ATTACHMENT 7

Dean Runyan Associates

California Travel Impacts by County, 1992-2012

2013 Preliminary State & Regional Estimates

May 2014

california
TRAVEL & TOURISM
COMMISSION

A Joint Marketing Venture of the California Travel & Tourism Commission and the Governor's Office of Business Development (GO-Biz)

PREPARED BY

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EXECUTIVE SUMMARY

This report provides detailed statewide and regional travel impact estimates for California from 1991 to 2013. The estimates for 2013 are preliminary. The report also provides detailed county estimates for 2012 and transient occupancy tax receipts for jurisdictions through the 2013 fiscal year.

2013 CALIFORNIA TRAVEL INDUSTRY SURPASSES PRE-RECESSION LEVEL

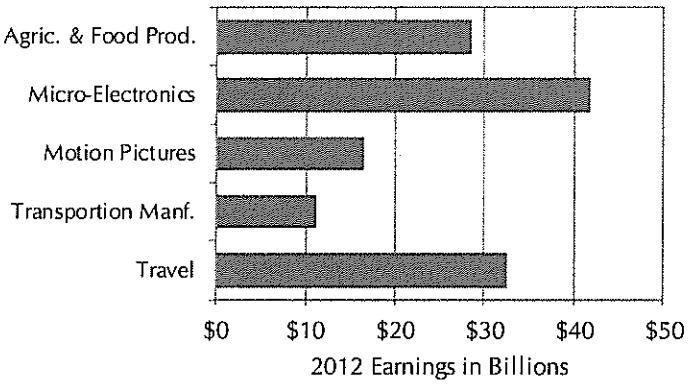
The California travel industry expanded for the fourth consecutive year following the 2007-2009 recession. In terms of both employment and real inflation-adjusted dollars, the California travel industry exceeded its pre-recession levels in 2013.

- ***Spending.*** Total direct travel spending in California was $109.6 billion in 2013(preliminary). During the past year, travel spending increased by 3.2 percent in current dollars and 2.8 percent in real (inflation-adjusted) dollars. The analogous figures for the 2011 to 2012 period were 4.3 percent and 2.2 percent. The decrease in motor fuel prices in 2013 accounted for most of the difference in the changes in current and real spending.
- ***Employment.*** Total travel-generated employment increased by 4.4 percent during the past year. Employment growth has accelerated in each of the past four years. The level of travel-generated employment (965,800) now exceeds the pre-recession period.
- ***Tax Revenues.*** The growth in local tax revenues (6.4 percent) was driven by increased lodging tax receipts due both to room demand and room rates. Travel-generated state tax revenue increased by 4.9 percent. This increase reflects the increase in the state sales tax rate of 0.25 percent. The local and state tax revenues generated by visitor spending are equivalent to $550 per resident household.
- ***Travel Activity.*** Room demand, as measured by Smith Travel Research, increased by 3.3 percent from 2012 to 2013, following a 3.6 percent increase the preceding year. This is the fourth consecutive year of increasing room demand. Visitor air arrivals on domestic flights were unchanged for the year, largely as a result of capacity limits.

THE CALIFORNIA TRAVEL INDUSTRY IS A LEADING EXPORT-ORIENTED INDUSTRY

Travel and tourism is one of the most important ***"export-oriented"*** industries in California. Spending by visitors generates sales in lodging, food services, recreation, transportation and retail businesses – the "travel industry." These sales support jobs for California residents and contribute tax revenue to local and state governments. Travel is especially important in the non-metropolitan areas of the state, where manufacturing and traded services are less prevalent.

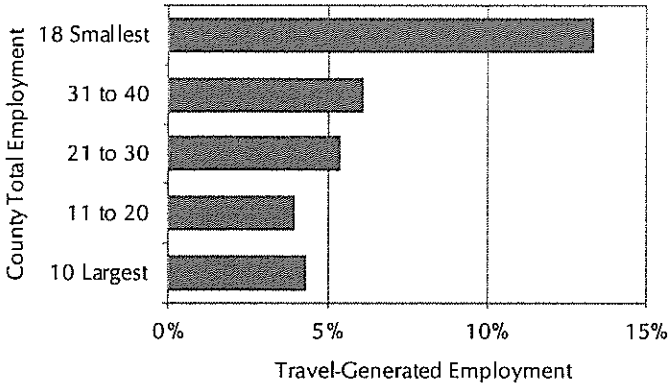
Earnings of Leading California Export-Oriented Industries



THE TRAVEL INDUSTRY BENEFITS ALL REGIONS OF CALIFORNIA

Although most travel spending and related economic impacts occur within California's primary metropolitan areas, the travel industry is important throughout California. In general, the counties with less total employment have a bigger share of travel-generated employment.

Travel-Generated Employment as a Percent of Total Employment



Households, Local Sales and Transient Occupancy Tax Receipts by County, 2012

	Total Local Tax Receipts (million)			Visitor-Generated Tax Receipts & Households			
	Local Sales	Transient Occupany	Total	Amount (million)	Percent of Total	Households (000)	Receipts per HH
Alameda	$598.1	$42.5	$640.6	$81.2	12.7%	550.9	$147
Alpine	$0.2	$0.5	$0.7	$0.6	78.0%	0.5	$1,238
Amador	$3.6	$0.8	$4.5	$1.4	30.5%	14.5	$93
Butte	$25.8	$2.7	$28.5	$4.2	14.6%	87.7	$48
Calaveras	$2.8	$0.9	$3.7	$1.4	38.0%	18.7	$76
Colusa	$3.2	$0.3	$3.5	$0.5	14.9%	7.1	$73
Contra Costa	$271.3	$9.0	$280.3	$25.5	9.1%	380.1	$67
Del Norte	$2.2	$1.2	$3.3	$1.7	51.1%	9.9	$172
El Dorado	$18.8	$8.5	$27.2	$11.5	42.2%	70.1	$164
Fresno	$200.4	$12.3	$212.7	$23.8	11.2%	292.4	$81
Glenn	$3.1	$0.6	$3.7	$0.9	24.9%	9.8	$95
Humboldt	$16.8	$4.5	$21.3	$6.2	28.9%	56.0	$110
Imperial	$36.2	$2.2	$38.3	$4.9	12.8%	49.6	$99
Inyo	$4.9	$5.0	$9.9	$6.1	61.2%	8.0	$754
Kern	$139.3	$10.4	$149.7	$17.5	11.7%	257.5	$68
Kings	$13.2	$0.5	$13.6	$1.3	9.6%	41.4	$32
Lake	$6.0	$0.9	$6.9	$1.8	25.6%	26.4	$67
Lassen	$2.3	$0.5	$2.8	$0.8	28.9%	9.9	$81
Los Angeles	$2,570.6	$354.7	$2,925.3	$555.7	19.0%	3,260.5	$170
Madera	$12.9	$3.1	$16.0	$4.3	27.1%	43.8	$99
Marin	$61.8	$12.5	$74.3	$17.5	23.6%	104.1	$168
Mariposa	$2.6	$11.7	$14.3	$13.3	93.2%	7.7	$1,733
Mendocino	$13.0	$5.8	$18.8	$7.6	40.3%	34.8	$218
Merced	$23.9	$1.3	$25.1	$2.5	10.1%	76.6	$33
Modoc	$0.9	$0.2	$1.1	$0.3	26.6%	4.0	$73
Mono	$2.2	$16.7	$18.9	$18.1	95.4%	5.8	$3,116
Monterey	$54.9	$46.6	$101.4	$57.9	57.0%	127.5	$454
Napa	$38.7	$28.3	$67.1	$35.2	52.5%	49.3	$713
Nevada	$12.9	$2.9	$15.8	$4.7	29.9%	41.5	$114

Source: Dean Runyan Associates, Inc., U.S. Bureau of the Census and California State Board of Equalization.

Local sales tax receipts reflect a 1.0 percent rate of the statewide sales tax and all other applicable city, county and district taxes.

Households, Local Sales and Transient Occupancy Tax Receipts by County, 2012

	Total Local Tax Receipts (million)			Visitor-Generated Tax Receipts & Households			
	Local Sales	Transient Occupany	Total	Amount (million)	Percent of Total	Households (000)	Receipts per HH
Orange	$787.0	$168.7	$955.7	$231.3	24.2%	1,004.9	$230
Placer	$67.1	$11.8	$78.9	$15.9	20.2%	135.3	$118
Plumas	$1.9	$0.9	$2.8	$1.4	50.3%	8.9	$157
Riverside	$400.4	$66.5	$466.9	$116.9	25.0%	697.6	$168
Sacramento	$272.0	$25.6	$297.6	$46.3	15.6%	519.1	$89
San Benito	$5.1	$0.2	$5.4	$0.7	12.9%	17.0	$41
San Bernardino	$423.6	$26.6	$450.3	$59.5	13.2%	618.5	$96
San Diego	$692.4	$185.7	$878.1	$273.1	31.1%	1,098.8	$249
San Francisco	$341.0	$336.6	$677.6	$428.8	63.3%	349.0	$1,229
San Joaquin	$137.0	$3.4	$140.4	$9.9	7.1%	217.7	$46
San Luis Obispo	$47.7	$24.1	$71.9	$30.6	42.5%	102.7	$297
San Mateo	$264.2	$52.6	$316.9	$84.3	26.6%	260.4	$324
Santa Barbara	$86.2	$37.7	$123.9	$49.7	40.1%	142.8	$348
Santa Clara	$688.2	$63.0	$751.2	$104.0	13.8%	611.5	$170
Santa Cruz	$53.7	$9.8	$63.6	$16.3	25.6%	94.8	$172
Shasta	$25.1	$4.9	$30.0	$6.9	23.0%	70.5	$98
Sierra	$0.2	$0.4	$0.6	$0.4	70.3%	1.4	$291
Siskiyou	$4.9	$2.5	$7.4	$3.3	44.6%	19.3	$171
Solano	$64.5	$3.7	$68.3	$7.6	11.1%	142.5	$53
Sonoma	$112.2	$21.9	$134.1	$34.1	25.4%	187.0	$182
Stanislaus	$76.7	$3.0	$79.7	$6.1	7.7%	166.2	$37
Sutter	$13.0	$0.5	$13.4	$0.9	6.5%	31.5	$28
Tehama	$7.1	$1.0	$8.1	$1.7	21.0%	23.8	$72
Trinity	$0.8	$0.2	$1.0	$0.3	33.2%	6.0	$55
Tulare	$57.5	$5.1	$62.5	$7.4	11.8%	132.0	$56
Tuolumne	$6.7	$2.7	$9.5	$3.8	40.0%	22.1	$172
Ventura	$113.6	$17.1	$130.7	$25.2	19.3%	268.9	$94
Yolo	$33.0	$2.7	$35.8	$4.4	12.4%	71.2	$62
Yuba	$7.0	$0.3	$7.3	$0.9	12.9%	24.4	$38
California Total	$8,932.6	$1,666.3	$10,598.9	$2,480.1	23.4%	12,691.5	$195

Source: Dean Runyan Associates, Inc., U.S. Bureau of the Census and California State Board of Equalization.

Local sales tax receipts reflect a 1.0 percent rate of the statewide sales tax and all other applicable city, county and district taxes.

ATTACHMENT 8

8/30/12 - Report on Estimated Disaster Economic Injury Worksheets for Businesses

Worksheet responses by area:	Crescent Mills	2
	Greenville	4
	Genesee	1
	Canyon Dam	6
	Lake Almanor	12
	Chester	13
	Belden	1
	Quincy	6
	Total	**45**

Worksheet responses by business type:	Food/Beverage Service	5
	Rental Properties/Sales	3
	Resorts/Lodging & RV Parks	12
	Insurance Agencies	1
	Real Estate	1
	Retail	12
	Riding Stables	1
	Cultural Attractions	1
	Auto Repair	1
	Pet Grooming	1
	Laundromat	1
	Supermarket	1
	B&B	2
	General Engineering Contractor	1
	Excavation/Aggregate Products	1
	Upholstery & Carpet Cleaning	1

Loss of income during the period reported by the above businesses varies from 9% in Greenville to 100% in Canyon Dam (due to mandatory evacuation).

The average reported loss of income for the businesses that have submitted worksheets is 53%.

In the areas closest to the fire and smoke, namely Canyon Dam, Lake Almanor and Chester, the average percentage loss of income rises to 63%, with further losses anticipated due to cancellations received for the remainder of the season.

Several businesses report that they have still to feel the full economic effects of the disaster. Some lodging businesses that have received cancellations from tourists have managed to fill up rooms with firefighters and PG&E staff but as these people leave the area, the lodging establishments will suffer economic injury due to visitor cancellations received for the remainder of the season. The effect on rental companies is also delayed as the commission they receive is not accounted for until at least a month after the rent has been paid.

Of the five businesses worst hit by the economic downturn during this period, revenue losses equate to 96-100% with an average loss of 99%. All five of these businesses are located in Canyon Dam, Lake Almanor or Chester.

So far, the businesses surveyed have reported that 45 employees have been laid off and 6 have had their weekly hours reduced. The total revenue lost so far during the disaster is reported as $1,431,417

Other effects of the fire include, a Lake Almanor dentistry business reporting power outages that affected its computer network, resulting in a service charge to reconfigure the system (currently estimated at 200-300 dollars) plus an estimated loss of $49,336 for contents at the supermarket in Greenville.

Report on Estimated Disaster Economic Injury Worksheets for Businesses

Area	Business Type	Business Name	Owner(s) Director	Address	Impact Start/End Dates	Revenue Last Year	Revenue This Year	Loss of Revenue	Percentage Loss of Revenue	Employees Laid Off	
Crescent Mills	Retail	Crescent Country	Barbara Tucker	15771 Hwy 89	7/29/12 to 8/26/12	$9,514	$4,585	$4,929	52%	0	
2	Auto Repair	Neff Automotive	Kevin Neff	15680 Hwy 89	7/29/12 to 8/29/12	$18,494	$13,619	$4,875	36%	0	
Greenville	Retail	Sterling Sage	Alfred Huddleston	213 Main Street	7/29/12 to 8/31/12	$24,500	$15,000	$9,500	39%	0	
4	Laundromat	Indian Valley Washette	Ken Tucker	425 Crescent Street	8/1/12 to 12/31/12	$9,464	$4,732	$4,732	50%	0	
	Supermarket	Evergreen Market	Ken Tucker	429 Crescent Street	8/1/12 to 12/31/12	$1,800,000	$1,647,000	$153,000	9%	5	LOSS C ON CU
	Bar	Way Station	Gould Fickardt	224 Main Street	7/30/12 to 9/4/12	$12,500	$10,000	$2,500	20%	1 plus 2 others with hrs cut	
Genesee 1	Bistro/Deli	Genesee Store Bistro	Robert Meacher	7201 Genesee Road	8/3/12 to 9/1/12	$9,000	$4,000	$5,000	56%	0	$200
Canyon Dam	RV Campground	Forest Park RV Spaces	Joe & Crystal Elliott	29689 Hwy 89	8/1/12 to 5/15/13	$28,000	nil	$28,000	100%	Owner operated	
6	RV Park	Whispering Pines RV Park	Stuart Treff	29524 Hwy 89	8/1/12 to 5/15/13	$20,399	$2,000	$18,399	90%	Owner operated	
	Gen Engineering Contractor	Bill Davies	William Davies	5324 Hwy 147 & 5420 Seneca Road	8/1/12 to 8/31/12	$25,000	$1,000	$24,000	96%	Owner operated	CON
	Carpet & Upholstery Cleaning	High Tech Carpet Care	Stuart Treff	29524 Hwy 89	8/1/12 to 5/15/13	$5,355	$500	$4,855	91%	Owner operated	
	Guided Trail Rides	Plumas Pines Riding Stable	Deanna Vanek	3000 Almanor Dr. West	7/29/12 to 5/30/13	$13,660	$1,105	$12,555	92%	2	
	Resort	Plumas Pines Resort	Glenn Geer	3000 Almanor Dr. West	8/1/12 to 8/28/12	$246,151	$161,443	$84,708	34%	8	
Lake Almanor	Vacation Rentals & Cabin Sales	Sierra Nevada Properties - Lake Almanor Resorts	William Kerns	325 Peninsula Drive	7/29/12 to 8/26/12	$627,700	$4,200	623,500	99%	4	
12	Seasonal Golf Resort	Bailey Creek Golf Course	Kevin Hughes	433 Durkin Drive	8/12/12 to 9/8/12	$190,000	$56,000	$134,000	71%	0	
	Lodging	Longshot Lodge	Cliff Fahey	655 West Mountain Ridge Road	8/3/2012 to 8/24/12	$3,600	$2,950	$650	18%	0	
	Excavation & Aggregate Products	Turner Excavating, Inc.	Lynne Turner	3746 Big Springs Road	8/6/12 to 8/31/12	$75,000	$60,000	$15,000	20%	0	
	Lodging	Kokanee Lodge/Carson Chalets	Kimberly Carson	454 & 456 Peninsula Drive	8/4/12 to 9/3/12	$33,315	$0	$33,315	100%	2	REAL F CLEAN
	Lodging	111 Lakeside Drive	Ginny Powell	111 Lakeside Drive	8/4/12 to 9/3/12	$5,720	$0	$5,720	100%	0	REAL
	Restaurant/Deli	Carol's Café & West Shore Deli	Carol Franchetti	2932 Almanor Drive West	8/16/12 to 9/13/12	$36,195	$17,697	$18,498	51%	7	$200 REVEN
	Real Estate Brokerage	Lake Almanor Brokers	Jay Sabelman	452 Peninsula Drive	8/3/12 to 8/31/12	12000	6000	$6,000	50%	0	
	Vacation Rentals	Lake Almanor Rental Property, Inc.	Wendi Durkin	289 Clifford Dr. North	8/1/12 to 8/31/12		SEE NOTES ⟶			1 employee reduced to PT	WILL P
	Pet Grooming	Avonna's Critter Clippers	Avonna Burkman	3440 Hwy 147	8/1/12 to 8/29/12	$5,078	$2,805	$2,273	45%	1	
	Lodging & Marina	Knotty Pine Resort	Brett Womack	430 Peninsula Drive	8/1/12 to 9/1/12	$197,580	$123,269	$74,311	38%	4	
	Cabin & RV Space Rentals	Big Springs Resort	Louis Colletta	2655 Big Springs Rd.	8/10/12 to 10/31/12	$23,000	$5,000	$18,000	78%	0	
Chester	Lodging	Antlers Motel	Desta & Dan Dunlap	268 Main Street	7/29/12 to ?		SEE NOTES ⟶			0	FIREFI CANCE
13	Insurance	Rouland Insurance Agency	Linda Rouland	650 Main Street	8/1/12 to 8/31/12		SEE NOTES ⟶			0	ESTIM UNTIL
	Retail	Back Porch Consignment	Fran Gray	160 Main Street	7/29/12 to 8/25/12	$4,389	$724	$3,665	84%	Owner operated	
	Hospitality	The Bidwell House B&B Inn	Filip Laboda	112 Main Street	7/30/12 to 9/12/12	$76,246	$58,223	$18,023	24%	2	
	Retail/Fishing Guide	The Lake Almanor Fly Fishing Co.	Mary Maumoynier	181 #1 Main Street	8/3/12 to 8/24/12	$6,597	$3,052	$3,545	54%	Owner operated	
	Retail	B & B Booksellers (Books & Beyond)	Susan Bryner	140 Main Street	8/1/12 to 8/31/12	$21,243	$14,656	$6,587	31%	2	
	Retail	Candy Shoppe	Vicki Hx- Young	134 Willow Street	8/3/12 to 9/3/12	$2,526	$1,700	$826	33%	1	
	Retail Jeweler	David Price Jeweler	David Price	216 Main Street	7/28/12 to 9/1/12	confidential	confidential	confidential	18%	0	
	Retail	Good Vibrations	Ronna Ramsay	278 Main Street	8/1/12 to 9/8/12	$28,065	$10,665	$ 17,400	62%	0	
	Produce Stand/Coffee House	Jeffroes Produce and Pies	Jeff Ogle	539 Main Street	8/1/12 to 9/6/12	$59,200	$22,200	$37,000	63%	3	
	Retail - Furniture & Gifts	Wynter Willow	Robert Caton	369 Main Street	8/6/21 to 8/31/12	$9,000	$50	$8,950	99%	0	NEW B BASED

