) - Dry season						
Mekong	19275 & 19298	2001	Mar-Apr	3.89	0.53	13.6%
Mekong	4235	2015	Feb-Apr	0.08	0.08	100.0%
Mekong	4242	2015	Feb-Apr	9.01	9.01	100.0%
Mekong Average				4.33	3.20	71.2%
Tonle Sap	4234	2015	Jan-Jul	0.19	0.00	0.0%
Tonle Sap	4237	2015	Feb-Jul	14.32	12.63	88.2%
Tonle Sap	4240	2015	Feb-May	9.39	6.75	71.9%
Tonle Sap Average				7.97	6.46	53.4%
Juvenile Total Average				6.15	4.60	63.6%

Table S5. Wet season percentage overlap of 50% MCP home ranges with protected areas (PA)

Region	Individual	Year	Period	Core Home Range (km ²)	Area in PA (km ²)	% Core HR in PA
Adult - Breeding/Wet season						
Mekong	5418	1998	May-Jul	3.71	3.71	100.0%
Mekong	5437	1998	May-Aug	6.38	0.00	0.0%
Mekong	5444	1998	May-Nov	5.03	0.00	0.0%
Mekong	19303	2001	May-Nov	28.47	1.79	6.3%
Mekong Average				10.90	1.38	26.6%
Tonle Sap	4233	2015	Aug-Oct	0.08	0.00	0.0%
Tonle Sap	4238	2015	Jun-Oct	0.71	0.71	100.0%
Tonle Sap	4239	2015/ 2016	May-Oct/ Jun-Jul	1.43	1.43	100.0%
Tonle Sap Average				0.74	0.72	66.7%
Adult Total Average				6.55	1.09	43.8%
Sub-Adult (2nd year) - Wet season						
Tonle Sap	4237	2016	May-Dec	18.11	18.11	100.0%
Tonle Sap	4240	2016	Jun-Nov	258.71	217.57	84.1%
Tonle Sap	4243	2016	Jul-Sep	5.90	0.00	0.0%
Sub-Adult Average				94.24	78.56	61.4%
Juvenile (1st year) - Wet season						
Mekong	19275 & 19298	2001	May-Aug/ May-Nov	48.29	0.00	0.0%
Mekong	4235	2015	May-Jun	8536.26	56.31	0.7%
Mekong	4242	2015	May-Jun	2183.98	268.93	12.3%
Mekong Average				3589.51	108.41	4.3%
Tonle Sap	4234	2015	Jul-Aug	3.17	0.59	18.7%
Tonle Sap	4237	2015	Jul-Oct	303.90	64.21	21.1%
Tonle Sap	4240	2015	Jun-Oct	68.58	0.00	0.0%
Tonle Sap Average				125.22	21.60	13.3%
Juvenile Total Average				1857.36	65.01	8.8%

