

Table 1: Indicator/Alternative Matrix

	Current Situation	No Action	The Proposed Action	Sanctuary	Wildlife Observation	Ecosystem Management	Hunting, Trapping & Fishing	Maximum Multiple Use
1 <u>Develop Individual Refuge Plans</u>								
Refuges in the System	485	555	555	425	545	575	575	535
Refuges with comprehensive management plans	240	394	454	250	300	300	400	250
2 <u>Develop Refuge System Infrastructure</u>								
Miles of roads and trails	6,500	7,000	7,000	2,000	7,000	8,000	7,000	8,000
Miles of dikes	2,700	3,000	3,000	1,000	3,000	3,500	3,000	1,500
Number of headquarter sites on Refuges	185	200	200	75	225	200	200	200
Acres of headquarters sites	925	1,000	1,000	375	1,200	1,000	1,000	1,000
3 <u>Collect & Manage Data</u>								
Number of National databases	10	10	20	10	20	20	20	10
4 <u>Regulate & Manage Refuge Uses</u>								
Problem uses under Service jurisdiction not resolved	141	110	50	15	75	75	75	130
Problem uses not under Service jurisdiction not resolved	179	150	75	50	125	125	125	170
Problem uses under Service jurisdiction resolved	192	223	283	318	258	258	258	203
Problems not under Service jurisdiction resolved	243	272	347	372	297	297	297	252
5 <u>Acquire Land</u>								
Refuges established annually	7	7	7	4	6	9	9	5
Acres acquired annually	230,000	230,000	210,000	130,000	190,000	270,000	270,000	170,000
Dollars spent on acquisition annually	\$100,000,000	\$150,000,000	\$187,500,000	\$225,000,000	\$225,000,000	\$187,500,000	\$187,500,000	\$187,500,000

B-002867

Table 1: Indicator/Alternative Matrix (Continued)

	Current Situation	No Action	The Proposed Action	Sanctuary	Wildlife Observation	Ecosystem Management	Hunting, Trapping & Fishing	Maximum Multiple Use
6								
<u>Designate & Manage Special Management Areas</u>								
Refuges with Special Management Areas	175	197	220	175	220	300	200	180
Refuges with Designated Wilderness	63	87	100	63	100	140	90	80
Number of Wilderness Areas	75	115	135	75	135	200	120	100
Acres of Designated Wilderness	21,000,000	32,000,000	50,000,000	21,000,000	53,000,000	76,000,000	47,000,000	28,000,000
Miles of Wild & Scenic Rivers	1,390	1,390	2,400	1,390	2,400	2,400	2,600	1,600
Refuges with Research Natural Areas	99	110	200	90	200	250	110	90
Number of Research Natural Areas	208	240	400	208	400	500	240	208
Acres of Research Natural Areas	1,960,000	2,000,000	2,100,000	1,960,000	2,100,000	2,200,000	2,000,000	1,960,000
Refuges with RAMSAR wetlands	16	16	20	16	20	20	18	16
7								
<u>Conserve & Restore Biodiversity</u>								
Refuges with specific purpose to conserve biodiversity	27	35	50	40	50	90	40	30
Refuges using community restoration techniques	375	380	425	0	425	500	380	200
Refuges with biological community inventories	138	138	250	0	300	500	150	75
Refuges providing corridors between fragmented habitats	205	210	230	250	230	275	210	150
8								
<u>Protect Air Quality</u>								
Refuges with air quality monitoring stations	3	3	10	21	10	21	10	3
9								
<u>Investigate & Clean Up Refuge Contaminants</u>								
Refuges with documented and/or suspected contaminant problems	390	400	450	450	425	425	400	450
Refuge cleanup projects underway	33	40	50	75	50	50	40	75
Contaminant problems resolved	50	55	80	100	55	55	55	100
Refuges with baseline water quality data	129	140	200	140	140	140	140	140
Refuges with regular water quality sampling	85	90	200	100	140	200	140	100
Refuges with BEST program underway	0	5	25	25	15	15	10	25