Report on Estimated Disaster Economic Injury Worksheets for Businesses

Area	Business Type	Business Name	Owner(s) Director	Address	Impact Start/End Dates	Revenue Last Year	Revenue This Year	Loss of Revenue	Percentage Loss of Revenue	Employees Laid Off	Notes
Crescent Mills	Retail	Crescent Country	Barbara Tucker	15771 Hwy 89	7/29/12 to 8/26/12	$9,514	$4,585	$4,929	52%	0	
2	Auto Repair	Neff Automotive	Kevin Neff	15680 Hwy 89	7/29/12 to 8/29/12	$18,494	$13,619	$4,875	36%	0	
Greenville	Retail	Sterling Sage	Alfred Huddleston	213 Main Street	7/29/12 to 8/31/12	$24,500	$15,000	$9,500	39%	0	
4	Laundromat	Indian Valley Washette	Ken Tucker	425 Crescent Street	8/1/12 to 12/31/12	$9,464	$4,732	$4,732	50%	0	
	Supermarket	Evergreen Market	Ken Tucker	429 Crescent Street	8/1/12 to 12/31/12	$1,800,000	$1,647,000	$153,000	9%	5	LOSS OF CONTENTS $49,336. REVENUE LOSSES ARE AN ESTIMATE BASED ON CURRENT DOWNTURN IN BUSINESS.
	Bar	Way Station	Gould Fickardt	224 Main Street	7/30/12 to 9/4/12	$12,500	$10,000	$2,500	20%	1 plus 2 others with hrs cut	
Genesee 1	Bistro/Deli	Genesee Store Bistro	Robert Meacher	7201 Genesee Road	8/3/12 to 9/1/12	$9,000	$4,000	$5,000	56%	0	$200 LOSS IN PERISHABLES
Canyon Dam	RV Campground	Forest Park RV Spaces	Joe & Crystal Elliott	29689 Hwy 89	8/1/12 to 5/15/13	$28,000	nil	$28,000	100%	Owner operated	
6	RV Park	Whispering Pines RV Park	Stuart Treff	29524 Hwy 89	8/1/12 to 5/15/13	$20,399	$2,000	$18,399	90%	Owner operated	
	Gen Engineering Contractor	Bill Davies	William Davies	5324 Hwy 147 & 5420 Seneca Road	8/1/12 to 8/31/12	$25,000	$1,000	$24,000	96%	Owner operated	CONTENTS LOSS OF $2078
	Carpet & Upholstery Cleaning	High Tech Carpet Care	Stuart Treff	29524 Hwy 89	8/1/12 to 5/15/13	$5,355	$500	$4,855	91%	Owner operated	
	Guided Trail Rides	Plumas Pines Riding Stable	Deanna Vanek	3000 Almanor Dr. West	7/29/12 to 5/30/13	$13,660	$1,105	$12,555	92%	2	
	Resort	Plumas Pines Resort	Glenn Geer	3000 Almanor Dr. West	8/1/12 to 8/28/12	$246,151	$161,443	$84,708	34%	6	
Lake Almanor	Vacation Rentals & Cabin Sales	Sierra Nevada Properties - Lake Almanor Resorts	William Kerns	325 Peninsula Drive	7/29/12 to 8/26/12	$627,700	$4,200	623,500	99%	4	
12	Seasonal Golf Resort	Bailey Creek Golf Course	Kevin Hughes	433 Durkin Drive	8/12/12 to 9/8/12	$190,000	$56,000	$134,000	71%	0	
	Lodging	Longshot Lodge	Cliff Fahey	633 West Mountain Ridge Road	8/3/2012 to 8/24/12	$3,600	$2,950	$650	18%	0	
	Excavation & Aggregate Products	Turner Excavating, Inc.	Lynne Turner	3746 Big Springs Road	8/6/12 to 8/31/12	$75,000	$60,000	$15,000	20%	0	
	Lodging	Kokanee Lodge/Carson Chalets	Kimberly Carson	454 & 458 Peninsula Drive	8/4/12 to 9/3/12	$33,315	$0	$33,315	100%	2	REAL PROPERTY DAMAGE - $4800 FOR APPLIANCES & EXTENSIVE CLEANING
	Lodging	111 Lakeside Drive	Ginny Powell	111 Lakeside Drive	8/4/12 to 9/3/12	$5,720	$0	$5,720	100%	0	REAL PROPERTY DAMAGE - $250 FOR ADDITIONAL CLEANING
	Restaurant/Deli	Carol's Café & West Shore Deli	Carol Franchetti	2932 Almanor Drive West	8/16/12 to 9/13/12	$36,195	$17,697	$18,498	51%	7	$200 LOSS IN PRODUCE DURING MANDATORY EVACUATION. LOSS OF REVENUE FROM CATERING FOR TWO CANCELLED SEPT. EVENTS = $3500
	Real Estate Brokerage	Lake Almanor Brokers	Jay Sabelman	452 Peninsula Drive	8/3/12 to 8/31/12	12000	6000	$6,000	50%	0	
	Vacation Rentals	Lake Almanor Rental Property, Inc.	Wendi Durkin	289 Clifford Dr. North	8/1/12 to 8/31/12		SEE NOTES ⟶			1 employee reduced to PT	WILL PROVIDE UP TO DATE INFO ON 9/15 FOR AUGUST'S REVENUE
	Pet Grooming	Avonna's Critter Clippers	Avonna Burkman	3440 Hwy 147	8/1/12 to 8/29/12	$5,078	$2,805	$2,273	45%	1	
	Lodging & Marina	Knotty Pine Resort	Brett Womack	430 Peninsula Drive	8/1/12 to 9/1/12	$197,580	$123,269	$74,311	38%	4	
	Cabin & RV Space Rentals	Big Springs Resort	Louis Colletta	2655 Big Springs Rd.	8/10/12 to 10/31/12	$23,000	$5,000	$18,000	78%	0	
Chester	Lodging	Antlers Motel	Desta & Dan Dunlap	268 Main Street	7/29/12 to ?		SEE NOTES ⟶			0	FIREFIGHTERS FILLING ROOMS DURING FIRE BUT TOURISTS HAVE CANCELLED. FULL EFFECTS OF DISASTER WILL BE FELT LATER IN SEASON.
13	Insurance	Rouland Insurance Agency	Linda Rouland	650 Main Street	8/1/12 to 8/31/12		SEE NOTES ⟶			0	ESTIMATED REVENUES AS PAYMENT FOR AUG. WILL NOT BE RECEIVED UNTIL NOV.
	Retail	Back Porch Consignment	Fran Gray	160 Main Street	7/29/12 to 8/25/12	$4,389	$724	$3,665	84%	Owner operated	
	Hospitality	The Bidwell House B&B Inn	Filip Laboda	112 Main Street	7/30/12 to 9/12/12	$76,246	$58,223	$18,023	24%	2	
	Retail/Fishing Guide	The Lake Almanor Fly Fishing Co.	Mary Maumoynier	181 #1 Main Street	8/3/12 to 8/24/12	$6,597	$3,052	$3,545	54%	Owner operated	
	Retail	B & B Booksellers (Books & Beyond)	Susan Bryner	140 Main Street	8/1/12 to 8/31/12	$21,243	$14,656	$6,587	31%	2	
	Retail	Candy Shoppe	Vicki Hx- Young	134 Willow Street	8/3/12 to 9/3/12	$2,526	$1,700	$826	33%	1	
	Retail Jeweler	David Price Jeweler	David Price	216 Main Street	7/28/12 to 9/1/12	confidential	confidential	confidential	18%	0	
	Retail	Good Vibrations	Ronna Ramsay	278 Main Street	8/1/12 to 9/8/12	$28,065	$10,665	$ 17,400	62%	0	
	Produce Stand/Coffee House	Jeffroes Produce and Pies	Jeff Ogle	539 Main Street	8/1/12 to 9/6/12	$59,200	$22,200	$37,000	63%	3	
	Retail - Furniture & Gifts	Wynter Willow	Robert Caton	369 Main Street	8/6/21 to 8/31/12	$9,000	$50	$8,950	99%	0	NEW BUSINESS OPENED MAY 13th 2012. AUGUST ESTIMATED LOSSES BASED ON JULY INCOME
	Restaurant	Maria's Mexican Restaurant	Maria Sanchez	139 Main Street	8/1/12 to 9/14/12	confidential	confidential	confidential	50%		
	Retail	Rycraft, Inc	Robin Rycraft	168 Main Street	8/1/12 to 8/23/12	July 12 $2,297	$677	$1620 since first month of	71%	2 reduced to PT work	NEW BUSINESS OPENED MAY 13th 2012
Quincy/ Bucks Lake	Retail	Quincy Hot Spot	Lisa Driscoll	2019 E. Main Street	7/29/12 to 8/23/12	$45,352	$39,300	$6,052	13%	2	
6	Cultural Attraction	Plumas County Museum	Scott Lawson	500 Jackson Street	8/1/12 to 9/8/12	$680	$546	$134	20%	0	
	Home Rentals	Quincy Home Rentals	Cecilia Reynolds	36179 Hwy 70	8/5/12 to 9/4/12	$6,061	$2,123	$3,938	65%	Owner operated	
	Retail	Ayoobs Main Street Styles	Charlotte Smith	515 W. Main Street	7/29/12 to 8/20/12	$21,206 (Projected	$18,942	$2,264 (projected	11% (51%)	1	WAS EXPECTED TO BE $29,781. THE LOSS OF REVENUE WOULD THEREFORE BE $10,839 = 51%
	Lodging	Ada's Place	Mike & Valerie Nellor	562 Jackson Street	8/3/12 to 8/23/12	$8,125	$6,000	$2,125	26%	Owner operated	
	B&B and Retail Store	Haskins Valley Inn	Kenneth & Dixie Nelson	16788 Bucks Lake Rd.	7/29/12 to 9/5/12	$65,754	$54,351	$11,403	17%	0	
Belden 1	RV Park/ Store/Cafe	Caribou Crossroads, Inc	Pam & Mike Hanson	16242 Hwy 70	8/5/12 to 9/4/12	$27,143	$7,578	$19,565	72%	1 PT	NO INCOME FOR 2 FULL WKS DUE TO EVACUATION. ROAD STILL CLOSED.
Total Responses 45								Total Losses $1,431,417	Average 53%	Jobs Lost 45 Hrs Reduced 6	

ATTACHMENT 9

Estimating the benefits of maintaining adequate lake levels to homeowners using the hedonic property method

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[1] The hedonic property method was used to estimate residents' economic benefits from maintaining high and stable lake levels at Lake Almanor, California. Nearly a thousand property transactions over a 14-year period from 1987 to 2001 were analyzed. The linear hedonic property regression explained more than 60% of the variation in-house prices. Property prices were negatively and significantly related to the number of linear feet of exposed lake shoreline. Each additional one foot of exposed shoreline reduces the property price by $108–$119. A view of the lake added nearly $31,000 to house prices, while lakefront properties sold for $209,000 more than non-lake front properties. *INDEX TERMS:* 6314 Policy Sciences: Demand estimation; 6329 Policy Sciences: Project evaluation; *KEYWORDS:* nonmarket valuation, willingness to pay, water quality, property values

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1. Introduction

[2] Lakes and reservoirs are attractive areas to live near because of the high amenity levels such water resources provide to residents. Many "lakes" are actually reservoirs created for water supply and/or hydropower production. Other times natural lakes are modified to allow for additional storage and/or enhanced hydroelectric production. In either case, people generally find the lakeshore a desirable environment for building homes. The competition among buyers for lakeshore properties pushes the prices of these properties up relative to houses not on or near such lakes. Thus up to a point, the lake or reservoir provides joint benefits and the house price differential includes the capitalized amenity value of living in a lake environment. When house lots or homes resell, the new buyers pay for this amenity value in the form of higher house prices. In a benefit-cost analysis this house price differential would reflect the amenity benefits of a water project. Thus the gain in property value would measure the amenity value to residents. This amenity value should be included as a project benefit as long as it has not already been counted through the recreation value to residents.

[3] This beneficial spillover due to the lake can be reduced if the operating regime at the lake increases emphasis on meeting irrigators' call for water or production of peaking power during the summer recreation use season. The increased water diversions may leave mudflats between the property and the lake that are both unsightly and makes recreation access to the water for boating and swimming difficult. If these increases in lake fluctuations occur during peak recreation seasons when property owners are present, this may reduce the desirability of lakeshore properties, resulting in a reduction in the demand for them. This reduction in demand would in principle be translated into a reduction in the house price premium paid for that property. In a benefit-cost analysis the gain in value from meeting seasonal demands for power or irrigation water would need to be compared to the loss in use value to the homeowners and visitors [*Cordell and Bergstrom*, 1993].

[4] The trade-off between hydropower and amenity values is of particular policy relevance when a private utility company's license to operate a hydroelectric project is up for relicensing by the Federal Energy Regulatory Commission (FERC). Under the Electric Consumers Protection Act of 1986 (16 U.S.C. 791a-825r) FERC must give equal consideration to power and environmental considerations when specifying conditions of a new or renewed license. There are over 20,000 FERC licenses expiring on dams and reservoirs during the next decade [*FERC*, 1993]. Many of these lakes/reservoirs have year-round or vacation properties located on the adjacent shoreline.

[5] The first purpose of the paper is to illustrate how the hedonic property method can be applied to address this question of the influence of lake level fluctuations on property values. The analysis reported here was performed for a private utility as part of this FERC relicensing analysis. The specific empirical issue addressed in this paper is whether variations in levels of Lake Almanor in California, had any statistically significant effect on property values and if so, what was the magnitude.

2. Hedonic Property Method (HPM)

[6] To quantify the change in property values due to changes in residential amenities, economists have developed the hedonic property method (HPM) [*Rosen*, 1974].

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The general theory behind the HPM, lies in differentiated consumer products. Houses are a single commodity that differ in environmental attributes at their location. Consumers compete for properties that vary in the number and quality of characteristics that are present at the site. Housing price differentials therefore reflect differences in housing characteristics.

[7] *Freeman* [1993] and *Taylor* [2002] present the basic hedonic property model based on a household production function view of a consumer maximizing utility from consumer product attributes, and a composite commodity representing all other goods. Maximizing utility subject to a budget constraint results in a consumer optimum where the marginal rate of substitution between the product attribute and the composite commodity is equal to the ratio of the implicit price for the attribute and the price of the composite commodity (which is usually normalized to one). Thus this consumer utility maximization process provides the conceptual foundation for the interpretation of the implicit prices of the attribute as the consumer's willingness to pay for another unit of the attribute.

[8] *Freeman* [1993, p. 371] provides a general specification of the first stage or hedonic price function as the price of a property as a function of its structural, neighborhood, and environmental characteristics, or

$$P_i = f(S_i, N_i, Q_i) \quad (1)$$

where P_i is price of property i, S_i is structural characteristics of i, N_i is neighborhood characteristics of i, Q_i is environmental quality characteristics of i. In this application, our environmental quality attributes is a measure of the lake level.

2.1. Functional Form Issues

[9] The simplest function form to empirically estimate equation (1) is linear:

$$P_i = Bo + B1S_i + B2N_i + B3Q_i. \quad (2)$$

In this model, the marginal implicit price of the characteristic ($\partial P/\partial Q$) is simply B3. Thus the linear model has easily interpreted and transparent marginal prices. However, the linear form has some draw backs of constant marginal implicit prices and assumes the consumer can repackage characteristics.

[10] Nonlinear functional forms for the hedonic price function avoid these restrictions and yield marginal implicit prices for a characteristic that depends on the level of that particular attribute and on the level of other characteristics as well. Candidate nonlinear models include the semilog transformation of the dependent variable and a more generalized Box-Cox transformations. The Box-Cox transformation makes the interpretation of the marginal values less intuitive as the attributes are raised to exponents and it makes calculation of the marginal values far more cumbersome [*Lansford and Jones*, 1995, p. 343]. *Cropper et al.* [1988] performed a simulation exercise comparing the accuracy of different functional forms against a known true function. They found that simpler functional forms such as linear and semilog transformation outperformed more complex functional forms in the face of omitted variable bias or use of proxy variables in place of theoretically correct variables [*Cropper et al.*, 1988]. The issue of appropriate functional form is still a lively area of research and a substantial literature on possible functional forms and merits of each has developed. The interested reader should see the works of *Taylor* [2002], *Palmquist* [1991], *Cheshire and Sheppard* [1995], and *Cropper et al.* [1988].

[11] It is likely that our empirical application shares some of the features mentioned by *Cropper et al.* [1988] that make simpler functional forms desirable. Specifically, because of multicolinearity among some of the housing characteristics, we are able to include only a subset of these, and hence the included ones act as proxies for related measures of housing attributes (e.g., bedrooms is omitted due to high correlation with baths and overall house size). On the basis of the argument of Cropper et al. we adopt a semilog model for our nonlinear functional form but retain the linear to provide a more directly interpretable measure of marginal willingness to pay from the regression coefficients as well as test the sensitivity of results to different functional forms. As shown below our results are not sensitive to choice of linear or semilog functional form. The semilog model is given by:

$$Ln(P_i) = Bo + B1S_i + B2N_i + B3Q_i. \quad (3)$$

In the semilog model, the marginal implicit price is given by:

$$\partial P/\partial Qi = B3^* P \quad (4)$$

2.2. Defining the Dependent Variable, Marginal Versus Nonmarginal WTP

[12] While the environmental amenity is related to the location of the immobile land, since most houses are permanently attached to the land, we refer to house price as the price of the fixed bundle of the house and the land, but include independent variables to control for differences in the house structure [*Freeman*, 1993, pp. 374–375]. That is, if the residential area is already developed, buyers desiring a particular location usually have to buy the house and the lot at one combined price.