Table S6. Resighting data for all ringed cranes 1998-2017

Family Unit - Age Class	Sex	Capture Location	Capture Date	Tagged (T) /Banded (R)	Year of Resightings																	Total Years	Fate/ Comments			
					98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14			15	16	17
1 - Adult	Female	Tram Chim	11/03/1998	T+R	*	*																			2	Last seen 27/4/99, Tram Chim
2 - Adult	Female	Tram Chim	11/03/1998	T+R	*	*		*																	4	Last seen 3/9/01, Lomphat
2 - Adult	Male	Tram Chim	11/03/1998	T+R	*	*						*			*										12	Last seen 14/2/09, Boeung Prek Lapouv
3 - Adult	Male	Tram Chim	14/03/1998	T+R	*	*		*																	4	Last seen March 2001, Kien Luong
3 - Adult	Female	Tram Chim	14/03/1998	R	*			*																	4	Last seen March 2001, Kien Luong
3 - Juvenile	Unknown	Tram Chim	14/03/1998	R	*																				1	Never resighted
3 - Juvenile	Unknown	Tram Chim	14/03/1998	R	*			*															*		12	Last seen 9/3/09, Tram Chim
4 - Juvenile	Unknown	Tram Chim	05/03/2001	T+R				*	*													*	*		15	Last seen 24/1/15, Anlung Pring
4 - Juvenile	Unknown	Tram Chim	05/03/2001	T+R				*																	1	Last record 10/8/01, Lomphat
4 - Adult	Female	Tram Chim	05/03/2001	T+R				*	*													*	*		9	Last seen 30/3/09, Ha Tien
4 - Adult	Male	Tram Chim	05/03/2001	R				*	*						*										8	Last seen 29/3/08, Tram Chim
5 - Juvenile	Unknown	Stoung	28/01/2015	T+R																		*			1	Died 12/8/15, wildlife trade, Stung Sen
5 - Juvenile	Unknown	Stoung	28/01/2015	R																		*	*	*	3	Last seen 30/3/17, Ang Trapeang Thmor
5 - Adult	Male	Stoung	28/01/2015	T+R																		*	*	*	3	Last seen 28/3/17, Stoung
5 - Adult	Female	Stoung	28/01/2015	R																		*	*	*	3	Last seen 28/3/17, Stoung
6 - Juvenile	Unknown	Anlung Pring	03/02/2015	T+R																		*	*		2	Captured 26/6/15, released Varin 29/8/15, tag in Ang Trapeang Thmor 26/5/16
6 - Adult	Female	Anlung Pring	03/02/2015	R																		*	*	*	3	Last seen 17/3/17 in Anlung Pring (with mate)

Family Unit - Age Class	Sex	Capture Location	Capture Date	Tagged (T) /Banded (R)	Year of Resightings																	Total Years	Fate/ Comments		
					9 8	9 9	0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	1 0	1 1	1 2	1 3	1 4			1 5	1 6
6 - Adult	Male	Anlung Pring	03/02/2015	T+R																	*	*	*	3	Last seen 17/3/17 in Anlung Pring (with mate)
7 - Juvenile	Unknown	Stoung	08/02/2015	T+R																	*	*	*	3	Last seen 30/3/17 in Ang Trapeang Thmor, possibly with a partner
7 - Juvenile	Unknown	Stoung	08/02/2015	R																	*	*	*	3	Last seen 30/3/17 in Ang Trapeang Thmor
7 - Adult	Female	Stoung	08/02/2015	R																	*	*		2	Last seen in Stoung, with partner, non-breeding season 2016
7 - Adult	Male	Stoung	08/02/2015	T+R																	*	*	*	3	Last seen 28/3/17 in Stoung, with new partner
8 - Adult	Male	Ang Trapeang Thmor	10/02/2015	T+R																	*	*	*	3	Last seen 30/3/17 in Ang Trapeang Thmor
8 - Juvenile	Unknown	Ang Trapeang Thmor	10/02/2015	T+R																	*	*	*	3	Last seen 30/3/17 in Ang Trapeang Thmor
9 - Adult	Female	Anlung Pring	17/02/2015	R																	*	*		2	Last seen in Anlung Pring in 2016, without partner
9 - Adult	Male	Anlung Pring	17/02/2015	T+R																	*			1	Last seen in Phu My 19/5/15
9 - Juvenile	Unknown	Anlung Pring	17/02/2015	T+R																	*			1	Last record 1/6/15 in Seima
10 - Juvenile	Unknown	Po Ta Oun, Kampong Thom	12/08/2015	T+R																	*	*	*	3	From wildlife trader. Released Varin 29/8/15. Last seen 30/3/17, Ang Trapeang Thmor, possibly with a partner.

Yellow blocks indicate known survival period. Red blocks indicate there was a known capture incident (mortality). Juvenile family 6 was released after capture, but capture would have been a mortality incident if not tagged. Juvenile 10 not captured by research team originally, but confiscated from trader and released.