25/24.17/23.33
Scenario

[redacted]

Brown Pelican roosting and foraging opportunities

In this calculation, 5,000 pelicans are present (max in summer) each years until 2030, when conditions cause the number to fall to zero. However, when the Sea is altered, the number falls to zero in the year 2018. Here, we simply calculate the difference in terms of lost/displaced pelican user-years between the unaltered and altered states. Note that each year in the future is discounted at 3%, in keeping with federal regs regarding natural resource damage assessment.

INJURY CALCULATION

	UNALTERED		ALTERED	
year	birds	birds discounted	birds	birds discounted
2002	3295	3295	3295	3295
2003	3295	3199	3295	3199
2004	3295	3106	3295	3106
2005	3295	3015	3295	3015
2006	3295	2928	3295	2928
2007	3295	2842	3295	2842
2008	3295	2760	3295	2760
2009	3295	2679	3295	2679
2010	3262	2575	3262	2575
2011	3229	2475	3229	2475
2012	3196	2378	3196	2378
2013	3196	2309	3163	2285
2014	3163	2218	3130	2195
2015	3130	2131	3130	2131
2016	3130	2069	3097	2047
2017	3097	1988	3064	1967
2018	3064	1909	3031	1889
2019	3064	1854	2965	1794
2020	3031	1780	1201	705
2021	3031	1729	25	14
2022	2998	1660	25	14
2023	2965	1594	25	13
2024	2965	1547	25	13
2025	2377	1204	25	13
2026	2377	1169	25	12
2027	1789	854	25	12
2028	1201	557	25	12
2029	1201	541	25	11
2030	613	268	25	11
2031	613	260.12432	25	10.608659
2032	25	10.299669	25	10.299669

PELICAN COUNTS AT SALTON

peak in 2000	2600
peak in 2001	3990
average:	**3295**

Injury Calculation
With Benchmark
Water
(25/24.17/23.33)

Total Bird User-Years (discounted)

58895	**46402**

TOTAL LOSS DUE TO ALTERATION OF SALTON SEA: 12493 pelican user-years
−87 (previously discounted as not a material impact)
12,406

12.5/25/35 Scenario

[redacted]

Brown Pelican roosting and foraging opportunities

In this calculation, 5,000 pelicans are present (max in summer) each years until 2030, when conditions cause the number to fall to zero. However, when the Sea is altered, the number falls to zero in the year 2018. Here, we simply calculate the difference in terms of lost/displaced pelican user-years between the unaltered and altered states. Note that each year in the future is discounted at 3%, in keeping with federal regs regarding natural resource damage assessment.

INJURY CALCULATION

	UNALTERED		ALTERED	
year	birds	birds discounted	birds	birds discounted
2002	3295	3295	3295	3295
2003	3295	3199	3295	3199
2004	3295	3106	3295	3106
2005	3295	3015	3295	3015
2006	3295	2928	3295	2928
2007	3295	2842	3295	2842
2008	3295	2760	3295	2760
2009	3295	2679	3295	2679
2010	3262	2575	3262	2575
2011	3229	2475	3229	2475
2012	3196	2378	3196	2378
2013	3196	2309	3163	2285
2014	3163	2218	3130	2195
2015	3130	2131	3097	2109
2016	3130	2069	3097	2047
2017	3097	1988	3064	1967
2018	3064	1909	3031	1889
2019	3064	1854	2965	1794
2020	3031	1780	1201	705
2021	3031	1729	25	14
2022	2998	1660	25	14
2023	2965	1594	25	13
2024	2965	1547	25	13
2025	2377	1204	25	13
2026	2377	1169	25	12
2027	1789	854	25	12
2028	1201	557	25	12
2029	1201	541	25	11
2030	613	268	25	11
2031	613	260.12432	25	10.608659
2032	25	10.299669	25	10.299669

PELICAN COUNTS AT SALTON

peak in 2000	2600
peak in 2001	3990
average:	**3295**

Injury Calculation with Benchmark Water (12.5/25/35)

Total Bird User-Years (discounted)

58895	**46379**

TOTAL LOSS DUE TO ALTERATION OF SALTON SEA: 12515 pelican user-years

− 87 (discounted previously as not material)

12,428

Brown Pelican roosting and foraging opportunities

Number of lost pelican-years of roosting and foraging: 12470

Here, we attempt to scale the size of project we need to compensate/mitigate for the loss of pelican foraging and roosting opportunities calculated under the injury.
We assume that the project will be long-lasting, and thus will provide roosting and foraging for 100 years, beginning in the year 2005.