[13] As noted above, in the multiple regression with house price (in dollars) as the dependent variable, the slope or regression coefficients on the house and lot locational characteristics measure the marginal willingness to pay of homeowners for a one unit change in the level of that characteristic. If a policy results in a large change (i.e., several units) in the environmental attribute the estimate of marginal willingness to pay from the regression coefficient will overstate the willingness to pay for large gains, and understate the willingness to pay to avoid large losses. This occurs because the regression coefficient is a point estimate on what is usually a nonlinear willingness to pay function [*d'Arge and Shogren*, 1989]. Extrapolating that point estimate to large changes in the quantity of the attribute is equivalent to assuming a horizontal demand curve or constant marginal value. However, like the demand curve for most goods, the demand curve for most attributes usually slope downward. This implies a diminishing marginal value for additional units of the environmental attribute and increasing marginal values for fewer units. To correctly estimate the willingness to pay for large

changes in environmental quality, requires a second step in the hedonic property analysis whereby one estimates a separate attribute demand curve [*Taylor*, 2002].

2.3. Identification Issues

[14] While the prices of the characteristics reflect both demand and supply influences, in the first stage analysis with disaggregate data it is not necessary to consider these supply influences if individual households have no power to influence prices of the attributes [*Palmquist*, 1991, p. 96]. Essentially, consumers are price takers in the housing market. This would be especially true in built out housing markets where the stock of houses are fixed. Thus an attractive feature of the first stage analysis is with information on housing characteristics and sale prices, the marginal implicit prices can be estimated for each characteristic [*Taylor*, 2002, p. 7]. Concerns about identification of demand and supply interactions are more critical in the second stage analysis when the analyst wishes to estimate the inverse demand function or marginal benefit curve for each attribute.

[15] When using the hedonic property method to estimate the willingness to pay for environmental quality in an urban area with substantial employment centers, there can also be a concern that environmental quality differences among locations can affect wage differentials as well as property value differentials. *Bloomquist et al.* [1988] developed a model and empirical example of this effect in the U.S. This interaction is ignored in our analysis as our case study site of Lake Almanor does not have significant employment opportunities, and is mainly a residential community of retirees and vacation homeowners.

2.4. Past Literature Applying Hedonic Property Method to Water Resource Management Issues

[16] There have been dozens of hedonic property studies, although relatively few relating to water quality [e.g., *Feenberg and Mills*, 1980; *Young*, 1984; *Steinnes*, 1992; *Boyle et al.*, 1999] (see *Boyle et al.* [2001] for a summary), and only one on whether lake level fluctuations have a statistically significant effect on property values [*Lansford and Jones*, 1995]. This study did find a statistically significant effect of lake level on house prices at Lake Travis in Texas.

2.5. Empirical Specification of Hedonic Price Function

[17] This general specification in equation (1) must be made specific to the particular application. Our initial empirical specification of the hedonic property model was based on the Freeman's stylized theoretical model (equation 1) and the only other application to lake levels, Lansford and Jones. In particular, our initial empirical specification was:

$$\begin{aligned}\text{Property Price} = {} & \text{Bo} + \text{B1(Baths)} + \text{B2(Bldg Size)} \\ & + \text{B3(Bldg Quality)} + \text{B4(Acres)} + \text{B5(Garage)} \\ & + \text{B6(Golf Course)} + \text{B7(Lake Distance)} \\ & + \text{B8(Lake Front)} + \text{B9(Lake View Only)} \\ & + \text{B10(Community Dummies)} - \text{B11(MintRate)} \\ & - \text{B12(Feet of Exposed Shore)} \qquad (5)\end{aligned}$$

where Property Price is the sale price of the property in year 2000 constant dollars, Baths is the number of bathrooms, BldgSize is square footage of the residence, BldgQuality is appraisers perception of the original quality of construction and current condition of the structure, Acres is the acres of land associated with the property, Garage is dummy variable for whether the property had a garage or not, GolfCourse is dummy variable for whether the property was located on a golf course, LakeDistance is distance the property was from the lake shore, LakeFront is dummy variable for whether the property was lakefront or not, LakeViewOnly is dummy variable for whether a non-lake front property had a view of the lake, Community Dummies is equal to one for Lake Almanor Country Club (LACCDUM) and Lake Almanor West (LAWESTDUM), as these areas offered additional social amenities not available in other communities, MintRate is Mortgage interest rate, Feet of Exposed Shore is number of feet of exposed shoreline of that property at the time of sale. The marginal implicit price of a characteristic is the partial derivative of the hedonic price function in equation (5) with respect to a marginal change in the attribute or "the additional amount that must be paid by any household to move to a bundle with a higher level of that characteristic, all other things being equal" [*Freeman*, 1993].

3. Data

[18] Data for the estimation consists of property transactions, property characteristics, and lake levels in the Lake Almanor, California area. Four series of data were collected to support the hedonic modeling effort: (1) sales and property characteristics data, (2) location data, (3) economic trend data, and (4) lake level data.

3.1. Sales and Property Characteristics Data

[19] Property and sales data were obtained from the Plumas County Assessor's office. This data was available from the Assessors Office in several databases which were combined into a single database which included Assessors Parcel Number (APN), address, community, sales date, selling price, number of rooms, number of bedrooms, number of bathrooms, garages, square feet, acreage, construction type, construction quality, condition, and view and lakefront characteristics. Not all of these variables could be used in the modeling because some of these variables were highly correlated (e.g., the variables for square feet, number of rooms, number of bedrooms and number of bathrooms). When explanatory variables are highly correlated they provide essentially the same information and inclusion of all of them increases the variances of the estimators. Thus in the analysis the correlated variables were dropped and just the number of bathrooms and building size were used in equation (5).

[20] The Assessors Office data were compiled for all sales which occurred in the Lake Almanor Area from 1987 to 2001. Only residential properties which sold during the study period were analyzed. Residential properties included cottages, summer homes, vacation homes, second homes, etc. Commercial buildings such as stores were excluded. The data were further limited by those for which building

characteristics were available. Because of the requirements of the regression model, only observations which have values for all of the explanatory variable can be used. This limited the analysis to 964 observations complete on all of the variables.

3.2. Economic Trend Data

[21] These data sets included inflation data, unemployment data and mortgage interest rate data. In essence, the economic data is used to eliminate the temporal influences so that the data can be pooled on an equivalent basis. This was necessary to permit the sales from the entire 14 years of historic data to be pooled and compared. The data is thus both time series (varying temporally) and cross-sectional (varying spatially around the lakeshore).

[22] The Consumer Price Index (CPI) was used to adjust all selling prices to a constant year 2000 dollar base. This adjustment removes the inflation effects from price consideration. All values discussed in this paper are in constant year 2000 dollars.

[23] The effects of differences in mortgage interest rates also influence selling price, with lower rates having a positive effect on selling price. That is, with lower rates, buyers can qualify for larger loans and this puts less pressure on buyers to negotiate a lower price, and for sellers to have to lower prices in order for buyers to qualify. The average annual mortgage interest rate for California was determined for each sale year and included in the HPM model to adjust for this effect.

[24] To correct for the effects of differences in the business cycle and their effects on housing prices, the California statewide unemployment rate was recorded for each sale year. Increases in the unemployment rate can be expected to decrease the selling price, other factors being equal because due to its proxy for recession and the fact that people do not usually buy second homes (e.g., vacation homes) during a recession. Unfortunately, the mortgage interest rate and unemployment rate were highly correlated, so we only included the mortgage interest rate in equation (5).

3.3. Lake Level Data

[25] Lake Almanor water level data were obtained for each day from 1987 to 2001. These lake level data were matched to the time of the house sale, and lagged 90 and 120 days from the recorded sale date. Using the topographic contours of the lakeshore bottom, the exposed feet of shoreline was calculated at the lake level at the two possible sale dates. We choose to use the feet of exposed shoreline (calculated for each specific property) at 90 days and 120 days prior to the recorded sale date because these dates reflected typical real estate closing periods. Thus the 90 day feet of exposed shoreline reflects the feet of exposed shoreline likely seen by the buyer just prior to deciding to purchase the property and thus initiate the transaction. The feet of exposed shoreline varies from area to area on the lake due to the topography of the lake bottom and distance from the dam. In addition, year to year variations in lake levels occur during the time period of our data, as this time horizon included several very dry years. To conserve space, regression results report the 90 day feet of exposed shoreline, but the statistical significance and marginal values for the 120 day time period are nearly identical and are available from the lead author.

4. Statistical and Property Value Results

4.1. Statistical Results

[26] To evaluate the robustness of our implicit price per foot of exposed shoreline, both linear and semilog regression equations were estimated. Both equations are identical in terms of independent variables. As reported in Table 1, the linear model has a higher explanatory power as measured by the adjusted R^2, of 0.62, while the semilog model's explanatory power is 0.45. These are respectable given the predominant cross-sectional nature of the data. Table 1 also shows regression coefficients. All but two of the linear model coefficients are statistically significant at the 10% level. In the semilog model, all but four of the coefficients are significant at the 10% level or higher.

[27] In terms of housing structure attributes, the signs of all the variables are consistent with theory. Larger houses, houses with garages and additional bathrooms all add to house price. The further the house is from the lake shoreline, the less it sells for. Houses on lakefront lots sell for substantially more than those that are not on lakefront properties. Living on a golf course adds $40,800 to the housing value, although much less than being on the lakefront ($209, 490).

4.2. Water Management and Policy Implications

[28] The feet of exposed shoreline has a negative sign and is statistically significant at the 1% level in the linear model and 5% level in the semilog model, indicating this disamenity reduces house prices.

[29] With the linear model, the regression coefficients themselves can be interpreted as the marginal implicit prices for the attributes. Thus each additional foot of exposed shoreline reduces the property price by $119.44. With the semilog model, the implicit price is calculated by multiplying the coefficient by the house price [*Taylor*, 2002]. For our mean house value of $187,400, the semilog hedonic equation yields a marginal value of $108.32 (.000578 × 187,400). The implicit price from the semilog model is just 10% less than the linear. These implicit prices are not statistically different. That is, the 90% confidence interval on the linear model is $60–178, while it is $36–$180 for the semilog model. These confidence intervals substantially overlap.

[30] As is evident from the confidence intervals, the implicit prices are not estimated as precisely as one might like despite the fact that we have over 900 observations. Thus, while there is a statistically significant effect of lake level on house prices at Lake Almanor, the magnitude of the effect is not known with precision. To put this in perspective, an additional ten feet of exposed shoreline could have an effect as little as $360 on a house price or as much as $1800. At the upper end of the 90% confidence interval this represents about 1% of the price of a typical house in Lake Almanor. When aggregated over the 3,950 houses in the Lake Almanor area, an additional 10 foot of exposed shoreline would result in estimates of $1.4 million to $5.9 million in lost amenity value to residents.

[31] In an economic efficiency analysis or what federal water resource agencies call a National Economic Devel-

Table 1. Hedonic Property Regression Results for Lake Almanor, California

Variable	Linear		Semilog	
	Coefficient	T Statistic	Coefficient	T Statistic
Constant	300696.5	11.14[a]	13.19786	74.69[a]
ACRES	20664.49	1.94[b]	0.098050	1.41
BATHS	26303.64	4.03[a]	0.108459	2.54[a]
BLDGSIZE	18.65774	2.99[a]	4.66E-05	1.14
LAKE DISTANCE	−203561.8	−2.24[b]	−1.076291	−1.81[c]
LAKEDISTSQ	251457.3	1.44	1.378780	1.21
FEETEXPSHORE	−119.4391	−3.32[a]	−0.000578	−2.46[a]
GARAGE	15338.34	2.14[b]	0.110452	2.36[b]
GOLFCOURSE	40803.33	2.97[a]	0.445598	4.95[a]
LACCDUM	8691.889	1.02	0.062107	1.12
LAWESTDUM	68034.02	5.87[a]	0.255696	3.37[a]
LAKEFRONT	209489.5	18.04[a]	0.995514	13.10[a]
MINTRATE	−2879803.	−11.44[a]	−17.78598	−10.79[a]
BLDGQUALITY	5.162968	1.63[c]	−4.00E-05	−1.93[b]
LAKE VIEWONLY	31007.31	3.98[a]	0.256732	5.03[a]
Sample Size	964		964	
Adjusted R^2	0.625		0.446	
F statistic	115.1[a]		56.28[a]	
Mean Dependent Variable	$187, 400		$187, 400	
Marginal value of a one foot change in exposed shoreline	$119		$108	

[a]Significant at the 1% level.
[b]Significant at the 5% level.
[c]Significant at the 10% level.

opment (NED) analysis, this loss in amenity value would need to be balanced by the present value gain in hydropower value, for the lake drawdown to be economically efficient. Specifically, the conceptual foundation of benefit-cost analysis involves a comparison of net willingness to pay of competing users of a resource. The hedonic property method measures the net willingness to pay of residents for the amenity, a full lake level. The alternative use of the water in our case study is hydropower production during summer peak demand for electricity. Since producing peaking power using hydropower has very low marginal cost of production compared to fossil fuel power plants, hydropower results in cost savings to society. This resource cost savings is a benefit to society. Whether it is realized as lower electricity prices to consumers (i.e., consumer surplus) or retained by utilities in the form of producer surplus, has to do with the regulation and market structure of the electricity industry in that area.

5. Conclusion

[32] The hedonic property method detected a statistically significant difference in-house prices around Lake Almanor, California due to differences in feet of exposed shoreline. This statistical effect was robust to linear versus nonlinear functional forms of the hedonic regression. While the effect was statistically significant, the mean estimates of $108 to $119 per foot of exposed shoreline is less than one percent of the house value. However, using the 90% upper limit of the confidence interval, a 10 foot increase in exposed shoreline would reduce the average house price in Lake Almanor by 1%. This 10 foot increase would represent about a 5% increase in the current feet of exposed shoreline over our period of study. Thus residents' concern over additional shoreline exposure from increased peaking power operations is a valid concern. From the standpoint of economic efficiency the utility and the Federal Energy Regulatory Commission would need to balance the gain in hydropower from the additional drawdown versus the loss to residents. Of course, the typography of the bottom of Lake Almanor may be different than other lakes. Shallower lakes would result in more feet of exposed shoreline for a given reduction in lake elevation, and would make it less likely that large declines in lake levels to provide hydropower or irrigation withdrawals would be economically efficient. The optimum lake level to maintain would also depend on the net benefits of the withdrawn water. Since hydropower usually has a higher value per acre foot than irrigated agriculture, it may often be economically efficient to maintain higher lake levels at reservoirs without hydropower that serve irrigated agriculture. In any case, this study demonstrates the utility of the hedonic property method to test for, and monetize the amenity effects associated with lake drawdown from any number of water management actions, whether hydropower or water supply withdrawals.

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M. Feldman, Resource Decisions, 934 Diamond Street, San Francisco, CA 94114, USA.

J. Loomis, Department of Agricultural and Resource Economics, Colorado State University, Fort Collins, CO 80523, USA. (jloomis@lamar.colostate.edu)

ATTACHMENT 10

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Monday, March 23, 2015 4:35 PM
To: Walter, Hanspeter
Subject: Fwd: Need Help

Good Afternoon Hanspeter, I will be forwarding some emails regarding economic impacts to our area if 2105 alternatives take place. This one is from the Hospital District. - Sherrie

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Linda Wagner** <lwagner@senecahospital.org>
Date: Mon, Mar 23, 2015 at 3:36 PM
Subject: RE: Need Help
To: Sherrie Thrall <sherrie.thrall@gmail.com>

Sherrie,

Hope you had a good weekend. Here is a brief summary for us.

SHD is a district hospital, thus we rely heavily on tax funding. The amount of money we receive in taxes helps to keep us solvent, without it we would not be able to recognize a positive or "break even" net income. As it is we struggle for a positive net income with the approx. amount of $185,000- $200,000 a tax period we do receive. We have also realized a decline in the tax base over the years, any further decrease of this income source would seriously jeopardize our ability to provide health care in the community.

Secondly because we are a "seasonal" community, we also rely on the increase in population during the summer to support us through the financially unstable winter months. Our summer months carry us financially through the negative winter month cash flow issues.

SHD is very much dependent on Lake Almanor and the ability to bring in population to support the health care service provided to the community both seasonally and on a permanent basis, without Lake Almanor, access to healthcare in this area could be put at risk.

Hope this helps.

Linda

Linda Wagner MHA/MSN, FACHE

Chief Executive Officer

Seneca Healthcare District

PO Box 737

Chester, CA 96020

lwagner@senecahospital.org

O-530.258.2067

F-530.258.2068

C-530.310.2150

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Monday, March 23, 2015 4:36 PM
To: Walter, Hanspeter
Subject: Fwd: Help Needed

This from the fire district in Chester. - Sherrie

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Joe Waterman** <joewaterman.cpud@frontier.com>
Date: Mon, Mar 23, 2015 at 3:16 PM
Subject: RE: Help Needed
To: Sherrie Thrall <sherrie.thrall@gmail.com>

Greetings!

As far as Chester is concerned, any degradation that affects property values will negatively affect our capability to fiscally provide the level of service that we currently provide. To further erode our tax base would require an adjustment in services provided with our fire response, which would negatively impact our Insurance Services Organization (ISO) rating. This would increase the cost of property insurance to the citizens of our district further compounding the ability to afford to live in the area. We already have a significant amount of funding unavailable to us via tax base and assessments due to the default of property owners and cannot afford any impacts that would increase the default rates that we are experiencing. The provision of other essential services provided by our District (Water delivery, Wastewater treatment, Solid Waste Management and Streetlight provision) would suffer similarly.

Our fire and ambulance services rely heavily on volunteer firefighters to operate effectively. Any impact, such as reduced tourism, increased cost of living, loss of employment opportunities, etc., that discourages population growth and encourages population decline will have a drastic effect on Chester Public Utility District to provide the services that this community demands and deserves.

I hope that this brief synopsis helps, and thank you for the job that you do for us!

