ATTACHMENT C

Review of December 18, 2002 Final Biological Opinion (BO) on Reclamation's Proposed Section 7(a)(1) Conservation Measures for Listed Species in the Imperial Irrigation District (IID)/Salton Sea Areas in Light of Revised Colorado River Water Delivery Agreement, and U.S. Fish and Wildlife Service Letter of Concurrence dated October 7, 2003

United States Department of the Interior

BUREAU OF RECLAMATION
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MEMORANDUM

To: Files

From: Bruce D. Ellis Bruce D. Ellis
Chief, Environmental Resource Management Division

Subject: Review of December 18, 2002, Final Biological Opinion (BO) on Reclamation's Proposed Section 7(a)(1) Conservation Measures for Listed Species in the Imperial Irrigation District (IID)/Salton Sea Areas in Light of Revised Colorado River Water Delivery Agreement (Draft Dated September 22, 2003)

Reclamation staff reviewed the subject BO and Draft Water Delivery Agreement, as well as Reclamation's biological assessment (BA) (dated July 23, 2002), BA Errata (dated October 23, 2002), and other correspondence relevant to the Section 7 consultation. The purpose of our review was to determine whether the terms of the revised Water Delivery Agreement would affect the description of the Project Action (voluntary fish and wildlife conservation measures) or analysis of impacts in the BA and BO.

Based on our review of the Water Delivery Agreement, we determined there was only one new component that potentially affected the BA and BO - IID's agreement to provide up to a total of 145 thousand acre-feet (kaf), if necessary, to meet agricultural water use reduction benchmarks in the years 2006, 2009, and 2012. The maximum amounts for transfer of this water, if needed, would be 25 kaf in 2006, 50 kaf plus the unused amounts from 2006 in 2009, and 70 kaf plus the unused amounts from 2006 and 2009 in 2012 (from Exhibit B, Draft Water Delivery Agreement). IID also committed that the maximum inflow reduction to the Salton Sea from conservation and transfer of the 145 kaf would be 72.5 kaf. Since this water conservation and transfer was new, and in addition to the water transfers (and inflow reductions) considered in the 2002 BO, we determined that the new schedule of water transfers, including the additional 145 kaf of "benchmark water," should be reviewed for two possible changes to the BA/BO: (1) additional salinity impacts to the Salton Sea, which could require revision to the brown pelican conservation measures, and (2) possible additional impacts to drain water quality, which could require revisions to the Desert pupfish and Yuma Clapper rail conservation measures.

Salinity Impacts to Salton Sea From Provision of "Benchmark Water"

Reclamation made three new model runs of its Salton Sea model to determine if the additional reduction in inflow during 2006, 2009, and 2012 would accelerate the increase in salinity levels in the Salton Sea, thereby, accelerating impacts on fish and brown pelicans. Three scenarios

were modeled. The first assumed reduced inflows to the Salton Sea of 12.5 kaf in 2006, 25 kaf in 2009, and 35 kaf in 2012, for a total reduced inflow of 72.5 kaf. The second scenario attempted to create a worst-case analysis for salinity impacts by increasing the impacts in the earlier benchmark years. It assumed all efficiency conservation in 2006, and all fallowing in 2012, with the remaining reductions to inflow occurring in 2009. The resulting reductions to inflow modeled would be 25 kaf in 2006, 24.17 kaf in 2009, and 23.33 kaf in 2012. The third scenario assumed no transfers in 2006 or 2009, will all reductions in inflow to occur in 2012. Tables and figures depicting these three new model runs are attached (e-mails from Paul Weghorst to Bruce Ellis dated 9/25/2003, and 9/26/2003). The original model run (which was the basis for the BO) is also attached, as well as pelican impact calculations for the original, and these three new scenarios (see faxogram from Carol Roberts to Bruce Ellis dated 9/25/2003, and e-mail from Bruce Ellis to Laura Harnish dated 9/26/03)). The result of the analysis is that total pelican impacts would increase very slightly as a result of the additional reductions in inflow (12,383 pelican user-years in the 2002 BO vs. either 12,428 pelican user-years for the first and third scenarios described, and 12,406 pelican user-years for the second (worst-case) scenario described). The Brown pelican conservation measure identified in the BA and BO produced a benefit (number of gained pelican-years of roosting and foraging) of 13,607 pelican use-years. We conclude no additional Brown pelican conservation measures are required; and no modification of the BA or BO is necessary.

