Are conflicts between conservation and poverty inevitable? Evidence from two global-scale analyses
Alex de Sherbinin (CIESIN), with Marc Levy (CIESIN), Kent Redford and Eric Sanderson (WCS)
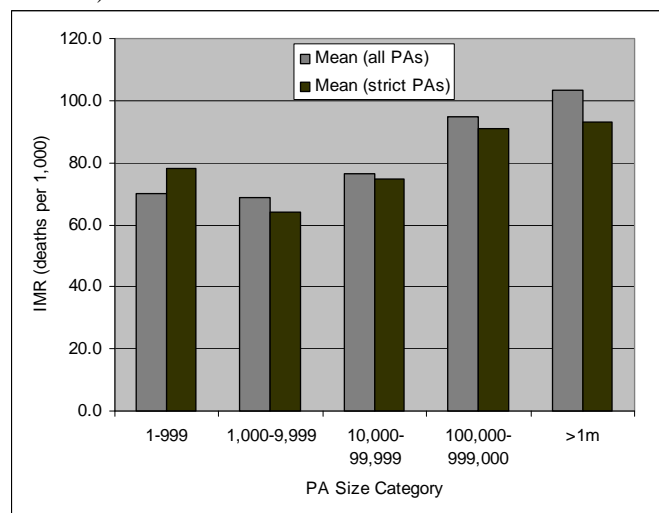
Part I – Poverty & PAs *From the paper***:** de Sherbinin, A. (2008). "Is poverty more acute near parks? An assessment of infant mortality rates around protected areas in developing countries" *Oryx*.42(1): 26-35.   **Table 1** Percentage difference in infant mortality rates near protected areas compared to national-level infant mortality rates (UNICEF 2004).

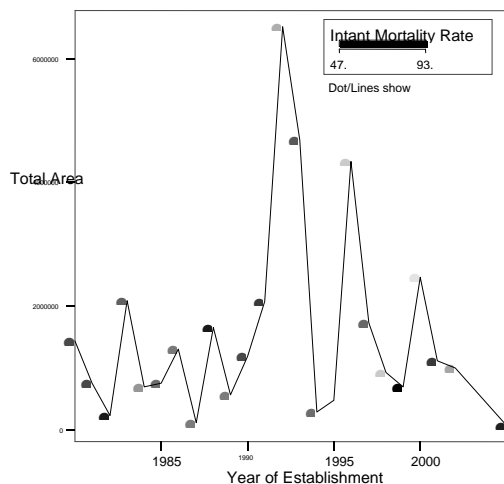| Country	Mean PA IMR (all PAs)	Mean PA IMR (strictest PAs)	National 2000 IMR from UNICEF	Difference between All PA and National IMR
Sudan	90.7	81.9	65	25.7
Botswana	93.5	102.1	74	19.5
Mauritania	134.4	134.4	120	14.4
Iran	47.2	46.0	36	11.2
Senegal	90.3	87.5	80	10.3
Uganda	95.2	95.8	85	10.2
Ecuador	36.8	37.4	27	9.8
Benin	101.9	99.7	95	6.9
Guinea	118.2	118.2	112	6.2
China	37.9	--	32	5.9
Viet Nam	28.8	33.3	23	5.8
Cambodia	100.3	98.5	95	5.3
Ethiopia	120.0	121.1	116	4.0
Togo	84.0	86.1	80	4.0
Peru	35.8	36.6	32	3.8
Ghana	65.6	70.6	62	3.6
Madagascar	89.3	86.0	86	3.3
Gambia	95.3	99.8	92	3.3
Mexico	28.0	27.5	25	3.0
Eritrea	55.8	--	53	2.8
Nicaragua	36.7	40.1	34	2.7
Dominican Rep.	37.6	37.5	35	2.6
Paraguay	28.1	26.6	26	2.1
India	70.0	70.6	68	2.0
Gabon	62.0	--	60	2.0
Nepal	70.9	71.5	69	1.9
Colombia	21.7	22.1	20	1.7
Armenia	33.5	32.1	32	1.5
Argentina	18.3	18.6	17	1.3
Mali	125.2	122.6	124	1.2
Chile	12.1	12.1	11	1.1
Uruguay	16.1	18.6	15	1.1
Philippines	31.1	31.6	30	1.1
Venezuela	20.8	20.6	20	0.8
Costa Rica	10.8	10.9	10	0.8
Indonesia	35.7	35.0	35	0.7
Thailand	25.4	26.2	25	0.4
Cuba	6.8	7.0	7	-0.2
Uzbekistan	50.7	51.8	51	-0.3
Algeria	39.6	38.8	40	-0.4
Haiti	80.5	83.0	81	-0.5
Lebanon	27.5	20.5	28	-0.5
Brazil	34.4	32.3	35	-0.6
Morocco	40.1	41.2	41	-0.9
Burkina Faso	106.1	107.2	107	-0.9
Bolivia	58.1	56.2	59	-0.9
El Salvador	32.8	36.2	34	-1.2
Angola	152.5	138.6	154	-1.5
Zimbabwe	71.2	62.6	73	-1.8
Turkey	36.0	36.6	38	-2.0
Guatemala	37.0	35.3	39	-2.0
Cameroon	92.9	106.5	95	-2.1
Bangladesh	51.8	--	54	-2.2
Nigeria	98.4	102.7	102	-3.6
Sri Lanka	13.3	13.6	17	-3.7
Egypt	34.1	34.7	38	-3.9
Zambia	97.2	98.5	102	-4.8
Mongolia	54.6	54.6	60	-5.4
Rwanda	112.2	122.9	118	-5.8
Kenya	70.3	68.8	77	-6.7
Turkmenistan	68.3	65.2	75	-6.7
Central Af. Rep.	107.1	102.1	115	-7.9
Namibia	47.9	46.9	56	-8.1
Tanzania	95.9	94.9	104	-8.1
South Africa	41.7	35.1	50	-8.3
Kazakhstan	50.4	54.4	60	-9.6
Pakistan	75.1	74.0	85	-9.9
Niger	148.7	141.9	159	-10.3
Mozambique	110.4	105.8	130	-19.6