B-002868

Table 1: Indicator/Alternative Matrix (Continued)

	Current Situation	No Action	The Proposed Action	Sanctuary	Wildlife Observation	Ecosystem Management	Hunting, Trapping & Fishing	Maximum Multiple Use
10	<u>Graze & Hay Refuge Lands</u>							
Refuges with haying programs	145	155	125	0	135	100	125	200
Refuges with economic use haying programs	94	100	75	0	85	50	75	150
Acres hayed for economic use	39,000	45,000	30,000	0	40,000	20,000	30,000	75,000
Acres hayed to manage wetlands	25,000	30,000	20,000	0	25,000	10,000	20,000	30,000
Acres hayed to manage grasslands	26,000	30,000	20,000	0	25,000	10,000	20,000	50,000
Refuges with grazing programs	183	190	140	8	175	100	140	250
Refuges with economic use grazing programs	134	140	100	5	120	75	100	225
Acres grazed for economic use	1,900,000	2,000,000	1,500,000	35,000	1,000,000	500,000	1,500,000	3,500,000
Acres grazed to manage grasslands	1,400,000	1,500,000	1,000,000	40,000	800,000	500,000	1,000,000	2,500,000
Acres grazed to manage wetlands	160,000	170,000	120,000	0	100,000	80,000	120,000	200,000
Acres grazed to manage desert	660,000	700,000	500,000	0	600,000	250,000	500,000	800,000
11	<u>Farm Refuge Lands</u>							
Refuges with farming programs	181	185	150	5	150	100	250	300
Refuge cropland acres	204,000	210,000	175,000	800	175,000	100,000	250,000	400,000
Acres farmed by conventional techniques	145,000	150,000	125,000	0	125,000	75,000	175,000	300,000
Refuge cooperative farming programs	129	135	100	3	100	65	150	250
Acres farmed by cooperative permittees	153,000	155,000	120,000	400	120,000	80,000	170,000	380,000
12	<u>Manage Forests on Refuge Lands</u>							
Refuges with timber harvest program	66	70	70	40	70	50	75	100
Refuges with economic use timber harvest program	30	40	40	5	40	45	45	75
Acres of forest with economic use timber harvest	18,000	20,000	20,000	1,000	20,000	15,000	25,000	50,000
13	<u>Explore/Extract Oil, Gas & Minerals on Refuge Lands</u>							
Refuges with oil and gas exploration	24	24	24	7	24	24	15	40
Refuges with oil and gas production	42	42	42	7	42	42	15	60
Oil and gas leases (originally acquired from private entities)	11	11	11	11	11	11	11	20
Total oil and gas leases	66	66	66	11	66	66	20	80
Active mining permits	2	2	2	2	2	2	2	10
14	<u>Manage Fire</u>							
Refuges with prescribed fire program	206	225	250	45	250	350	230	140
Acres of prescribed burned	153,000	174,000	205,000	15,000	185,000	240,000	185,000	100,000
Number of presuppression/hazard reduction burns	178	200	225	0	225	225	225	190
Acreage of presuppression/hazard reduction burns	56,000	63,000	65,000	0	65,000	50,000	65,000	20,000
Number of habitat improvements burns	428	435	450	90	450	550	450	350
Acreage of habitat improvements burns	97,000	111,000	140,000	15,000	120,000	190,000	120,000	80,000