Joe Waterman

General Manager / Chief

Chester Public Utility District

Chester Fire Department

Plumas County OES Operational Area Coordinator

(530) 258-2171 Office

(530) 816-0923 Cellular

joewaterman.cpud@frontier.com

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Monday, March 23, 2015 4:38 PM
To: Walter, Hanspeter
Subject: Fwd: Save Lake Almanor

Info from Bailey Creek Golfcourse. - Sherrie

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Jennifer Hughes** <jennifer@baileycreek.com>
Date: Mon, Mar 23, 2015 at 11:10 AM
Subject: Re: Save Lake Almanor
To: Sherrie Thrall <sherrie.thrall@gmail.com>

Dear Sherrie Thrall,

With regards to Bailey Creek Golf Course, here is what we came up with:

We do 18,000-20,000 rounds of golf each season.
Less than 20% of our business is from the local population meaning more than 80% comes from out of the area.
What we have seen through our golf and cottage bookings, most of that 80% are here for recreational purposes in addition to golf. (Fishing, boating, hiking/walking, biking, etc)

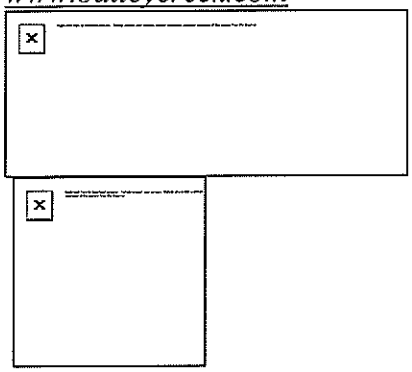
These activities are all centered around Lake Almanor and it is a delicate balance business wise. We have a very small window to succeed. Just a 20% drop in business results in an $300,000-$400,000 loss. When the fires happened a couple years back, we lost the whole month of August which impacted our winter months and next year's opening greatly. Since we're seasonal due to snow, we need to make the most of our summer months so we can carry that cash through the winter months. Our bills and responsibilities never stop.
We are scheduled to open again April 10th. We have employees coming back, clubs, clothing, food and beverage stock arriving and very little cash flow to get started. We usually don't catch up until July.

I am certain that we are not the only business in the Almanor area that faces these challenges. We are family owned and operated and work very long hours to make this happen.

Please let me know if we can do anything further to help you. Thank you so much for all you're doing! I just hope they listen!

Jennifer Hughes

Bailey Creek Golf Course
433 Durkin Drive
Lake Almanor, CA 96137
Golf Shop: 530.259.GOLF
Winter Office: 530.343.PUTT
www.baileycreek.com



February 4, 2015

Wilson's Camp Prattville Resort
2932 Almanor Drive West
Canyon Dam, CA 95923

Mr. Peter Barnes, Engineering Geologist
State Water Resources Control Board
P.O. Box 2000
Sacramento, CA 95812-2000

Dear Mr. Barnes:

The purpose of this letter is to express our absolute opposition to the Water Board staff recommendation in the draft Environmental Impact Report (Federal Energy Regulatory Commission Project 2105 – Upper North Fork Feather River Hydroelectric Project). As the owners of a small, family operated resort located on the west shore of Lake Almanor (directly in Prattville by the intake tower), we can unequivocally state that the Thermal Curtain will force our business to close. We find it extremely difficult to imagine that our 87-year old business, which has survived the Great Depression, World War II, Vietnam, and countless other economic tragedies, could actually see its' demise through something as trivial as an experimental model of a Thermal Curtain. A proposed project which would take 50% of the cold water from Lake Almanor for a potentially unverifiable and unaccountable one degree temperature drop at Rock Creek/Cresta at a cost of $51 Million initial and unknown millions in maintenance cost to be funded solely by taxpayers.

Our question is, who is accountable for the loss of our income when 90% of our patrons (25,000/year) come to our resort primarily for large rainbow trout fishing? There is no doubt that the entire cold water species and habitat, not to mention other birds and mammals who feed on them, will be immensely impacted by the proposed project, if not extinct. It is important to note that Lake Almanor temperatures noted in the EIR report are 15 years old, as are the lake depth levels. At its current level, the lake is only about 25 feet deep which means that taking 50% of the lake's cold water equates to taking 100% of the cold water (based on stratification layers). The entire food web of trout, bass, salmon, catfish, perch, pond smelt, mayflies, chironomids, midges, crayfish, and so on will be thrown completely out of sync. The real uniqueness of the Lake Almanor fishery is the fact that the fish grow so large in the cold water. It is this uniqueness (large trophy fish) that has led people to visit our resort and Lake Almanor in general. There will be no going back when the projected temperature drop does not occur. The lake will die off as one of the best stillwater trophy fisheries in the United States.

Visually, the Thermal Curtain will be an eye sore as it will extend 14 acres into the lake with approximately 250 yards from our property. Many of our guest from around the world come and stay with us for this unobstructed view of Lake Almanor and Mount Lassen. When first generation, Frank Wilson, had the opportunity to purchase land on the West Shore, he specifically chose Prattville for its unmatched beauty and potential attractiveness to tourists and guests. He could have purchased almost

anywhere around the lake, yet he chose Prattville, where our resort is still located 87 years later. The visual impacts of the Thermal Curtain also extend far beyond the 14 acres of its size and environmental destruction, as it would also financially impact, if not destroy, our small business with tourists and guests driven away due to its unsightliness.

The financial impacts will be catastrophic, not only to our small family business (which will not make it to our three sons, Kenneth C. Wilson, Cody T. Wilson, and Calvin M. Wilson – the fifth generation), but also to the entire county in the form of employment, payroll taxes, occupancy taxes, sales tax, etc. Tourists will seek other places to fish and recreate and ultimately, our business and many others around the lake will cease to exist. We find it hard to believe that the Water Board can recommend the degradation of Lake Almanor, which is visited by several hundred thousands of people each year as compared to the potential increase in cold water species in a location that is difficult to access and visited by probably less than a few hundred people each year. This simply does not make good sense any way it is looked at. We plead you to consider more carefully other less disruptive options to the natural environment, such as habitat restoration or Freon cooling stations downstream, as opposed to the harsh realities of an experimental idea with zero accountability. The Thermal Curtain does indeed represent "significant impact" and must be addressed as such. Without a proper cost estimate and cost-benefit analysis with updated figures, the Water Board's decision seems random, unjustified, and heartless.

Sincerely,

Carol Wilson Franchetti (Owner)
Kenneth A. Wilson Jr. and Debbie Wilson (Resort operators)
Kenneth C. Wilson
Cody Wilson
Calvin Wilson
Kenneth A. Wilson Sr. and Karen Wilson

March 21, 2015

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

Dear Sherrie Thrall:

In response to your request, Wilson's Camp grosses approximately $200,000/year and serves approximately 5,000 guest per year. While ninety percent of these guests come to our resort for the cold-water lake trout fishing, they also spend their money on local restaurants and businesses during their stay. In addition to the gross figures above, we also pay Plumas County occupancy tax of about $10,000/year. Our business will be affected the most since we are directly adjacent to the proposed Thermal Curtain site. It will negatively impact our view of Lassen, prevent boating and fishing near our resort, and be used as a dumping ground for the excavated mud, affecting overall water quality. All of the environmental issues (see our company letter in regards to the EIR report attached) affect our business from an economic impact as well.

Please put our financial concerns on file as well as a copy of our February 2015 letter send to the Water Board, as it also clarifies many economic impacts too.

Sincerely,

Ken/Debbie/Kenny/Cody/Calvin Wilson

LAKE ALMANOR BROKERS
Full Service Real Estate Co.
www.LakeAlmanorBrokers.com

Phone: 530-596-3303
Fax: 530-596-3330
E-mail: lakealmanorbrokers@yahoo.com
452 Peninsula Drive Lake Almanor, CA 96137

March 25, 2015

Dear Mr. Walter:

Thank you for discussing the findings of the SWCB Draft EIR for the North Fork Feather River hydroelectric project with me via telephone. I would like to address how important recreational fishing is to the local real estate industry. It is paramount in both property values and in the vacation rental arena.

My company currently represents over 50 homeowners in a seasonal property management program. In 2014, our vacation rental trust account had almost $950,000 run through it, in the form of rental income. Of that gross dollar amount, a 9% Transient Occupancy Tax is paid to Plumas County, which is quite a bit of revenue from just my company alone. There are at least five other local brokerages handling vacation rentals as well. Of the 1000's of tourists that occupy these homes, I would say that at least 80% of them participate in fishing at Lake Almanor in some capacity. They come here because Lake Almanor is largely considered one of the top trophy trout lakes in all of California. If the fishery is altered in any way, the tourist industry will be critically affected. The vacation rental program would be crushed and the existing real estate values would potentially suffer great losses.

Last year alone, over $60,000,000 of improved real estate was purchased in the Almanor Basin. All of these purchases were made with the thought of owning a home at a lake that has prolific trout fishing, clean lake water for recreation, and a viable economy supported by tourism. An altered Lake Almanor would severely damage the values of local real estate values.

I hope this emphasizes how vital the condition of Lake Almanor is to real estate values, property owner income, vacationing interests, local economy and Plumas County revenue. Please include my letter as an attachment if you wish. Thank you for your efforts.

Respectfully,

Jay Sabelman
Lake Almanor Brokers
530-596-3303
saborama@yahoo.com
BRE#01315308

6158 Shadowbrook Drive
Granite Bay, California 95746
cespana@surewest.net

España
Consulting
Associates

March 20, 2015

Ms Sherrie Thrall VIA EMAIL **sherrie.thrall@gmail.com**
Plumas County Supervisor
Quincy, CA

Dear Ms Thrall:

From 2000 to 2012, we rented our Lake Almanor Country Club cabin to renters during the summer. On average we rented to 10 families per year with an occupancy limit of 8 persons per week.

In discussions with renters, invariably they listed boating and fishing as their two primary reasons for renting in Lake Almanor. We had several repeat annual renters who taught their children how to fish during their first visit and kept up the annual tradition of fishing in subsequent years.

The draw of Lake Almanor to visitors is varied but for most families it centers on traditions like fishing and boating.

Sincerely,

Carlos España
Owner
1304 Peninsula Drive
Lake Almanor, CA 96137
916-416-7970

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Monday, March 23, 2015 5:12 PM
To: Walter, Hanspeter
Subject: Fwd: Save Lake Almanor

This from one of our smaller resorts on the east shore. - Sherrie

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Rob Hart** <rob@womackent.com>
Date: Fri, Mar 20, 2015 at 6:47 AM
Subject: Save Lake Almanor
To: sherrie.thrall@gmail.com

Knotty Pine and Rooms at 412 have approximately 650 visitors and about 60 % come to fish.

Rob Hart
Knotty Pine Resort

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Monday, March 23, 2015 5:14 PM
To: Walter, Hanspeter
Subject: Fwd: Thermal Curtain at Lake Almanor

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Kim Jergentz** <kimjergentz@yahoo.com>
Date: Mon, Mar 23, 2015 at 5:12 PM
Subject: Thermal Curtain at Lake Almanor
To: "sherrie.thrall@gmail.com" <sherrie.thrall@gmail.com>

Hello Ms. Thrall:

I read the article in the Progressive this weekend and wanted to comment about the prospect of this thermal curtain actually happening to the basin.
I am a homeowner on the Peninsula, I rent my property during the "peak season" and I am a real estate agent with Coldwell Banker DuFour Realty in Chico, Ca. I grew up in Chester and I have an extreme fondness for the area, the Lake and all it has to offer. Being from Chester I am keenly aware of the economic impacts that the town has endured over the course of the last 20 yrs. Collins Pine WAS the main employer, Stover Mountain WAS a local ski destination and Seneca Hospital WAS one of the best facilities in the area. As you are aware, NONE of these conditions exist today therefore causing the local Business Community to try to reinvent the area as a sports fishing/recreation/snow mobile area for year round enjoyment. The Chamber has spent tireless hours marketing the area all over the State including the Bay Area and the Reno/Tahoe areas as well.
This effort seems to be working as many of my renters come from the Reno or Bay areas and come back year after year to enjoy the Lake and all the amenities. My pool of renters are REPEAT people who rent every year, usually the same time of the year --- and they call me, not the other way around.
If this thermal curtain happens then it will ruin the town and it's ability to maintain any type of status as a premier recreation area. The immediate effect it will have on the real estate is hard to determine: except the real truth is it will render most of the Lake front properties virtually worthless --- , inventory will be at an all time high and people (like me) who have owned their properties for years and hoped to pass it along to their children wouldn't have anything of value to leave them. All I can think of is ClearLake.....and there's nothing Clear about that Lake !! The algae blooms, the "greenish" color of the water and the lack of native fish/birds/other wildlife will be devastating to the entire basin.
Please don't let this happen.....

Most sincerely,

Kim Jergentz

Kim Jergentz
KimJergentz@yahoo.com

Direct: (530) 896-3157
Office: (530) 895-1545
Cell: (530) 520-6618
FAX: (530) 343-8233

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Monday, March 23, 2015 5:17 PM
To: Walter, Hanspeter
Subject: Fwd: Economic Impact of Thermal Curtain on my restaurants

This from one of the most successful resort/restaurant owners in the area.

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **carol** <carolscafe1@earthlink.net>
Date: Thu, Mar 12, 2015 at 2:26 PM
Subject: Economic Impact of Thermal Curtain on my restaurants
To: Sherrie <sherrie.thrall@gmail.com>

Dear Sherrie, I received your request for information regarding what would happen to my business if the thermal curtain is built. As you know, our family resort will be most impacted as we are the closest to the proposed curtain.
Last year, my restaurant in Prattville grossed $235,860. We served over 25,000 guests and of that number, about 30% are full time residents of the area. If the thermal curtain goes through, I would have to shut down as about 70% of my guests are here for the fishing or boating. With no view, the locals would not come either. With the few people left, I could not earn enough to pay liability insurance, payroll taxes, or workman's comp. It would be a sad end to the 44 years I have spent at Prattville providing food for guests and payroll to the Lake Almanor area.

My Chester restaurant is open year around and have a larger percentage of local business. However, sales are extremely slow in the winter and I would say that business from out of the area here to fish and recreate is about 50%. My sales for last year were $217,123.

Lastly, you did not ask but I think it is vitally important, $197,990 in gross payroll went out into the community. They spent their dollars at local grocery stores, gas stations, restaurants, and bars. If I close down, 17 to 25 people will be out of work, most of whom have children.

These figures do not reflect Kenny's income for the campground. He will be sending it to you separately. Thanks so much for doing all you can to head off this grievous injustice to our beautiful Lake Almanor. Sincerely, Carol Franchetti

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 1:42 PM
To: Walter, Hanspeter
Subject: Fwd: Save Lake Almanor Letter on Visitors Fishing
Attachments: Espana thermal 0218.pdf

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Carlos Espana** <cespana1304@gmail.com>
Date: Sat, Mar 21, 2015 at 5:39 PM
Subject: Save Lake Almanor Letter on Visitors Fishing
To: sherrie.thrall@gmail.com

Attached is my letter documenting visitors preferring fishing as part of their vacations at Lake Almanor.

I didn't exactly state a % in the letter but I would estimate it at 80 percent for the 80 renters we had per year.

Best of Luck

--
Carlos' Home Email

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 1:41 PM
To: Walter, Hanspeter
Subject: Fwd: Save Lake Almanor

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **lewis campbell** <soupfin@gmail.com>
Date: Sat, Mar 21, 2015 at 3:54 PM
Subject: Save Lake Almanor
To: sherrie.thrall@gmail.com

This is in response to your request for the number of visitors we have who fish. I have been coming to the Chester area since 1948 (66 yrs.) and have been a property owner in LACC since 1992. We normally spend about six months each year at our home up there. I would estimate my time fishing from a boat and shore about 40%. Regularly we have about 10-12 visitors per year 75% of whom fish. I realize our numbers are not huge but I feel compelled to help halt the installation of the " thermal curtain ". Thanks for the opportunity to participate.
Clifford King

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 1:41 PM
To: Walter, Hanspeter
Subject: Fwd: Save Lake Almanor

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **markhscott** <markhscott@yahoo.com>
Date: Sat, Mar 21, 2015 at 8:20 AM
Subject: Save Lake Almanor
To: sherrie.thrall@gmail.com

Hello, we have approximately 30 visitors a year, who all come to Lake Almanor to fish. Thanks, Mark Scott

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 1:40 PM
To: Walter, Hanspeter
Subject: Fwd: Save Lake Almanor

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Rob Hart** <rob@womackent.com>
Date: Fri, Mar 20, 2015 at 6:47 AM
Subject: Save Lake Almanor
To: sherrie.thrall@gmail.com

Knotty Pine and Rooms at 412 have approximately 650 visitors and about 60 % come to fish.

Rob Hart
Knotty Pine Resort

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 1:39 PM
To: Walter, Hanspeter
Subject: Fwd: thermal curtain

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Jim Newell** <jim@intermountainenterprises.com>
Date: Thu, Mar 19, 2015 at 2:24 PM
Subject: thermal curtain
To: sherrie.thrall@gmail.com

I am the CFO of intermpuntain Emterprises, LLC. We have two businesses in Chester that will be wconocally effected drastically by the thermal curtain, Intermountain Hardware & Supply and Chester Paint Centet. The two businesses are located in the Historic Ayoob's building which has been doing business continually since 1946.

We sell fishing licenses, bait and equipment. We could suffer a $250,000 loss in business just in the sporting goods department.

People buy paint to keep their rental investment properties looking good.

Last year we had $1,254,000 is sales. We could lose half of that which would cause us to go bankrupt. Five families derive aiving from our company they wouldn't be put out of work.

This needs to be stopped at all costs

--
Jim Newell
Vice President & CFO
Intermountain Enterprises, LLC
Cell 530-515-1896

Walter, Hanspeter

From: Sharon Thrall <sherrie.thrall@gmail.com>
Sent: Wednesday, March 25, 2015 5:57 PM
To: Walter, Hanspeter
Subject: Fwd: Follow-up letter written earlier.

Copy of letter written by local business owner.

Sharon (Sherrie) Thrall
Supervisor, District 3
PLUMAS COUNTY

Sent from my iPad

Begin forwarded message:

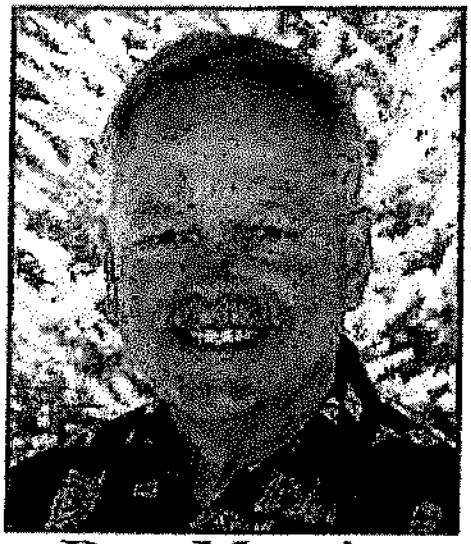
> **From:** Ron Martin <ronmartin@ronmartinrealty.com>
> **Date:** March 25, 2015 at 4:56:29 PM PDT
> **To:** <Peter.Barnes@waterboards.ca.gov>, <sherrie.thrall@almanorpost.com>
> **Subject: Follow-up letter written earlier.**
>
> Dear Board Members,
>
> I neglected to mention in my previous email that I have been selling real estate in the Lake Almanor Basin for the last 36 years and manage vacation rental properties producing revenues to property owners and to Plumas County to the tune of $300,000 gross revenues annually benefiting the County of Plumas by $27,000 annually in TOT (Transient Occupancy Taxes) or 9% of the gross revenues. We also own and R.V. Park and provide additional revenues to the county from that, plus we own a Lodge which produces more income plus my Real Estate Office producing $5,000 to $10,000 annually to the county for documentary transfer taxes paid. All 4 of these businesses are 95% supported by fishermen and women and vacationers. If the Thermal Curtains are put into place, all 4 of my businesses would be wiped out and I would be forced to leave the area and close my businesses.
>
> That is the reason that I have such a major interest and concern about the demise of Lake Almanor. I have sold most of the small businesses in the area over the last 36 years and I can tell you that none of them would survive if Lake Almanor was ruined. These include gas stations, restaurants, shops, convenience stores, resorts. This does not even mention the devastation to property values. If there were no Lake Almanor for recreation and may I say that it is the best in the West and arguably the best anywhere all the properties would be valueless and the area blighted.
>
> Another major consideration of any negative experimental modification as to the Lake water quality would have a ripple effect all the way to Los Angeles and everywhere in between. Lake Almanor being the headwaters of the Feather River Project and the California Aqueduct. With pollution in the headwaters, how will that affect the water quality in Oroville and Los Angeles? That project was completed in 1969 I believe.