Size of project (# of birds it must provide for each year): 1200
Benefit of project (# of gained pelican-years of roosting and foraging): 13607 (should approx. equal 1

RESTORATION CREDIT CALCULATION

year	birds	birds discounted
2002	0	0
2003	0	0
2004	0	0
2005	0	0
2006	0	0
2007	0	0
2008	0	0
2009	0	0
2010	0	0
2011	0	0
2012	0	0
2013	0	0
2014	0	0
2015	0	0
2016	0	0
2017	0	0
2018	200	125
2019	400	242
2020	600	352
2021	800	456
2022	1000	554
2023	1200	645
2024	1200	626
2025	1200	608
2026	1200	590
2027	1200	573
2028	1200	556
2029	1200	540
2030	1200	524
2031	1200	509
2032	1200	494
2033	1200	480
2034	1200	466
2035	1200	452
2036	1200	439
2037	1200	426

Credit based on conservation measure requirements
1,200 pelicans provided with roosts
full success to be achieved by 2023 through 2048
(ramp up 2018 - 2022)

2038	1200	414
2039	1200	402
2040	1200	390
2041	1200	379
2042	1200	368
2043	1200	357
2044	1200	347
2045	1200	337
2046	1200	327
2047	1200	317
2048	1200	308
2049		0
2050		0
2051		0
2052		0
2053		0
2054		0
2055		0
2056		0
2057		0
2058		0
2059		0
2060		0
2061		0
2062		0
2063		0
2064		0
2065		0
2066		0
2067		0
2068		0
2069		0
2070		0
2071		0
2072		0
2073		0
2074		0
2075		0
2076		0
2077		0
2078		0
2079		0
2080		0

Total Benefit (bird user-years discounted):
13607

From: Paul Weghorst
To: Bruce Ellis; carol_a_roberts@fws.gov; Jayne Harkins; John_Eckhardt@msn.com; Laura Harnish; Sandy Eto; Shields, Tina Anderholt
Date: 9/26/03 1:22PM
Subject: Another IID ISG Backfill Simulation of the Salton Sea

Laura Harnish and John Eckhardt asked me to run another ISG backfill simulation of the Salton Sea assuming that the full 72.5 kaf impact occurs in 2012. I have run this and the attached files contain the mean salinity, elevation, and surface area simulation results as well as a stochastic band graph for salinity. It looks to me like none of our conclusions change with this scenario.

If anyone has any questions... please give me a call.

Paul A. Weghorst, PE
Bureau of Reclamation
Mail Stop: D-8520
PO Box 25007
Denver, CO 80225
pweghorst@do.usbr.gov
(303)-445-2534 (Phone)
(720)-544-0271 (Fax)

Year	Baseline Salinity (mg/l)	IID to SD By Fallowing With No Effect and 33.3% OF CVWD Water Derived From System/On-Farm Returning to the Sea and IID Conditional ISG Backfill Salinity (mg/l)
2000	44000	44000
2001	44816	44799
2002	45657	45600
2003	46467	46403
2004	47277	47202
2005	48029	47962
2006	48769	48663
2007	49501	49379
2008	50222	50081
2009	50929	50819
2010	51653	51579
2011	52349	52299
2012	53047	53112
2013	53756	54496
2014	54455	55298
2015	55107	56098
2016	55796	56910
2017	56448	57715
2018	57123	58586
2019	57709	60961
2020	58359	63757
2021	58984	67019
2022	59560	70692
2023	60189	74433
2024	60797	78330
2025	61389	82330
2026	61923	86308
2027	62512	90403
2028	63075	94371
2029	63632	98238
2030	64200	101723
2031	64746	105255
2032	65254	108578
2033	65742	111579

Scenaro 3

Benchmark Water Inflow Reductions

2006 - Ø

2009 Ø

2012 72.5 KAF