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15								
<u>Manage or Restore Wetlands</u>								
Refuges with wetlands	410	462	462	450	460	470	470	440
Acres of wetland in the System	31,000,000	32,000,000	32,000,000	31,500,000	31,500,000	32,500,000	32,500,000	31,500,000
Number of refuges with manipulated wetlands	233	270	270	60	260	270	300	280
Acres of wetland manipulated	1,600,000	2,000,000	2,200,000	100,000	1,900,000	2,200,000	2,600,000	2,400,000
Number of refuges with moist soil units	173	200	220	40	220	220	300	240
Acres of moist soil units	332,000	360,000	400,000	50,000	400,000	400,000	800,000	500,000
16								
<u>Acquire & Protect Water Rights (Western Refuge Data Only)</u>								
Refuges with quantified water rights	57	100	200	250	100	250	150	100
Refuges with documented water needs	60	80	120	140	80	140	100	80
Refuges with water use models	6	9	20	30	15	30	20	10
Refuges with water engineering studies	54	75	120	50	50	30	100	75
Refuges with adequate water supply for present operations	96	120	150	175	150	150	150	120
Refuges with water supply sufficient for optimum development	23	40	60	30	60	50	80	50
17								
<u>Manage Fishery Resources</u>								
Refuges with fishery resources	281	310	315	300	285	300	325	320
Refuges with fishery management plans	92	110	300	16	120	250	300	250
Refuges controlling exotic fish	56	60	100	25	100	150	100	100
Refuges stocking native sport fish	82	85	85	10	40	0	150	150
18								
<u>Manage Game Species</u>								
Refuges with management programs to benefit waterfowl	346	360	370	0	360	350	400	375
Refuges with management programs to benefit other migratory game-birds	23	27	30	0	30	30	50	40
Refuges with management programs to benefit upland game	63	68	80	0	80	70	80	90
Refuges with management programs to benefit big game	76	80	80	0	80	70	100	90
19								
<u>Manage Nongame Species</u>								
Refuges with habitat management programs to benefit nongame birds	56	72	150	0	200	200	50	100
Refuges with management programs specifically for nongame mammals	52	72	100	0	150	150	30	70
Refuges participating in Christmas Bird Counts	206	220	250	0	270	270	180	220
Refuges gathering breeding bird census data	87	90	150	0	200	200	80	90
Refuges with inventory of native plant species	135	140	200	0	200	350	80	90

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	Current Situation	No Action	The Proposed Action	Sanctuary	Wildlife Observation	Ecosystem Management	Hunting, Trapping & Fishing	Maximum Multiple Use
20 <u>Manage and Recover T&E Species</u>								
Refuges acquired principally for T&E	52	65	75	60	75	75	55	55
Refuges with habitat management programs specifically for T&E species	356	360	380	300	380	380	360	360
Refuges involved in propagation and release of T&E species	17	20	30	10	25	25	12	10
Refuges conducting T&E species surveys	299	334	380	50	360	360	200	100
21 <u>Control Predation</u>								
Refuges with predator control programs	118	133	133	50	80	80	200	150
Refuges using lethal control	97	120	120	0	60	60	180	140
Refuges using nonlethal control	73	80	90	50	60	60	100	100
Refuges with predator control for waterfowl	79	80	90	0	50	50	160	90
Refuges with predator control for T&E species	49	50	60	50	60	60	60	60
Predators harvested	11,300	12,000	12,500	0	5,000	5,000	20,000	13,000
22 <u>Manage Pests</u>								
Refuges treating with pesticides	173	126	75	0	75	40	125	200
Refuges with Integrated Pest Management programs	56	100	200	0	200	300	100	100
Acres treated with pesticides	274,000	200,000	100,000	0	100,000	50,000	200,000	275,000
23 <u>Provide Hunting Opportunities</u>								
Refuges open to hunting	268	300	307	16	40	200	400	350
Acres open to hunting	86,200,000	87,400,000	87,700,000	76,400,000	79,400,000	83,000,000	90,000,000	88,900,000
Acres open to hunting (outside Alaska)	9,800,000	11,000,000	11,300,000	0	3,000,000	6,200,000	13,600,000	12,500,000
Refuges opened to waterfowl hunting	142	159	163	16	30	100	260	200
Acres open to waterfowl hunting	78,900,000	79,500,000	80,000,000	76,400,000	76,700,000	77,500,000	81,400,000	80,500,000
Acres open to waterfowl hunting (outside Alaska)	2,500,000	3,100,000	3,600,000	0	200,000	1,100,000	5,000,000	4,500,000
Refuges open to other migratory game bird hunting	138	145	150	16	16	100	250	220
Refuges open to big game hunting	149	166	170	16	30	100	250	220
Refuges open to upland game hunting	140	157	161	16	16	100	250	220
Hunting visits (other than waterfowl) annually	771,000	617,400	770,000	50,000	75,000	300,000	1,000,000	900,000
Waterfowl hunting visits annually	331,000	265,100	320,000	25,000	40,000	100,000	500,000	450,000
24 <u>Provide Trapping Opportunities</u>								
Refuges open to trapping	195	200	220	16	50	100	300	300
Number of trapping visits	141,290	128,400	145,000	11,000	35,000	75,000	200,000	200,000