Rights to the management of the water in Lake Almanor were granted to the Great Western Power Company in 1979 for power production by the Federal Government in 1917, Guy Earl was the president at the time and the lake was named after his 3 daughters Alice, Martha and Eleanor thus AlMaNor or Almanor. Those rights were sold subsequently to PG&E under a leasing agreement with the oversight of FERC. Any requirements made on PG&E by the State requiring profound revenues is austensibly a tax on the residence of the state if PG&E is allowed to raise their rate schedule (unfair taxation). Please don't allow any undue "tax" to increase profits for PG&E or undue modification to our lake!

Any modification to Lake Almanor should be CAREFULLY considered for the protection of the entire State and any representative of the people has a fiduciary responsibility of this utmost care! Please be that careful and don't take unnecessary risks with our and our children's and grand children's future.

Sincerely,

Ron Martin



Ron Martin
Owner/Broker
DRE# 00621084

RonMartin REALTY
317 Main St. | PO Box 1099 | Chester, CA 96020
530-258-3000 Office
800-444-8004 Toll Free
530-258-4160 Fax
530-258-1400 Cell
E-mail: RonMartin@RonMartinRealty.com
Website: www.RonMartinRealty.com

Visit Us At The Time And Temp Sign
Don't Miss Our Live Chester Cam Online

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 1:36 PM
To: Walter, Hanspeter
Subject: Fwd: Curtain Economic Impacts

This is a huge issue with our local realtors. They feel the need to disclose the potential adverse impacts of the SWRCB actions relative to 2105. They tell me this is causing potential buyers to rethink their position.

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Bridget Johnston** <biddyj@aol.com>
Date: Wed, Mar 18, 2015 at 4:41 PM
Subject: Curtain Economic Impacts
To: sherrie.thrall@gmail.com

Hi, Sherrie.

Saw your request for info on potential economic impacts of the thermal curtain on the surrounding Lake Almanor communities and thought of an impact mentioned during the last go round of this curtain fiasco that I haven't seen mentioned this time:

The realtor's association stated then that they were having to disclose the possibility of a thermal curtain to potential buyers as a known negative about Almanor properties.

Perhaps Wendy would have more on this.

Go get 'em!

Bridie Johnston

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 1:33 PM
To: Walter, Hanspeter
Subject: Fwd: Save Lake Almanor

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **JUDY MAAS** <jsjemaas@msn.com>
Date: Wed, Mar 18, 2015 at 2:05 PM
Subject: Save Lake Almanor
To: "Sherrie.thrall@gmail.com" <sherrie.thrall@gmail.com>

Sherrie,
Thank you for your efforts to save Lake Almanor.
Here's my family's impact on the Lake Almanor community:

My family represents those who travel to Plumas County annually to vacation. We have done so for over 50 years. We have our two weeks reserved for a home on Lake Almanor and are looking forward to July.

Every year we have left several thousand dollars in the communities around Lake Almanor, from Greenville to Westwood to Quincy. We give to Holiday Market, Peninsula Market, Lassen Drug Store, Ace Hardware, restaurants in Prattville, Chester, Lake Almanor peninsula, the gas stations, Bailey Creek golf course, LACC golf course, Lake Almanor West golf course, the shops and galleries in Chester, the Chester Library through their book sale. We've rented boats and bikes.
We've donated to churches, the Fireworks campaign, and Seneca Hospital.
And we're about to help save the Olson Barn.

We are happy to contribute to a county that has given our family many, many enjoyable experiences. And we hope that Lake Almanor is saved so that we can continue our annual trip.

Sincerely,
Judy and John Maas
Salem, Oregon

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 1:32 PM
To: Walter, Hanspeter
Subject: Fwd: Lake Almanor economic impact letter

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Jane Janssen** <janej777@sbcglobal.net>
Date: Tue, Mar 17, 2015 at 7:15 PM
Subject: Lake Almanor economic impact letter
To: "sherrie.thrall@gmail.com" <sherrie.thrall@gmail.com>

To Sherrie Thrall: Thank you for your concern about our beautiful lake. Here is my letter:

March 17, 2015

Hal Janssen
687 Peninsula Dr.
Lake Almanor, CA

Plumas County Supervisor
Sherrie Thrall

To All it may concern:

I a professional fly fisherman, I am not a guide, I am an instructor. Lake Almanor is large part of my livelihood. I have about 100 visitors a year to Lake Almanor, 100% of my quests come for the purpose of fishing Lake Almanor, Butte Valley Reservoir and the surrounding areas. Many of the people I instruct rent homes, camp sites or hotel rooms, they shop at the grocery stores, gift shops, eat at the local restaurants. Frequently I see them return to the lake with additional friends or family members. The town of Chester's economy thrives on tourism. Lake Almanor is the major factor in bringing visitors to the area. Without the cool clear water, the algae bloom would destroy the organisms in the lake, most of the fish species would die as a result. The town of Chester and the surrounding areas will then suffer a huge economic loss.

Thank You for your attention to the health of our Lake
Hal Janssen

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 1:32 PM
To: Walter, Hanspeter
Subject: Fwd: Visiting Lale Almanor

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: <jjaitken@comcast.net>
Date: Tue, Mar 17, 2015 at 5:54 PM
Subject: Visiting Lale Almanor
To: sherrie thrall <sherrie.thrall@gmail.com>

Sherrie Thrall,
We applaud your efforts to Save Lake Almanor. Our family of 10 plus friends have been enjoying the diverse activities offered by the lake including fishing for over 40 years. We usually stay for 2 to 3 weeks in various homes which form the base camp for our summer vacation. We view any major changes such as the Thermal Curtain as a major negative which could impact the enjoyment of our traditional vacation.

Let us know if there is anything we can do to support your efforts.

Last year we obtained a projection of the lake elevation for July and August. Are you aware of such a projection for this year?

Thanks for your support.

Jack and Joan Aitken

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 1:30 PM
To: Walter, Hanspeter
Subject: Fwd: Opposed to Water Board EIR - Lake Almanor, CA

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Caryn Schulman** <ckschulman@att.net>
Date: Fri, Mar 20, 2015 at 2:26 PM
Subject: Opposed to Water Board EIR - Lake Almanor, CA
To: "peter.barnes@waterboards.ca.gov" <peter.barnes@waterboards.ca.gov>
Cc: "sherrie.thrall@gmail.com" <sherrie.thrall@gmail.com>

Mr. Peter Barnes,

I am a homeowner in Lake Almanor California and I am deeply saddened by the State Water Board staff's recommendation in the draft EIR to construct THERMAL CURTAINS at Prattville in Lake Almanor and Caribou intake at Butte Valley Reservoir. I have read numerous articles about the proposed plans and I am appalled to hear that the "Only" significant impact would be to the Aesthetics! I know these plans would have a severe impact to the Lake Almanor environment and destroy our beautiful lake. Why does it make sense to wreck one environment to TRY to make another one better? The State Water Resources Control Board has used outdated science, poor analysis and bad judgment. It just doesn't make any sense and I am in complete opposition to the draft EIR.

Please do not continue on with the recommendations in the draft EIR. This would ruin our way of life and the beautiful place we call paradise!!

Most Sincerely,

Caryn Schulman
544 Ponderosa Drive
Lake Almanor, CA 96137
ckschulman@att.net
(530) 596.6284

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 1:29 PM
To: Walter, Hanspeter
Subject: Fwd: Fishing visitors

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Bruce Brown** <bhbrown1@juno.com>
Date: Fri, Mar 20, 2015 at 11:46 AM
Subject: Fishing visitors
To: sherrie.thrall@gmail.com

Sherrie,

We have at least 25 visitors per year who come to fish.

Bruce Brown

1339 Lassen View Dr. LACC

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 1:12 PM
To: Walter, Hanspeter
Subject: Fwd: visitors

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Deborah Ebert** <ebert5@aol.com>
Date: Thu, Mar 12, 2015 at 6:24 PM
Subject: visitors
To: sherrie.thrall@gmail.com

Hello Sherrie,

We have 30 visitors a year and 25 fish.

We also have a family tradition where some members of our family swim across the lake from the Point to Camp Pratville. One year, there was an algae bloom and our swimmers were covered in green slim by the time they arrived. They said they would never do it again, and they haven't. It is sad. It was late August, the water was warm and algae came out.

Best Regards,
Deborah Stewart Ebert
1427 Peninsula Drive

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 1:12 PM
To: Walter, Hanspeter
Subject: Fwd: visitors

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Leonard and Marsha Kaiser** <lmkaiser2@yahoo.com>
Date: Thu, Mar 12, 2015 at 5:41 PM
Subject: visitors
To: "sherrie.thrall@gmail.com" <sherrie.thrall@gmail.com>

Hello
We have a house on Lake Almanor that we rent out and also let friends stay at. There may be 15 fishermen a year that stay there.
That does not count other family members.
I will try and send you a email I just sent to Mr Barnes at the Water Board.
Hope this helps Leonard Kaiser

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 1:11 PM
To: Walter, Hanspeter
Subject: Fwd: Visitors to Lake Almanor

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Donna Fields** <dfieldsenvoy@hotmail.com>
Date: Thu, Mar 12, 2015 at 5:12 PM
Subject: Visitors to Lake Almanor
To: "sherrie.thrall@gmail.com" <sherrie.thrall@gmail.com>

We are part time residents and have numerous visitors up to fish. Our visitors come to fish, that is what this lake is all about. The young ones water ski, wake board, etc., but the adults are here primarily to fish. We have on average twelve different families up on a regular basis and 100% of them fish. They, as do we, help support our local community buying groceries, gas, fishing equipment, and of course eating out everyday for at least one meal.
Thank you,
Rick and Donna Fields
1422 Peninsula Dr.
Lake Almanor, CA 96137
916 316-4120

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 1:10 PM
To: Walter, Hanspeter
Subject: Fwd: Save Lake Almanor

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Thenut** <thenut@citlink.net>
Date: Thu, Mar 12, 2015 at 5:00 PM
Subject: Save Lake Almanor
To: "sherrie.thrall@gmail.com" <sherrie.thrall@gmail.com>

Hi Sherrie - At The Sports Nut most of our sales are in fishing equipment and t-shirts (lot of them with fishing themes). I would say about 90% of our business would be affected.
We will be returning home on March 24th from Mexico - if we need to send this info in a letter form. Thanks for all your work. It's appreciated. Let me know what else we can do?
Thanks again
Kathy

Sent from my iPhone
Kathy

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 1:09 PM
To: Walter, Hanspeter
Subject: Fwd: Save Lake Almanor

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Dennis** <denpam@aol.com>
Date: Thu, Mar 12, 2015 at 4:44 PM
Subject: Save Lake Almanor
To: "sherrie.thrall@gmail.com" <sherrie.thrall@gmail.com>

We have at least 50 guests each year and they all fish the lake and the streams.

I'm sure the proponents of this scheme know the outcome of the cold water releases. Just look at the the lakes and streams that this has happened to by other means.
I thought we as a state were long over this nonsense. Ruining one ecosystem to POSSIBLY restore another? Irresponsible!

I'm afraid only litigation will help us. Good luck and thank you for your efforts.

Dennis Welsh
831 E. Mountain Ridge

Sent from my iPad

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 1:08 PM
To: Walter, Hanspeter
Subject: Fwd: Save Lake Almanor

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Diana Costales** <dcostales.cbl@gmail.com>
Date: Thu, Mar 12, 2015 at 4:31 PM
Subject: Save Lake Almanor
To: sherrie.thrall@gmail.com

Sherrie,

I have approximately 100 visitors per yr. About 75% come here to fish. ALL come to use the lake, swim or boat.

My family has been vacationing at Lake Almanor for over 50 yrs...and have owned a home there for over 40 yrs.

Good luck with this battle. I live in NM so I'm able to give my support in person.

Diana Costales
Cell: 505 363-5457
DCostales.CBL@gmail.com
Associate Broker
Coldwell Banker Legacy
500 Unser #101
Rio Rancho, NM 87124
Office: 505 892-1000
EFAX: 505 468-0911

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 1:08 PM
To: Walter, Hanspeter
Subject: Fwd: Save Lake Almanor

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Peter Righero** <pm6483@att.net>
Date: Thu, Mar 12, 2015 at 4:12 PM
Subject: Save Lake Almanor
To: "sherrie.thrall@gmail.com" <sherrie.thrall@gmail.com>

Sherrie. Although I am just a home owner on the peninsula I do come up to lake Almanor just to fish on certain weekends. I spend approx 20-25 days on Almanor throughout the year. If our fishery was impacted I would come up much less in the fall winter and spring. This is the time of the year when our local business need visitors

Peter Righero

Sent from my iPhone

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 1:07 PM
To: Walter, Hanspeter
Subject: Fwd: Save Lake Almanor

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Linda Brown** <linbrown@sbcglobal.net>
Date: Thu, Mar 12, 2015 at 4:09 PM
Subject: Save Lake Almanor
To: "sherrie.thrall@gmail.com" <sherrie.thrall@gmail.com>

Hi Sherrie,
We have approximately 25 guest a summer and I would say 90% come to fish.
Linda Brown
1232 Lassen View Dr.

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 1:07 PM
To: Walter, Hanspeter
Subject: Fwd: Save Lake Almanor

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Muffy Bui** <muffybui@pacbell.net>
Date: Thu, Mar 12, 2015 at 3:45 PM
Subject: Save Lake Almanor
To: sherrie.thrall@gmail.com

Dear Sherrie,

We have at least 35 visitors during the summer and of that number I would say about 75% come to fish the lake. Also, after a day on the lake we go out to dinner with our guests and support the local economy.

Sincerely,

Doug and Muffy Bui
1335 Lassen View Dr
Lake Almanor

Walter, Hanspeter

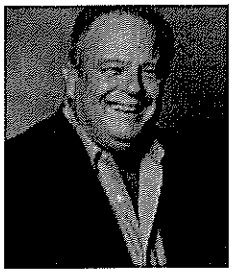
From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 1:06 PM
To: Walter, Hanspeter
Subject: Fwd: Save Lake Almanor

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Dennis Mason** <dmasonrealtor@gmail.com>
Date: Thu, Mar 12, 2015 at 3:31 PM
Subject: Save Lake Almanor
To: sherrie.thrall@gmail.com

Sherrie,

I had 377 visitors and renters, about 94% come to fish. The Water Boards options will ruin our lake.



ALMANOR PROPERTIES, INC.

Dennis Mason CRB, GRI
CAR Director for Life
Almanor Properties, Inc.
Broker/Owner #00619354
313 Peninsula Drive
Lake Almanor, CA 96137
(530)596-3232 Office
(530)251-7711 Cell
(530)596-3234 Fax
dmasonrealtor@gmail.com
www.almanorproperties.com

PLEASE NOTE: MY NEW EMAIL ADDRESS DMASONREALTOR@GMAIL.COM -- I WILL NO LONGER BE USING DMASON@THEGRID.NET.

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 1:06 PM
To: Walter, Hanspeter
Subject: Fwd: Lake visitors that fish (Bill Light -LACC)

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: <lighthouse49@comcast.net>
Date: Thu, Mar 12, 2015 at 3:12 PM
Subject: Lake visitors that fish (Bill Light -LACC)
To: sherrie.thrall@gmail.com

Mrs. Thrall, I have approximately, 25 visitors all of whom fish when they come to visit (family and friends), so 100% !!!!!!
Bill Light --817 East Mountain Ridge Road, Lake Almanor, Ca 707-373-2265 Thank you for your support on this extremely serious matter.

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 1:05 PM
To: Walter, Hanspeter
Subject: Fwd: Save Lake Almanor

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Konnie Marskey** <madronechico@gmail.com>
Date: Thu, Mar 12, 2015 at 3:11 PM
Subject: Save Lake Almanor
To: "sherrie.thrall@gmail.com" <sherrie.thrall@gmail.com>

Hi, I would estimate that we rent or give out our cabin at Lake Almanor West about 42 days a year. I would guess about half of the people fish.
We are in support of keeping the Lake as it is.
Thank you for your efforts, KONNIE Marskey

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 1:05 PM
To: Walter, Hanspeter
Subject: Fwd: Save Lake Almanor

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Reynolds, James E (GE, Measurement & Control)** <james1.reynolds@ge.com>
Date: Thu, Mar 12, 2015 at 3:09 PM
Subject: Save Lake Almanor
To: "sherrie.thrall@gmail.com" <sherrie.thrall@gmail.com>

I have about50 visitors per year and 40% fish.

James E. Reynolds, PE | Senior Service Manager
GE Oil & Gas
T +1 775 677 7664
M +1 775 721 3765
E james1.reynolds@ge.com

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 1:04 PM
To: Walter, Hanspeter
Subject: Fwd: Save Lake Almanor

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Dan Van Elderen** <danvan16@comcast.net>
Date: Thu, Mar 12, 2015 at 3:01 PM
Subject: Save Lake Almanor
To: sherrie.thrall@gmail.com

Hi Sherrie,

I am an owner/resident of two homes at 1210 Peninsula Dr. and 1212 Peninsula at Lake Almanor. We typically have between 75 - 100 guests that visit us each year at Lake Almanor, and I'd estimate that about 75% of them come to fish the lake. I also personally myself fish the lake almost daily.

I am very concerned about the impact that the proposed cold water extraction from Lake Almanor would have on the Lake Almanor environment, and in particular the lake's fish habitat, their food supply, and their long-term survival rate.

Best Regards,
Dan Van Elderen
(530)259-4103

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 1:00 PM
To: Walter, Hanspeter
Subject: Fwd: Save Lake Almanor

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: <skmcfarren@comcast.net>
Date: Thu, Mar 12, 2015 at 2:41 PM
Subject: Save Lake Almanor
To: sherrie.thrall@gmail.com

Hi Sherrie.
Thanks for taking this on and helping to protect the most beautiful lake in Northern California!

We typically have 25 visitors a year at our cabin, and 12% of these visitors fish. We all swim, boat, and enjoy the lake.