Table 2. Average infant mortality rates for all protected areas, the strictest protected areas, and at the national level (from UNICEF)

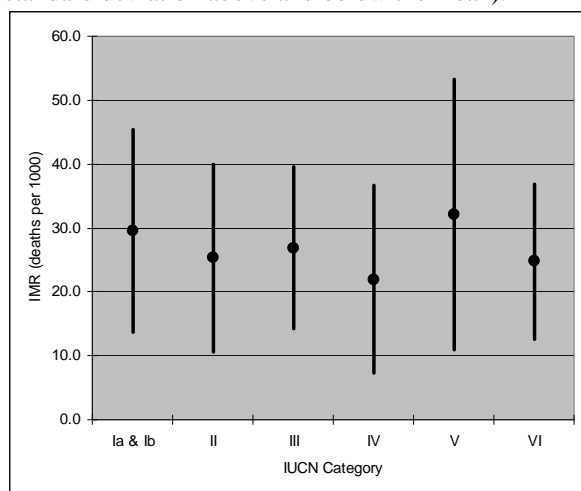|		Mean (all)	Mean (strictest)	National
Income Low income	Mean	89.6	91.6	88.8
	N (countries)	32	30	32
	SD	26.6	25.2	28.1
Lower middle income	Mean	43.0	43.1	42.5
	N (countries)	24	23	24
	SD	29.0	28.3	30.0
Upper middle income	Mean	34.7	32.4	34.1
	N (countries)	13	12	13
	SD	23.3	25.1	21.0

Fig. 1 infant mortality rates for Low Income Country protected areas by Size Category (* No marine protected areas included).
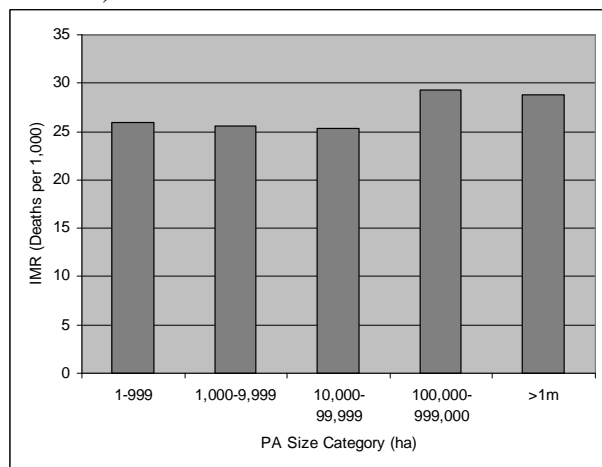
Fig. 2 Total Area Established Under Strict protected areas by Year (1980-2003)

Fig. 4 Infant mortality rates in Latin American protected areas by Category (* points represent the mean; bars represent 1 standard deviation above and below the mean).