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25								
<u>Provide Fishing Opportunities</u>								
Refuges open to fishing	253	285	300	16	200	240	350	325
Fishing visits annually	5,400,000	6,100,000	8,000,000	100,000	4,000,000	5,000,000	10,000,000	10,000,000
Refuges with commercial fishing	58	60	60	0	0	58	90	130
Refuges with subsistence fishing	18	18	18	16	18	18	18	18
Refuges with freshwater fishing	205	210	250	0	150	200	300	325
Refuges with boat ramps and/or fishing piers	116	120	200	0	80	110	200	200
26								
<u>Provide Other Wildlife-oriented Recreation & Education</u>								
Refuges open to other wildlife-oriented recreation	392	450	470	150	520	450	420	520
Number of other wildlife-oriented recreation visits	34,840,000	52,220,000	64,000,000	13,150,000	98,600,000	49,050,000	28,800,000	63,000,000
Number of wildlife observation visits	15,800,000	19,600,000	25,000,000	3,000,000	40,000,000	15,800,000	15,000,000	25,000,000
Number of photography visits	685,000	1,175,000	1,500,000	100,000	2,000,000	1,000,000	1,500,000	1,500,000
Number of interpretation visits	11,800,000	20,200,000	22,000,000	5,000,000	30,000,000	20,000,000	8,000,000	28,000,000
Interpreted nature trail/tour route visits	5,300,000	9,100,000	12,000,000	3,000,000	20,000,000	10,000,000	3,000,000	12,000,000
Refuges with interpreted hiking trails	160	180	250	100	300	200	80	250
Refuges with interpreted auto-tour routes	106	115	150	0	200	110	80	120
Number of student/teacher visits	200,000	345,000	500,000	50,000	600,000	250,000	100,000	500,000
Refuges with environmental education programs	191	200	250	50	300	300	100	250
Number of visitor center visits	1,055,000	1,800,000	3,000,000	2,000,000	6,000,000	2,000,000	1,200,000	4,000,000
Refuges with visitor centers	56	65	120	75	150	75	50	150
27								
<u>Provide Nonwildlife-oriented Recreation</u>								
Number of nonwildlife-oriented recreation visits	2,300,000	1,300,000	250,000	100,000	250,000	250,000	250,000	5,000,000
Refuges with nonwildlife-oriented recreation	195	150	50	16	50	50	50	350
28								
<u>Inventory & Protect Cultural Resources</u>								
Refuges with cultural resources (estimate)	468	538	538	508	528	555	555	478
Acres inventoried	800,000	1,100,000	2,500,000	900,000	5,000,000	2,500,000	2,500,000	4,000,000
Percent of acres inventoried	<1%	1%	3%	1%	6%	3%	3%	5%
Number of sites recorded	7,000	9,600	21,900	7,900	21,900	21,900	21,900	15,000
Sites protected	245	380	500	320	500	500	500	500
Sites interpreted	110	120	150	150	350	150	150	120
Sites impacted	2,600	3,700	3,500	3,200	3,100	3,500	4,100	6,000