Kathleen McFarren
1111 Fairway Pines Road
LACC

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 1:00 PM
To: Walter, Hanspeter
Subject: Fwd: Save Lake Almanor

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Garn Pringle** <lakealmanorfitness@yahoo.com>
Date: Thu, Mar 12, 2015 at 2:29 PM
Subject: Save Lake Almanor
To: "sherrie.thrall@gmail.com" <sherrie.thrall@gmail.com>

Lake Almanor Fitness Center have approximately 100- 125 visitors per month between mid April to mid October who use our fitness facility while they are camping and fishing on Lake Almanor.
Garn Pringle
General Operations Manager

Sent from Garn Pringle's iPhone

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 12:58 PM
To: Walter, Hanspeter
Subject: Fwd: Economic Impact of Thermal Curtain on my restaurants

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **carol** <carolscafe1@earthlink.net>
Date: Thu, Mar 12, 2015 at 2:26 PM
Subject: Economic Impact of Thermal Curtain on my restaurants
To: Sherrie <sherrie.thrall@gmail.com>

Dear Sherrie, I received your request for information regarding what would happen to my business if the thermal curtain is built. As you know, our family resort will be most impacted as we are the closest to the proposed curtain.
Last year, my restaurant in Prattville grossed $235,860. We served over 25,000 guests and of that number, about 30% are full time residents of the area. If the thermal curtain goes through, I would have to shut down as about 70% of my guests are here for the fishing or boating. With no view, the locals would not come either. With the few people left, I could not earn enough to pay liability insurance, payroll taxes, or workman's comp. It would be a sad end to the 44 years I have spent at Prattville providing food for guests and payroll to the Lake Almanor area.

My Chester restaurant is open year around and have a larger percentage of local business. However, sales are extremely slow in the winter and I would say that business from out of the area here to fish and recreate is about 50%. My sales for last year were $217,123.

Lastly, you did not ask but I think it is vitally important, $197,990 in gross payroll went out into the community. They spent their dollars at local grocery stores, gas stations, restaurants, and bars. If I close down, 17 to 25 people will be out of work, most of whom have children.

These figures do not reflect Kenny's income for the campground. He will be sending it to you separately. Thanks so much for doing all you can to head off this grievous injustice to our beautiful Lake Almanor. Sincerely, Carol Franchetti

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 12:58 PM
To: Walter, Hanspeter
Subject: Fwd: Save Lake Almanor

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: <Corneliussen@aol.com>
Date: Thu, Mar 12, 2015 at 2:20 PM
Subject: Save Lake Almanor
To: sherrie.thrall@gmail.com

Dear Sherrie,

I am a home owner in the Lake Almanor Country Club and we host been 30-40 people each season of whom 80% come to fish in the lake.

We appreciate your efforts in saving our beautiful lake.

Best regards,

Torben Corneliussen
1111 Lake Ridge Road
Lake Almanor, CA.
707 291 2995

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 12:58 PM
To: Walter, Hanspeter
Subject: Fwd: Save Lake Almanor

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Robbyn McDowell** <Robbyn.McDowell@earnhardt.com>
Date: Thu, Mar 12, 2015 at 1:57 PM
Subject: Save Lake Almanor
To: "sherrie.thrall@gmail.com" <sherrie.thrall@gmail.com>

We have approximately 30 visitors a year to Lake Almanor and they all fish!!!!

Robbyn McDowell

CFO Earnhardt Management Company

480-783-4620 - office

602-291-9923 - cell

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 12:57 PM
To: Walter, Hanspeter
Subject: Fwd: Save Lake Almanor

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Katie DeLucchi** <jpdeluc@aol.com>
Date: Thu, Mar 12, 2015 at 1:54 PM
Subject: Save Lake Almanor
To: "sherrie.thrall@gmail.com" <sherrie.thrall@gmail.com>

Hi Sherri,
We don't rent out place, but of the people who have visited, 30% of our friends used the lake for fishing. Everyone I talk to who actually knows where Lake Almanor is (I live in the South Bay) only know it because of the great fishing!
Hope this helps
Katie DeLucchi

Sent from my iPhone, witch doe snot properly cork rect my typos.

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 12:48 PM
To: Walter, Hanspeter
Subject: Fwd: Save Lake Almanor

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Cliff and Lynne** <ctslms@aol.com>
Date: Thu, Mar 12, 2015 at 11:08 AM
Subject: Save Lake Almanor
To: sherrie.thrall@gmail.com

Sherrie, we have either visited, owned property, or lived permanently at Lake Almanor since 1974. Our family owned the store at Canyon Dam in years immediately following WWII.
Although our numbers are small when compared to those provided by commercial establishments, we are in hopes that others with residential visitors will also respond and that collectively we can make a difference. Annually, we average approximately 23 visitors per year. Of these, approximately 6 visit multiple times. Of the 23, 19 enjoy fishing. More importantly, all 23 participate in water sports. For the last two years, the areas that our guests could utilize for water sports have been reduced in size and in number due to the increase in algae bloom that brings with it the parasite known as "Swimmers Itch". Any increase in lake temperature due to cold water draw down, either by the curtain or by deep water outfall at the dam, will only serve to exacerbate the problem. If it worsens, they will most certainly seek other venues for their activities rather than continue to expose their families to the parasite. Nearby, Clear Lake is a prime example of the devastation caused by the increase in algae that can reduce visitors, decrease property values and destroy tourism.

Respectfully,
Cliff and Lynne Shelton

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 12:47 PM
To: Walter, Hanspeter
Subject: Fwd: Save Lake Almanor

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Judi** <lakehavenllc@gmail.com>
Date: Thu, Mar 12, 2015 at 10:36 AM
Subject: Save Lake Almanor
To: "sherrie.thrall@gmail.com" <sherrie.thrall@gmail.com>

Hi
First of all I would like to thank you for doing this for your community and please know it is appreciated.
We provide lodging for anywhere between 400 to 600 people per year. I would have to estimate that 90% of the business we get is dependent upon the fishery here in like Almanor. If there's any other information you need or anything else you need I would be happy to provide it please let me know.

Thank you,
Judith Finkbeiner
Lake Haven Resort

Come and enjoy the best of what Lake Almanor has to offer!

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 12:47 PM
To: Walter, Hanspeter
Subject: Fwd: Save Lake Almanor

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Marcia** <pacificgal101@msn.com>
Date: Thu, Mar 12, 2015 at 10:20 AM
Subject: Save Lake Almanor
To: sherrie.thrall@gmail.com

Sherrie,

I received a message from the Better Bussing so Bureau. I personally have about 20 guest that come to Lake Almanor basin every year and 100% of them come to fish. This is nor many but I hope it helps. We need to keep Lake Almanor fusing viable.

Marcia Stallworth
Real Estate Broker

Sent from my Verizon Wireless 4G LTE smartphone

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 12:46 PM
To: Walter, Hanspeter
Subject: Fwd: Save Lake Almanor

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Cliff Fahey** <cgfahey@yahoo.com>
Date: Thu, Mar 12, 2015 at 10:04 AM
Subject: Save Lake Almanor
To: "sherrie.thrall@gmail.com" <sherrie.thrall@gmail.com>

Hey Sherrie,

We have met in t the past -- current home owner in the LACC

www.longshootlodge.com

We Book our place out at least 5 months a year -- this coming year it looks to be closer to 6 months -- even in the winter months.

We have at least 6 repeat renters that come form NV, OR, and SoCAL for the last 4 years for the fishing on the lake. The Balance of our renter come for the Lake - both fishing and water sports. If the lake is damaged from the current state - we will need to sell the property and would no longer come to the area.

We depend on the rental income to upgrade the property - investing about 10K per year in property improvement. In addition, we provided local residents part time jobs - from house cleaning, yard maintenance, electrical, plumbers and construction workers.

The Lake is the draw for our renters - without the fishing our income would drop.

There are alternatives to the thermal curtain that need to be pursued as the solution - some are much more "green" by planting trees to shade the Feather River.

Thanks for hearing my voice.

Cliff Fahey
Thomas Greely MD

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Tuesday, March 24, 2015 12:46 PM
To: Walter, Hanspeter
Subject: Fwd: visitors

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: <karinur@comcast.net>
Date: Thu, Mar 12, 2015 at 10:02 AM
Subject: visitors
To: sherrie.thrall@gmail.com

We rent our home out at 600 Cedar Canyon Road. It accommodates 16 and is rented for a least 8 weeks. That means at least 128 visitors of which I am sure 80 to 85 percent fish Lake Almanor. I sent my comments to the water board last month along with support of the official LACC letter. Best of Luck to us all!

Karin Urquhart

Walter, Hanspeter

From: Sherrie Thrall <sherrie.thrall@gmail.com>
Sent: Wednesday, March 25, 2015 11:35 AM
To: Walter, Hanspeter
Subject: Fwd: rental

Hi, here is one more from a local realtor.

Sharon (Sherrie) Thrall
Plumas County Supervisor, District 3
P.O. Box 368
Chester, CA 96020
530-258-3656
website: almanorpost.com

---------- Forwarded message ----------
From: **Wendi Durkin** <wendi@bhhslakealmanor.com>
Date: Tue, Mar 24, 2015 at 10:57 AM
Subject: rental
To: Sherrie Thrall <sherrie.thrall@gmail.com>

Sherrie, I ran the numbers as we discussed. I have a spreadsheet I can send outlining the below. Is this what you want for Hanspeter? Please let me know. Thanks!

I currently manage 39 vacation rental homes in the Lake Almanor Basin. In order to determine if cold water removal would affect my revenue as well as my clients, I did some number crunching.

Our main cliental for May, early June, September and October are fishing people. So, I used an 80% revenue split for those months. During peak season which is late June, July, August, I assumed those people were mostly vacationing and probably fished as a part of their vacation, but not with the same intensity. So, I used a 20% split.

It was determined that the income my business would lose is approximately $59,000. Between my 39 homes, the owners could lose as much as $480,000 in revenue. For the Water Board to say the economic impact is less than significant is just untrue. Maybe those numbers don't matter to them, but I assure you they matter to me and my clients.

Regards,

Wendi Durkin

Broker Owner

Berkshire Hathaway HomeServices Lake Almanor Real Estate

BRE#01194091

Office 530-259-5687

Fax 530-259-4750

Cell 530-228-2683

ATTACHMENT 11

California Gap Analysis Project's Predicted Distribution Map

Mountain Yellow-legged Frog *(Rana muscosa)*

Metadata **(Data about data or how the map was made)**

Legend:
= Core Habitat

Predicted Distribution
The purpose of the vertebrate distribution maps is to provide more precise information about the current distribution of individual native species within their general ranges than is generally available from field guides.

Amphibians do not migrate as some birds and mammals, so the colored areas depict the predicted range for the Mountain Yellow-legged Frog year-round. The habitats were identified using satellite imagery, other datasets and experts throughout the state, as part of the California Gap Analysis Project.

Webpage designed by Dave Lester

California Gap Analysis Project's Predicted Distribution Map

Cascades Frog *(Rana cascadae)*

Metadata **(Data about data or how the map was made)**

Legend:
☐ = Core Habitat

Predicted Distribution
The purpose of the vertebrate distribution maps is to provide more precise information about the current distribution of individual native species within their general ranges than is generally available from field guides.

Amphibians do not migrate as some birds and mammals, so the colored areas depict the predicted range for the Cascades Frog year-round. The habitats were identified using satellite imagery, other datasets and experts throughout the state, as part of the California Gap Analysis Project.

Webpage designed by Dave Lester

California Gap Analysis Project's Predicted Distribution Map

Foothill Yellow-legged Frog *(Rana boylii)*

Metadata **(Data about data or how the map was made)**

Legend:
= Core Habitat

Predicted Distribution
The purpose of the vertebrate distribution maps is to provide more precise information about the current distribution of individual native species within their general ranges than is generally available from field guides.

Amphibians do not migrate as some birds and mammals, so the colored areas depict the predicted range for the Foothill Yellow-legged Frog year-round. The habitats were identified using satellite imagery, other datasets and experts throughout the state, as part of the California Gap Analysis Project.

Webpage designed by Dave Lester

California Gap Analysis Project's Predicted Distribution Map

California Newt *(Taricha torosa)*

Metadata **(Data about data or how the map was made)**

Legend:
☐ = Core Habitat

Predicted Distribution
The purpose of the vertebrate distribution maps is to provide more precise information about the current distribution of individual native species within their general ranges than is generally available from field guides.

Amphibians do not migrate as some birds and mammals, so the colored areas depict the predicted range for the California Newt year-round. The habitats were identified using satellite imagery, other datasets and experts throughout the state, as part of the California Gap Analysis Project.

Webpage designed by Dave Lester

ATTACHMENT 12

PERMIT TO MINE / RECLAMATION PLAN

PERMITTEE: Seneca Gold, LLC

OWNER: Estate of Lee Crowe – David & Lorrie Preim

DATE APPROVED: July 16, 2014

USE PERMITTED: Surface placer gold mining.

ASSESSOR'S PARCEL NUMBER: 002-280-002

LOCATION: 587 Little Seneca Road, Canyon Dam. T.26N/R.8E/S.9 MDM

Permittee is hereby granted a Permit to Mine / Reclamation Plan under the provisions of Plumas County Code Sections 9-5.01 *et seq.*, subject to the following conditions:

1. The initiation date for the Permit to Mine/Reclamation Plan will be the date of signature of the permit by the Applicant/Operator.

2. The Permit to Mine/Reclamation Plan will expire August 2024, unless an extension of time is granted. Activities related to reclamation of the site may extend past this date as necessary to complete reclamation per the approved plan, except that no further mining activity shall be started after the expiration date.

3. The Permit to Mine/Reclamation Plan shall be conducted in compliance with the plan and plan maps submitted in the ***Surface Mining and Reclamation Plan for Seneca Mine, Mineral Patent CA 30606, Plumas County, CA,*** **prepared for Seneca Gold, LLC, by Holdrege & Kull,** unless modified by the following conditions.

4. Mining, processing and a significant part of reclamation activities shall take place during April 1st through October 31st of each year.

5. Pursuant to California Department of Fish and Wildlife requirements, no suction dredging is to be performed within 100 yards of the North Fork Feather River. No possession of a suction dredge is allowed within 100 yards of the North Fork Feather River.

6. A Hazardous Materials Business Plan for fuel and/or petroleum product storage shall be submitted to and approved by Plumas County Environmental Health prior to commencement of the operations.

7. If stationary fuel tanks are to be used in lieu of a mobile refueling truck, a Spill Prevention, Control and Counter Measures plan (SPCC) shall be submitted to Plumas County Environmental Health for review and approval prior to commencement of operations.

8. Sewage disposal, including any means of sewage disposal such as blue huts, shall be located at a minimum of 100 feet from the bank of any surface waters, water supply well, or natural spring. The Operator shall have a current and valid contract with an approved provider for routine service of such facilities.

9. All applicable permits for the operation, including but not limited to a National Pollutant Discharge Elimination System (NPDES) Storm Water Pollution Prevention (SWPPP) permit for the control, discharge, and monitoring of storm water, shall be adopted and issued by the California Regional Water Quality Control Board prior to commencement of the operations.

10. A copy of this permit (plan) shall be kept at the project site. The Operator shall oversee the permit's (plan's) implementation. Best Management Practices will be implemented during reclamation activities. If unforeseen circumstances require new and/or revised best management practices, they will be employed immediately by the Operator.

11. Reclamation may be performed on an annual basis, in stages compatible with continuing operations, or upon completion of all excavation, removal or fill. It is the responsibility of the Operator to reclaim the mined lands in accordance with the approved reclamation plan. The progress of mining and reclamation are subject to annual inspections to verify compliance with the plan, as required by Public Resources Code 2774 and California Code of Regulations 3504.5.

    In addition to the areas to be reclaimed each year, areas of disturbance not located within the active mining and processing area will require the implementation of temporary erosion control measures, as set forth in the permit/plan. These measures shall include, but not be limited to the following:

    a. Gravel piles which will exist throughout the winter will be surrounded by interceptor ditches (or berms) prior to the onset of the rainy season each year, and no later than October 15th of each year. Drainage will be directed to the mining pit or other appropriately-sized sediment traps. Erosion and sediment control best management practices will be installed pursuant to the SWPPP.

    b. Soil stockpiles which will exist throughout the winter, and which do not have sufficient existing vegetative growth to prevent erosion, will be seeded with grasses prior to the onset of the rainy season and no later than October 15 of each year. Erosion and sediment control best management practices will be installed around these stockpiles pursuant to the SWPPP.

    c. Areas that were stripped of vegetation to allow mining, but are not yet mined, will either drain to the mining pit or will be seeded with grasses prior to the onset of the rainy season and not later than October 15th of each year. Erosion and sediment control best management practices will be installed in these areas pursuant to the SWPPP.

    d. All other areas disturbed during mining shall either be seeded and/or have drainage established to the mining pit prior to the onset of the rainy season and not later than October 15th of each year. Exposed bedrock, boulder piles and rocks temporarily stockpiled are exempt from the seeding requirements.

12. A Streambed Alteration Agreement for the crossing of the North Fork Feather River and the temporary re-routing of Davis Creek shall be obtained from California Department of Fish and Wildlife prior to commencement of operations.

13. Appropriate permits for new on-site stationary equipment sources shall be obtained from the Northern Sierra Air Quality Management District.

14. The District Rules of the Northern Sierra Air Quality Management District are applicable to this project. Operator shall submit a Dust Control Plan to the Northern Sierra Air Quality Management District.

    a. Earthen materials excavated, processed, or stockpiled will be kept moist when conditions exist that be conducive to the generation of fugitive dust.

    b. Unpaved roads within the site used as haul roads will be watered to control dust when necessary. **MM 3A**

    Staff of the District shall monitor permit conditions. Planning staff, or qualified inspector, shall ensure that current permits and plans are in place on an annual basis at the time of the annual inspection.