Possible Drain Water Impacts from "Benchmark Water"

The analysis of drain water quality impacts (increases in salinity and selenium concentrations) in the BA and BO was based on IID's analysis carried out for the 2002 IID Water Conservation and Transfer Project EIR/EIS and Habitat Conservation Plan. The analysis was based on the original Quantification Settlement Agreement (QSA) schedule of conservation and transfers, and evaluated a worst-case impact scenario on drain water quality (i.e., that all transferred water would be produced by efficiency improvements with resulting 1:1 reductions in tail-water). By comparing the current, slower ramp-up rate for the water transfers (including the addition of the new benchmark water) to the original transfer schedule, Reclamation concludes there are no new drain water impacts from the "benchmark water," because the total reduction in tail-water is less (even with the added benchmark water) than originally analyzed (Table 1).

Table 1. Imperial Irrigation District Transfers[1]

	Original QSA transfer Schedule[2]				Current Transfer Schedule				
Benchmark Yr	IID to SD	IID to MWD	IID to CVWD	Total transfer	IID to SD	IID to MWD	IID to CVWD	Bench-mark	Total Transfer
2006	82.50	2.50	0	**85**	40	0	0	25.00	**65.00**
2009	140.00	0.00	15	**155**	60	0	8	24.17	**92.17**
2012	200.00	0.00	30	**230**	90	0	21	23.33	**134.33**

[1] For analysis of impacts to the drains, the worst case would also assume all water transferred would be conserved through efficiency improvements.

[2] Analyzed in the IID EIR/EIS and Biological Opinion drain analysis.

Further, the IID modeling of drain impacts assumed all reductions in tail-water would occur beginning in Year 1, which also means the "benchmark water" would be irrelevant to the analysis, since transfer of the benchmark water would never increase the total reduction in tail-water above that modeled (personal communication with John Eckhardt of CH2MHill, 9/24/2003). We conclude the analysis of impacts on Desert pupfish and Yuma Clapper rail from drain water quality declines is still accurate, and no modification needs to be made to the proposed conservation measures for these two species, and no modification to the BA or BO is needed.

Attachments 4

From: Paul Weghorst
To: Bruce Ellis; carol_a_roberts@fws.gov; Jayne Harkins; John Eckhardt; Laura Harnish; Sandy Eto; Shields, Tina Anderholt
Date: 9/25/03 9:37AM
Subject: Salton Sea With IID Conditional ISG Deliveries

Attached are three excel files containing Salton Sea Model Results as per the following:

Summary_Charts_CA_Series_Obj2_December02.xls:
From December 2002

Summary_Charts_CA_Series_Obj2_092403_ISG_25_24.17_23.33.xls:
With IID Condition Impacts:

2006	25,000 af
2009	24,170 af
2012	23,330 af

Summary_Charts_CA_Series_Obj2_092403_ISG_12.5_25_35.xls
With IID Condition Impacts:

2006	12,500 af
2009	25,000 af
2012	35,000 af

These tables and charts are for mean salinity, elevation, and surface area. I am working on the band graphs. These will follow soon.

The salinity values are a bit higher in the 12.5, 25, and 35 case rather than in the worst case. This is because the diiferences in impacts are trivial between the two scenarios and because of the stochastic nature of the model. It does not matter which we use.

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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	45561
2003	46467	46405
2004	47277	47183
2005	48029	47976
2006	48769	48689
2007	49501	49522
2008	50222	50215
2009	50929	50966
2010	51653	51891
2011	52349	52632
2012	53047	53407
2013	53756	54495
2014	54455	55230
2015	55107	56036
2016	55796	56851
2017	56448	57644
2018	57123	58514
2019	57709	60892
2020	58359	63756
2021	58984	67116
2022	59560	70845
2023	60189	74569
2024	60797	78456
2025	61389	82417
2026	61923	86581
2027	62512	90639
2028	63075	94567
2029	63632	98401
2030	64200	102130
2031	64746	105577
2032	65254	109035
2033	65742	112163

Scenario 1

Benchmark Water Inflow Reductions

2006 12,500af

2009 25,000 af

2012 35,000 af