Fig. 5 infant mortality rates for Latin American protected areas by Size Category (* No marine protected areas included; only countries with >4 sub-national infant mortality rate units included.).
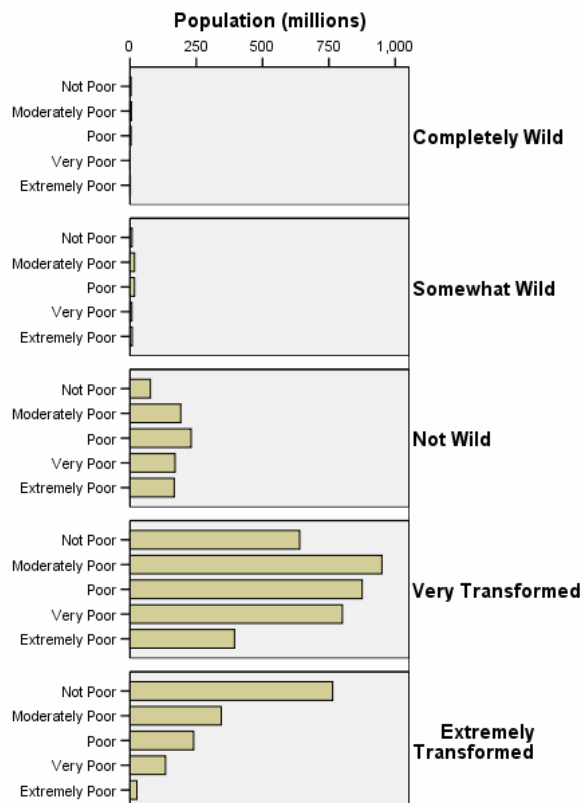

Part II – Poverty & Wild Areas

From the paper: Redford, K., Levy, M., Sanderson, E., and de Sherbinin, A. (in press). "What is the role for conservation organizations in poverty alleviation in the world's wild places?" *Oryx*.42.

Table 1 Categories used in the analysis.

Poverty Classes	
Class	IMR Range
Extremely Poor	>=100
Very Poor	65-100
Poor	32-65
Moderately Poor	15-32
Not Poor	<=15
Human Impact Classes	
Class	HF Range
Extremely Transformed	>=49
Very Transformed	29-49
Somewhat Transformed	14-29
Somewhat Wild	2-14
Extremely Wild	<=2

Fig. 2 Population (millions) by poverty and wilderness categories.

Table 4 Distribution of the most poor by most wild Human Footprint categories and biome (millions of people).

Biome	Somewhat Wild	Extremely Wild	Total
1 Tropical & Subtropical Moist Broadleaf Forests	2.9	0.3	3.3
2 Tropical & Subtropical Dry Broadleaf Forests	0.2	0.0	0.3
3 Tropical & Subtropical Coniferous Forests	0.0	0.0	0.0
4 Temperate Broadleaf & Mixed Forests	0.1	0.0	0.1
5 Temperate Conifer Forests	0.2	0.0	0.2
6 Boreal Forests/Taiga	0.0	0.0	0.0
7 Tropical & Subtropical Grasslands, Savannas & Shrublands	6.8	0.6	7.3
8 Shrublands	0.1	0.0	0.1
9 Flooded Grasslands & Savannas	0.2	0.0	0.2
10 Montane Grasslands & Shrublands	1.0	0.1	1.2
11 Tundra	0.0	0.0	0.0
12 Mediterranean Forests, Woodlands & Scrub	0.0	0.0	0.0
13 Deserts & Xeric Shrublands	2.6	0.7	3.3
14 Mangroves	0.2	0.0	0.2
Total	14.6	1.8	16.3