15. Operator shall obtain appropriate entitlements for equipment operation and comply with permit conditions. **MM 3A**

16. A Streamside Management zone of a minimum 30-foot setback from the banks of the North Fork Feather River shall be maintained during the life of the operation. This setback may be increased by California Department of Fish and Wildlife, as necessary, to avoid riparian vegetation and to prevent discharge of mining waste or contact water to the river. Temporary orange construction fencing shall be installed around the outer edge of the streamside management zone in the area of active mining. The operator will ensure that all mining activities and equipment are restricted from the demarcated zone. Staff of the Planning Department or qualified representative will inspect and approve the location of the protective fencing before mining activities are initiated. **MM 4A**

17. If avoidance is not feasible, the Applicant will compensate for the loss of riparian vegetation by replanting riparian vegetation in suitable areas (as mapped by Wright, 2013) at the end of each season and after completion of each phase of the mining operation. Riparian vegetation will include planting species that are indigenous to the Site. Preferably, plants or cuttings will be obtained from onsite sources. Revegetation sites will be monitored for two to five years, or as specified in the streambed alteration agreement that will be obtained from California Department of Fish and Wildlife. **MM 4A**

18. Revegetation meeting all the requirements of California Code of Requirements section 3705 shall be performed on an annual basis after mining activities are completed. The recommendations of the *Revegetation, Mitigation and Monitoring Plan,* dated April 3, 2014 shall be followed to ensure that reclamation and revegetation is successful. **MM 4A**

19. Impacts to the wetland and riparian areas associated with Davis Creek shall be avoided by fencing and avoiding an area 20-feet on either side of the creek, and through proper installation of a culvert and rocked ford. Fencing shall be inspected prior to the commencement of operations and annually at the time of inspection by staff of the Planning Department or qualified representative. **MM 4A**

20. In order to prevent the spread of Himalayan blackberry, in areas to be mined the following season, foliage spray will be applied in the late summer or early fall, followed by burning or mowing 40 to 60 days after, as described in Section 2.19.3 of the *Surface Mining and Reclamation Plan for Seneca Mine, Mineral Patent CA 30606, Plumas County, CA,* prepared for Seneca Gold, LLC, by Holdrege & Kull. **MM 4B**

21. In an effort to avoid impacts to raptors and migratory birds, potential nesting habitat will be disturbed only after the nesting season (i.e., in the fall). In the area to be mined during the next season, woody vegetation that may serve as potential nesting habitat will be removed during the fall and may be used to re-plant the recently mined areas as part of reclamation. If nesting habitat is not removed during the fall, a qualified biologist must perform surveys of potential nesting habitat. **MM 4C**

22. Pre-construction surveys should be conducted by a qualified biologist three (3) days prior to ground disturbance or vegetation removal. If ground-disturbing activities are delayed or suspended for more than fifteen (15) days, the area should be re-surveyed. If the qualified biologist locates active nests of migratory birds or raptors, any such nests shall be flagged and avoided at a distance that prevents disturbance.

    Should project-related activities cause the nesting migratory bird or raptor to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the exclusionary buffer should be increased such that activities are a sufficient distance from the nest to stop this agitated behavior by the bird or raptor. The exclusionary buffer should remain in place until chicks have fledged or as otherwise determined by a qualified biologist. **MM 4C**

23. Segments A, B, and C, as described in the *Archaeological Survey Report for the Testing Plan of Operations for the Grand Finale, Millie, and Ken Placer Claims, Plumas County, California, June 1995,* shall be flagged for avoidance prior to commencement of mining operations. Staff of Planning Department or qualified representative shall inspect the flagging prior to commencement of operations and annually at the time of inspection. **MM 5A**

24. A detailed financial assurance cost estimate and corresponding financial assurances shall be provided to the Planning Director for review and approval. Upon approval of the financial assurances by the Planning Director, and review by the Department of Conservation, Office of Mine Reclamation, a financial assurance mechanism shall be provided in a form acceptable to the Planning Director and the Department of Conservation, Office of Mine Reclamation. The financial assurance cost estimate shall be subject to annual review.

25. Financial assurances held for reclamation work will be released when the performance standards of the reclamation plan are satisfied.

26. The Permit to Mine/Reclamation Plan shall be signed and returned within forty (40) days of the date of approval or the permit will be voided.

Date _____

_____
Randy Wilson
Planning Director/Zoning Administrator

I, the undersigned, understand and accept this Permit to Mine / Reclamation Plan and the conditions stated above and agree to comply with them. I further understand that failure to comply with any of the conditions may result in revocation procedures of the Permit being started by the Planning Director.

Estate of Lee Crowe (Owner)

Date _____

_____
by David Preim

_____
by Lorrie Preim

Date 5/11/14

_____
Seneca Gold, LLC
Dean Deniz, Managing Member (Permittee)

This Permit to Mine / Reclamation Plan shall not be considered to be granted until it is signed by the permittee and owner, if applicable, and the Zoning Administrator, and a copy is filed in the Planning Department.

ATTACHMENT 13

Pacific Gas and Electric Company®

Power Generation

245 Market Street
San Francisco, CA 94105

Mailing Address
Mail Code N11C
P. O. Box 770000
San Francisco, CA 94177

April 30, 2012

Via Electronic Submittal (E-filing)

The Honorable Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
Hydropower Compliance and Administration
888 First Street, NE
Washington, DC 20426

Re: Rock Creek - Cresta Project (FERC No. 1962-191)
Submittal of the Water Temperature Under Article 401 and Appendix Condition 4D – Interim Control Measures

Dear Secretary Bose:

The Federal Energy Regulatory Commission (FERC) issued a new license to Pacific Gas and Electric Company (PG&E) for the Rock Creek-Cresta Hydroelectric Project, FERC No. 1962 (Project) on October 24, 2001 (97 FERC ¶ 61,084). Condition 4(d) of the license requires PG&E to prepare a report that evaluates whether mean daily temperatures of 20 degrees Celsius (°C) or less have been achieved in the Rock Creek and Cresta reaches, and, if not, whether additional reasonable control measures are available. The report was to include recommendations for the implementation of any such measures.

PG&E conducted an evaluation of measures to enhance coldwater habitat that could be funded under License Condition 4(e). The primary measures modeled and evaluated were modifications to achieve the withdrawal of colder water from the upstream reservoirs of the Upper North Fork Feather River Project (FERC No. 2105). An informational progress report on water temperature monitoring, modeling and control options was filed by PG&E on September 21, 2005. The Project No. 2105 license expired on October 31, 2004, and is currently operating under an annual license. The current evaluation efforts are focused on the environmental review process in support of a 401 certification by the California State Water Resources Control Board (Board).

PG&E's July 24, 2007 letter noted that this study effort was expected to produce valuable information for reasonable control measures evaluation. PG&E's July 31, 2008 letter noted the Board had completed a level 1 and level 2 analysis and had progressed to a level 3 analysis, which is taking a more focused look at the most promising water temperature control options. At its January 14, 2009 meeting, the Rock Creek – Cresta Ecological Resources Committee (ERC) and United States Forest Service (FS) discussed the status of the study efforts under the Project 2105 environmental review process. The Board representative stated that the level 3 analysis was nearing completion. In addition, the Board representative stated that the analysis would be included as an appendix to the draft Environmental Impact Report (EIR).

The ERC and FS has recognized that the draft EIR and accompanying level 3 analyses will greatly assist in the discussion of primary temperature control measures, as well as any additional reasonable control measures. During the April 2011 ERC meeting, PG&E informed the ERC that we would prepare a letter to FERC requesting an extension to the Condition 4(d) report, in the anticipated release schedule of the draft EIR. The ERC supported the proposed time extension to August 31, 2012.

FERC granted an extension to May 1, 2012, but indicated that any additional request for extension of time to file the Additional Reasonable Control Measures Report shall be accompanied by a proposal, developed in consultation with the ERC, to implement interim water temperature control measures. FERC also required that this filing include copies of the comments and recommendations of the ERC regarding the interim control measures and the licensee's description of how the proposed interim control measures accommodate the comments of the ERC and FS. The licensee was also required to allow a minimum of 30 days for the ERC and FS to comment and to make recommendations before filing any request for an additional extension of time and proposed interim temperature control measures with the FERC. Attached is the "*Interim Temperature Control Measures Plan.*" These interim control measures were discussed at the January, February, March, and April 2012 ERC meetings. The draft Plan was e-mailed to the members of ERC and FS, and PG&E received concurrence on the Plan from all currently active ERC members, including: the United States Forest Service, California Department of Fish and Game, California State Water Resources Control Board, California Sportfishing Protection Alliance, Plumas County, and American Whitewater (attached). PG&E received one comment pertaining to the on-going discussions during the ERC meetings to support fish and amphibian passage into the tributaries, and this was included as Interim Measure 5 in the attachment. No other comments were received.

As of the date of this letter, the draft EIR for Project 2105 has still not been distributed by the Board. The ERC and FS, consequently, requests an extension of time to receive and review the EIR in order to conduct the appropriate evaluation of additional measures to enhance coldwater habitat that could be funded under License Condition 4(e), and to develop the Condition 4(d) report. Therefore, PG&E is requesting another extension of time until May 1, 2013.

If you have any questions, please call me at (415) 973-3642.

Sincerely,

Charles White, Senior License Coordinator
Hydro Licensing

Attachments

cc: Attached List

cc: Terri Simon-Jackson
Plumas National Forest
P.O. Box 11500
Quincy, CA 95971

Amy Lind
U.S. Forest Service
Sierra Nevada Research Center
1731 Research Park Dr.
Davis, CA 95618

Sharon Thrall
Plumas County Supervisor
P.O. Box 368
Chester, CA 96202

Mary Lisa Lynch
California Department of Fish and Game
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670

Peter Barnes
State Water Resources Control Board
P. O. Box 2000
Sacramento, CA 95812

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Richard Roos-Collins
Water and Power Law Group
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Berkeley CA 94704

Attachment A

Interim Temperature Control Measures

Rock Creek-Cresta Project
FERC No. 1962

Interim Temperature Control Measures

Background

The Federal Energy Regulatory Commission (FERC) issued to Pacific Gas and Electric Company (PG&E) a new license for the Rock Creek-Cresta Project, FERC No. 1962 (Project) on October 24, 2001. The License required the submission of the Additional Reasonable Control Measures report under Condition 4D (4D Report) within five years of the date when FERC approved the water temperature monitoring plan. FERC approved the water temperature plan in June 2002.

PG&E conducted an evaluation of measures to enhance coldwater habitat that could be funded under License Condition 4E. The primary measures modeled and evaluated were modifications to achieve the withdrawal of colder water from the upstream reservoirs on the Upper North Fork Feather River Project (UNFFR), FERC No. 2105. An informational progress report on water temperature monitoring, modeling and temperature control options was filed by PG&E on September 21, 2005. The UNFFR Project license expired on October 31, 2004 and is currently operating under an annual license. Following the guidelines and protocol of California Environmental Quality Act (CEQA), the current evaluation efforts are focused on the environmental review process in support of a 401 certification by the California State Water Resources Control Board (SWRCB).

PG&E's July 24, 2007 letter noted that the CEQA study effort was expected to produce supporting information for the evaluation. PG&E's July 31, 2008 letter noted the SWRCB had completed a level 1 and level 2 analysis and had progressed to a level 3 analysis, which is taking a more focused look at the most promising water temperature control options, which are in UNFFR project. The level 3 analysis was released on December 20, 2011.

The United States Forest Service (USFS) and the Rock Creek-Cresta Ecological Resources Committee (ERC) has recognized that the draft Environmental Impact Report (EIR) will greatly assist in the discussion of primary temperature control measures, as well as help with the analysis of any additional potential reasonable control measures. During the April 2011 ERC meeting, PG&E informed the ERC that they would prepare a letter to FERC requesting an extension to the Condition 4(d) report, in the anticipated release schedule of the draft EIR. With its May 11, 2011 letter, PG&E requested an extension of time to file the Addition Reasonable Control Measures Report to August 31, 2012, which was supported by the ERC.

FERC granted an extension to May 1, 2012, but indicated that any additional request for extension of time to file the Additional Reasonable Control Measures Report shall be accompanied by a proposal, developed in consultation with the ERC, to implement interim water temperature control measures. FERC also required that this filing include copies of the comments and recommendations of the ERC regarding the interim control

measures and PG&E's description of how the proposed interim control measures accommodate the comments of the ERC. PG&E was also required to provide the ERC a minimum of 30 days to comment and to make recommendations before filing any request for an additional extension of time and/or proposed interim temperature control measures with the FERC. The following is PG&E's plan to address the interim temperature control measures to reduce water temperatures in the Rock Creek and Cresta reaches prior to the release of the draft UNFFR EIR.

Interim Control Measures

PG&E operates the Rock Creek and Cresta facilities in accordance with minimum instream flow requirements in License Condition 5. Additionally, as required by License Condition 4, PG&E monitors water temperatures in both the Rock Creek (PG&E Gage No. NF-57) and Cresta (PG&E Gage No. NF-56) reaches. If the daily average water temperature exceeds 20°C for two consecutive days, measured midnight to midnight for each 24 hour period, PG&E notifies the USFS and ERC of the temperature exceedence and informs the USFS and ERC of the actions being taken to decrease the water temperatures in an effort to maintain a daily average water temperature of 20°C or less.

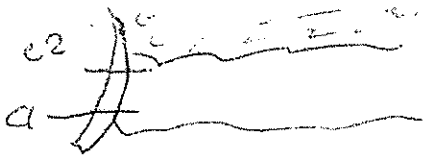
Interim Measure 1

If the daily average water temperature in the Rock Creek or Cresta reach exceeds the 20°C criterion for two consecutive days, PG&E will maximize the release of the minimum instream flow requirement at each reservoir to the low-level outlet located approximately 30-feet below the invert of the radial gates. The change in the water release from the surface radial gate to the low-level outlet could potentially provide deeper, cooler water to the Cresta and Rock Creek reaches. Results?

Interim Measure 2

PG&E will implement a program that will preferentially operate the Caribou 1 Powerhouse over the more efficient Caribou 2 Powerhouse once the temperature criterion is exceeded. Caribou 2 primarily withdraws surface water whereas Caribou 1 deeper Powerhouse has the potential to access a limited amount of colder water from the deeper portions of Butt Valley Reservoir and deliver to the Rock Creek and Cresta reaches. In order to preserve the finite amount of colder water in Butt Valley Reservoir, PG&E will attempt to maintain Butt Valley Reservoir at maximum pool and minimize the operation of Caribou 1 until July 15 or the first occurrence of average daily temperatures in either the Rock Creek Reach (NF-57) or Cresta reach (NF-56) exceeding 20°C for two days, whichever occurs sooner. During this special Caribou 1 operation[1], Caribou 2 will reduce its operation as much as is reasonably possible to

[1] The above action is not intended to restrict the operation of either Caribou 1 or Caribou 2 in meeting system power needs during system alerts, warnings or stage emergencies. Also, Caribou 1 is routinely used for meeting peak loads for several hours on days with high energy demand, which may reduce, over time, the amount of cold water available in Butt Valley Reservoir.



minimize the mixing with surface water. This operation will be for a period of 5 days as effective colder water withdrawal from Caribou 1 diminishes after this period.

Interim Measure 3

In the report "*North Fork Feather River Study Data and Informational Report on Water Temperature Monitoring and Additional Reasonable Water Temperature Control Measures*" filed with FERC on September 19, 2005, PG&E determined that the current configuration and operation of the Bucks Project provided very favorable water temperature benefits to the NFFR. PG&E will continue to operate the Bucks Creek Powerhouse in a manner that will help reduce daily average water temperatures both in the lower Rock Creek Reach (between Bucks Creek and Rock Creek powerhouses) and the Cresta Reach. Bucks Creek Powerhouse discharges to the NFFR approximately 1 mile upstream of Rock Creek Powerhouse and has significantly cooler water, which will benefit the lower Rock Creek Reach (about 12% of the total Rock Creek reach) and the Cresta reach.

Interim Measure 4

During critically dry years, after implementing Interim Measures 1 through 3 and when daily average temperature at NF-57 or NF-56 are above 20°C, the minimum instream flow from the Rock Creek (150 cfs) and Cresta (140 cfs) dams will be increased to 200 cfs, or to any flow in between 150/140 cfs to 200 cfs, to the extent necessary to contribute to the maintenance of mean daily temperatures of 20°C or less in the respective reach. The increase will be in daily increments of approximately 20 cfs until which time the daily average temperature is less than or equal to 20°C or the flow release is 200 cfs

Similarly, this increased flow shall be reduced back to the minimum instream flow, when not required to maintain mean daily temperatures of 20°C. Any flow adjustments will be made in the early morning to allow enough time to reflect any temperature change at NF-57 and NF-56 that peaks in the late afternoon.

Interim Measure 5

PG&E, the USFS, and the ERC will finalize a Letter of Intent (LOI) to participate in ongoing efforts to address fish and amphibian passage issues in tributaries to the North Fork Feather River. This LOI could provide access to cold-water refugia and potentially increase the overall aquatic productivity in the NFFR. PG&E, the USFS, and the ERC recognize that access for aquatic biota to NFFR tributaries is an issue of great importance not only within the Project waters, but for the health of the entire watershed.

Reporting

PG&E will determine the effectiveness of the interim control measures and the results will be reported in the Rock Creek – Cresta Annual Report filed with FERC each year.

Attachment B

Agency Correspondence

White, Charles

From: Smith, Dennis E -FS <dennissmith@fs.fed.us>
Sent: Friday, April 27, 2012 2:43 PM
To: White, Charles
Cc: SimonJackson, Terri -FS; Lind, Amy -FS
Subject: RE: Letter to FERC, Interim Control Measures, and LOI

Charlie,

The USDA Forest Service has reviewed the DRAFT Rock Creek–Cresta Project (FERC NO. 1962) Interim Temperature Control Measures Draft document. We agree that the review of the Upper North Fork Feather River Project (FERC No. 2105) EIR is necessary in order to conduct the appropriate evaluation of additional measures to enhance coldwater habitat that could be funded under License Condition 4(e), and to develop the Condition 4(d) report. For that reason the USDA Forest Service agrees with PG&E's request for an additional extension of time until May 1, 2013 to file these Condition 4(e) measures and the 4(d) report with FERC.

With this agreement for an extension of time the USDA Forest Service requests to be notified within 24 hours of excursions in temperature that necessitate implementation of any of the five interim measures and what specific interim measure is being taken. We also would like notification within 48 hours after an interim measure is taken as to its effectiveness and if the measure taken is not effective, what addition interim control measures will be taken to return stream temperatures to below 20ºC.

If you have any questions about the specifics of our support for an extension of time, don't hesitate to contact me.

R/
Dennis

Dennis Smith
USDA Forest Service
Pacific Southwest Region
Regional Hydropower Assistance Team Project Manager
1323 Club Drive
Vallejo, CA 94592
dennissmith@fs.fed.us
707-562-9176 Office
916-849-8039 Cell
707-562- 9055 Fax

From: White, Charles [mailto:COW1@pge.com]
Sent: Friday, April 27, 2012 1:38 PM
To: Smith, Dennis E -FS
Subject: Letter to FERC, Interim Control Measures, and LOI

Dennis,

Here is the submittal package that I am planning to send to FERC. All the other active members of the ERC have indicated their concurrence with the proposed Interim Control Measures.

Thank you for looking at this.

Charles White
Pacific Gas and Electric Company
245 Market Street, 1120B, San Francisco, CA 94105
Mailing: MC N11C, PO Box 770000, San Francisco, CA 94177
(415) 973-3642 Office
(925) 487-5270 Cell
cow1@pge.com

White, Charles

From: leah wills <leah2u@frontiernet.net>
Sent: Wednesday, April 25, 2012 5:02 PM
To: White, Charles
Cc: Sherrie Thrall; Randy Wilson; Albietz, Jessica
Subject: Re: Draft Interim Temperature Control Measures

Hi Charlie,

Good luck with your new job. It has been great to work with you.

Plumas County supports the Interim Control measures as proposed with the following suggested edits. Plumas would like to retain the cold water pool in But Valley reservoir as long as possible to lessen the cumulative heat strain on the trophy cold water trout fishery in the reservoir. So please defer the preferential use of Caribou 1 as long as possible in the heat storm season this year. Also, could you identify how the ERC will be notified of the interim water measures/actions that you do you take this year? And finally, the ERC has identified that moving ahead with the signing of the LOI is part of this summer/fall interim coldwater trout habitat measures.

The habitat/temperature/flows nexus is something the ERC will be working on for the rest of this year, although you may miss it.
Oh, too bad for you.

The approval of the LOI is scheduled on the May 15th, 2012 Plumas County Board of Supervisor's agenda.

Plumas County would like to see the signing of the LOI added to the Interim Measures document if you think the LOI is not too far "off topic" with FERC.

Best, Leah
On Apr 2, 2012, at 2:28 PM, White, Charles wrote:

ERC Members,

Attached is the draft Interim Temperature Control Measures recommendations. These are recommendations that we discussed at the February and March ERC meetings. I would like to get your comments April 26th.

This is also posted on the RCC ERC website.

Charles White
Pacific Gas and Electric Company
245 Market Street, 1120B, San Francisco, CA 94105
Mailing: MC N11C, PO Box 770000, San Francisco, CA 94177
(415) 973-3642 Office
(925) 487-5270 Cell
cow1@pge.com

<Interim Temperature Control Measures (ERC Review)_JA1.docx>

White, Charles

From: Chris Shutes <blancapaloma@msn.com>
Sent: Wednesday, April 18, 2012 11:58 AM
To: White, Charles; Albietz, Jessica
Cc: Peter Barnes; Laurie Soule; Herman, Andie; Amy Lind; Running, Stuart; Dave Steindorf; Leah Wills
Subject: Interim temperature report

Charlie,

I approve the draft "Interim Temperature Control Measures" for the Rock Creek - Cresta Project, as outlined in the April 5, 2012 review draft.

More permanent potential measures to improve summer water temperatures in the North Fork Feather River between Lake Almanor and Lake Oroville will become more evident with the issuance by the State Water Resources Control Board of its EIR for the 401 Water Quality Certification for the Upper North Fork Feather Project. CSPA looks forward to working with other stakeholders in reviewing the EIR, and developing permanent measures to improve summer water temperatures in the North Fork Feather River, pursuant to the 401 process for the Upper North Fork Feather Project.

Chris Shutes
FERC Projects Director
California Sportfishing Protection Alliance

White, Charles

From: Laurie Soule <LSOULE@dfg.ca.gov>
Sent: Wednesday, April 25, 2012 2:11 PM
To: White, Charles
Subject: Re: Draft Interim Temperature Control Measures

DFG concurs with the draft Interim Temperature Control recommendations. Thank you.

Laurie A. Soule
Staff Environmental Scientist
California Department of Fish and Game
North Central Region
1701 Nimbus Road, Ste. A
Rancho Cordova, CA 95670
916-358-2847

>>> On 4/2/2012 at 2:28 PM, "White, Charles" <COW1@pge.com> wrote:

> ERC Members,
>
> Attached is the draft Interim Temperature Control Measures recommendations. These are recommendations that we discussed at the February and March ERC meetings. I would like to get your comments April 26th.
>
> This is also posted on the RCC ERC website.
>
> **Charles White**
> Pacific Gas and Electric Company
> 245 Market Street, 1120B, San Francisco, CA 94105
> Mailing: MC N11C, PO Box 770000, San Francisco, CA 94177
> (415) 973-3642 Office
> (925) 487-5270 Cell
> cow1@pge.com

White, Charles

From: Peter Barnes <PBarnes@waterboards.ca.gov>
Sent: Wednesday, April 25, 2012 11:52 AM
To: White, Charles
Subject: Re: Draft Interim Temperature Control Measures

Charlie,

The proposed measures look good. I understand that the UNFFR Draft EIR will help inform future decisions and am working diligently towards its completion.

Sincerely,

Peter Barnes
Engineering Geologist
Division of Water Rights
State Water Resources Control Board
Phone: (916) 445-9989
Email: pbarnes@waterboards.ca.gov
>>> "White, Charles" <COW1@pge.com> 4/2/2012 2:28 PM >>>
ERC Members,

Attached is the draft Interim Temperature Control Measures recommendations. These are recommendations that we discussed at the February and March ERC meetings. I would like to get your comments April 26th.

This is also posted on the RCC ERC website.

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(925) 487-5270 Cell
cow1@pge.com

White, Charles

From: Dave Steindorf <dave@americanwhitewater.org>
Sent: Thursday, April 26, 2012 4:33 PM
To: White, Charles
Subject: Re: Draft Interim Temperature Control Measures

Charlie,
This report has my approval to go to FERC.
Dave

Dave Steindorf
California Stewardship Director
American Whitewater
4 Baroni Drive
Chico, CA 95928
Office 530.343.1871
Cell 530.518.2729

Join or donate today!
www.americanwhitewater.org

On Apr 2, 2012, at 2:28 PM, White, Charles wrote:

ERC Members,

Attached is the draft Interim Temperature Control Measures recommendations. These are recommendations that we discussed at the February and March ERC meetings. I would like to get your comments April 26th.

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<Interim Temperature Control Measures (ERC Review)_JA1.docx>

ATTACHMENT 14

DRAFT

Biological Issues Associated with the Contemplated Lake Almanor Water Temperature Curtain at the Prattville Intake

Dave Vogel, Senior Scientist
Natural Resource Scientists, Inc.
P.O. Box 1210
Red Bluff, CA 96080

Summary

A limited assessment of some of the more prominent biological issues associated with a potential water temperature curtain at Lake Almanor's Prattville intake was conducted; it is not comprehensive and was restricted to readily available documents. However, based on this assessment, it is evident that major uncertainties exist as to potential fishery resource benefits that may result from the curtain. The ecological impacts are unknown, but the risk to the resource appears to be high. The installation of water temperature curtains in Lake Almanor and Butt Valley Reservoir may be particularly risky propositions because of the tenuous nature of the reservoir ecosystems and predicted adverse impact to the fishery resources.

Based on documents reviewed, I concluded that the potential benefits that may result in the Rock Creek – Cresta reach of the NFFR are vague and speculative. Most importantly, none of the documents provided a clear description of the fishery resource tradeoffs between presumed increased trout growth (during late summer) for an unknown number of fish in the NFFR bypassed reaches versus the adverse impacts to the substantial trout fishery in upstream reservoirs. This circumstance is mostly attributable to a lack of detail on modeling assumptions/limitations and the absence of a comprehensive integration of modeling scenarios for various alternatives under consideration for temperature control. Clearly, the magnitude of those tradeoffs must be articulated before a decision can be made as to the overall benefits or detriments of the temperature curtain.

It's apparent that advocating for installation of the temperature curtain is premature until additional research and studies are conducted. However, given the uncertainties with the Prattville curtain, the anticipated biological impacts, and intangible benefits, it is unclear why the curtain option is still under consideration. A clearly-defined, integrated description of specifically how the temperature curtain may affect the fishery resource from Lake Almanor to the downstream NFFR reaches and limitations on modeling uncertainties is essential.

Introduction

The following is a limited assessment of biological issues associated with a proposed temperature curtain in front of PG&E's Prattville Intake in Lake Almanor. The objective of this action is solely focused on reducing water temperatures in the North Fork Feather

> *bypassed reaches (PG&E, 2002a,c). We do not consider these model results to be adequate to evaluate conditions proposed in the final SA* [Settlement Agreement], *since proposed MIFs* [minimum instream flows] *would vary considerably for the model period (March 1 to September 30). Therefore, we conclude that modeling additional scenarios, including incorporation of the proposed and recommended flow regimes would provide the information needed to assess the effects that implementing the potential control measures identified in the Rock Creek – Cresta SA and the Interior and FS filings with the Commission dated December 1, 2003, would have on the thermal regime of Lake Almanor, Butt Valley Reservoir, and the NFFR."* (FERC 2004)

And, although FERC concluded that there may be opportunities to reduce NFFR water temperatures, the draft EIS states:

> *"However, available information is not sufficient to determine the effects that modifying the Prattville intake in conjunction with PG&E proposed and agency recommended water level and flow regime restrictions for the project would have on the thermal regime of Lake Almanor, Butt Valley Reservoir, and the NFFR. Furthermore, altered operations (particularly with a modified Prattville intake) would change the hydrodynamics of Lake Almanor and consequently alter DO profiles in the reservoir."*

> *"The combination of alteration of the thermal and DO conditions in Lake Almanor could substantially shift the ability of the reservoir to support its existing coldwater and warmwater fisheries. Using the coldwater in Lake Almanor and/or shifting operations of the Caribou developments could also affect the thermal regime and DO levels in Butt Valley reservoir and could adversely affect the existing trophy rainbow and brown trout fishery of the reservoir. We agree with FS and Interior that additional temperature and DO modeling is needed prior to implementing any structural modifications. PG&E is currently conducting this modeling effort as part of the Rock Creek – Cresta Project settlement."*

The summer stratification characteristics in Lake Almanor vary significantly between years (Gast 2004) indicating that modeling those variations would be difficult without sufficient validation of model outputs with empirical data. Comparing empirical data for water temperature profiles collected by the California Department of Water Resources, Gast (2004) clearly demonstrated the large variations in temperature profiles between years. It is not evident that the Prattville model validation accounted for those large variations between years. In fact, it appears that an average of June, July, and August 2000 water temperature profiles (three separate average profiles) were used in the hydraulic modeling effort (Ettema et al. 2004). These average profiles would not reflect the large variability in summertime profiles evident in Lake Almanor. For example, Gast (2004) provides data comparing July profiles in 1995 and 2002 where a 5-6°C variation between years was evident at varying depths in the epilimnion and a 3-4°C variation at

varying depths in the hypolimnion. It is not clear how or if the modeling efforts accounted for such large variations. Such large variations would undoubtedly affect modeling outputs.

It is also not clear if and/or how the Lake Almanor hydraulic modeling effort accounted for between-month sequential changes in conditions with the modeled Prattville curtain in place. Although it is not entirely clear to me, the report by Ettema et al. (2004) suggests that the modeling efforts treated June, July, and August as independent modeling runs. It appears that each month's model runs were initially established with baseline conditions reflecting water profiles without the curtain. If not, it should be clarified. If so, those conditions would not reflect how the Prattville curtain would affect water temperature profiles in Lake Almanor over the course of the summer, not just in isolated months, treated independently. Operation of the Prattville curtain will alter Lake Almanor's hydrodynamics (FERC 2004). For example, during August conditions, with the temperature curtain in place, the water temperature profile would have been established based on how the sequential June and July conditions led up to the August conditions. With the curtain in place, potential depletion of the cold water hypolimnion could be significantly reduced by August and a significant decline in thermocline depth could occur during the summer.

The SNTEMP model for the NFFR was not reviewed for this assessment. However, if the anticipated reduction in water temperatures in the Rock Creek – Cresta reach is anticipated to be relatively small, it will be important to examine the temperature validation data for the NFFR modeling effort. For example, Bartholow (2000) states: "*SNTEMP predicts well, generally less than 0.5 C on average and less than 1.5 C most of the time, given representative input data.*"

Because the ultimate goal of the temperature control curtain is to reduce water temperatures in downstream NFFR reaches, the modeling outputs must be viewed in the context of variable validities of each model. For example, each of the reservoir and stream reach models possesses some variation in accuracy compared to actual conditions. Each model's departure from actual conditions compound the problem as the independent model outputs are built onto one another. Caution should be exercised to ensure that the final model outputs for the downstream-most reaches of the NFFR are not interpreted to portray accurate results when the models themselves may not capable or sensitive enough to provide that level of accuracy.

Potential Benefits to Trout in Downstream Reaches of the NFFR

The mainstem dams on the NFFR block upstream movements of all fish and do not possess fish passage facilities (FERC 1996, FERC 2004). Under natural conditions without dams and during summer periods when riverine water temperatures increased, fish could have migrated to upstream reaches seeking cooler water. FERC (1996) reported[4] that before construction of the Rock Creek – Cresta Project in 1950, an excellent trout fishery existed in the NFFR reach now bounded by the Rock Creek

[4] Citing USFS 1938, Wales and Hanson 1952, and USFWS 1948.

development. The NFFR reach now bounded by the Cresta development was limited to only early season use because of warm, midsummer temperatures. Most notably, FERC (1996) stated that:

> *"The creation of the reservoirs* [Rock Creek and Cresta], *along with flow reduction in the bypass reaches and increased water temperatures, changed the NFFR's aquatic habitat to favor nongame species rather than trout."*[5]

Moyle et al. (1983) describe hydrologic characteristics of the NFFR reach with the four impoundments (Poe, Cresta, Rock Creek, and Belden) as follows:

> *"The annual flow regime has been highly modified, so that former extreme spring floods and summer low flows have been largely eliminated."*

This indicates that the existing summertime flows are now higher than they were historically, through releases of stored water. With summertime flows higher, water temperatures could now be lower than historical conditions in these reaches, but is speculative without data to support that premise. Because construction of the Rock Creek – Cresta Projects blocked the migratory corridor, trout cannot migrate to thermal refugia in upstream reaches. Apparently, the provision of fish passage at these dams has not been considered a viable option. If fish passage was provided, it could partially obviate the need for temperature control at Almanor. It would appear that the thermal curtain at Prattville would, in part, mitigate for effects of increased NFFR temperatures and fish blockage caused by the Rock Creek – Cresta Project. It is particularly relevant that in 1996 FERC concluded that the provision of fish passage at Rock Creek and Cresta Dams *"... is not necessary to complete the life cycle of native species in the NFFR and, therefore, we do not recommend that the need for fish passage be investigated."* (FERC 1996).

The existing use of water temperature curtains in the northern California Reservoirs of Lewiston and Whiskeytown and the temperature control device at Shasta Reservoir are for the specific purpose of protecting winter-run Chinook salmon eggs during incubation. Salmon eggs have a very narrow thermal tolerance. At the upper limit of salmon eggs thermal tolerance, just a degree or two Celsius increase can cause major mortality (e.g., 100% mortality at 16.7°C). Juvenile and adult rainbow trout do not have such a very narrow thermal tolerance as compared to salmon eggs. The biological intent of the Prattville temperature curtain is to provide optimal, not non-lethal, thermal conditions for trout rearing in specific reaches of the NFFR. Temperatures slightly exceeding 20°C would not cause fish mortality, although the conditions would be sub-optimal. In fact, rainbow trout can tolerate water temperatures as high as 25.5°C for short periods with no mortality[6] (Leitritz and Lewis 1976). Piper et al. (1982) lists 25.5°C as the upper range in temperature requirement for rainbow trout; water temperatures exceeding approximately

[5] Citing USFWS 1962, Moyle et al. 1983, and PG&E 1979.

[6] "It is quite generally agreed that yearling and adult rainbow trout can withstand temperatures up to 78°F for short periods of time without harmful effect." (Leitritz and Lewis 1976).

25.5°C are potentially lethal (Hunter 1991). Lee and Rinne (1980) reported a critical thermal maxima[7] of 29.35°C for rainbow trout acclimated to 20°C. Scott and Crossman (1973) state:

> *"Rainbow trout are most successful in habitats with temperatures of 70°F (21°C) or slightly lower, but so long as there is cooler, well-oxygenated water into which they can retreat they can thrive in lakes which warm at the surface to well over 70°F (21°C) for long periods in the summer."*

This upper criterion is consistent with Raleigh et al. (1984) (as cited by Gast 2004) reporting an upper preferred temperature of 21°C for adult rainbow trout.

Although the reasons why are not fully known or understood, it is apparently empirically evident that trout survive in the Rock Creek - Cresta Reach under existing thermal conditions, but are outnumbered by other warmer-water species (FERC 1996, FERC 2004). In fact, FERC (1996) indicated that the creel surveys from 1981 to 1985 in each of the Rock Creek and Cresta bypassed stream reaches showed that wild rainbow trout made up 45% of the anglers' catch. The draft FERC EIS describes the trout fisheries in the NFFR bypassed reaches as in "*good condition*" (FERC 2004). Trout may find thermal refugia in tributaries or the mainstem (e.g., deep pools or near tributary confluences) at the hottest days in summer or water temperatures may not be a limiting factor for trout in this reach. With the exception of 1977, Moyle et al. (1983) found that, "*During most summers, rainbow trout probably found temperatures optimal for growth in the lower reach...*" downstream of Rock Creek dam. During the severe drought of 1977, Moyle et al. (1983), citing PG&E records, found that with very low flows in the Rock Creek bypassed reach, summer water temperatures (maximum daily) were sub-optimal (exceeding 20°C) and approached, but did not exceed, lethal limits for rainbow trout.

However, trout spawning habitat/gravels in this reach is considered a significant factor limiting trout populations. FERC (1996), citing CDFG (1988), states that the trout fishery is limited, in part, due to lost spawning habitat:

> *"Rock Creek and Cresta Dams prevent adult trout access to upstream spawning areas in the mainstem and tributaries, and they reduce gravel recruitment from upstream sources. From Rock Creek dam to Poe dam, access to spawning habitat is further restricted by highway and railroad culverts that block passage to 8 of 14 tributaries, within 300 meters of their mouths."*

Additionally, Moyle et al. (1983) suggested that the smaller trout population in the lower reaches of the NFFR (as compared to upper reaches) may be attributable to physical channel habitats available for trout (e.g., poor pool habitat). The authors recommended "*In the lower reach, the continuous stocking of hatchery fish is apparently the only way substantial trout populations can be maintained.*"

[7] "that temperature at which the fish loses its ability to escape lethal conditions" (Lee and Rinne 1980)

The goal of reduced temperatures in trout habitat when existing conditions are near or exceed the upper thermal optimum is desirable, if net adverse impacts don't result from measures to achieve that goal. It appears that the primary purpose for the intended provision of 20°C or less in downstream reaches of the NFFR is to simply achieve some level of improved growth for trout during late summer. For example, the draft FERC EIS provides the following supporting rationale for a combination of increased flows and decreased temperatures in the NFFR bypassed reaches:

> *"The condition of rainbow trout would be expected to improve and could result in anglers catching larger trout from the Seneca and Belden bypassed reaches downstream from the Belden and Rock Creek dams, respectively."* (FERC 2004)

However, based on documents reviewed, I concluded that the potential benefits that may result in the Rock Creek – Cresta reach of the NFFR are vague and speculative. This circumstance is mostly attributable to a lack of detail on modeling assumptions/limitations and the absence of a comprehensive integration of modeling scenarios for various alternatives under consideration for temperature control.[8] The reservoir and river models should be assessed to determine if they are sufficiently accurate, when used in combination, to predict such a small incremental decrease in water temperatures at that location. Additionally, that effort should also include a meaningful description of specifically what resource benefits may result from incremental changes in the existing temperature regime.

Most importantly, none of the documents reviewed provided a clear description of the fishery resource tradeoffs between presumed increased trout growth (during late summer) for an unknown number of fish in the NFFR bypassed reaches versus the adverse impacts to the substantial trout fishery in upstream reservoirs. As stated in the draft FERC EIS (2004): *"At this time, however, the ERC* [Ecological Resources Committee] *has not completed the studies being conducted to determine the feasibility of modifying the Prattville intake to provide cooler water to downstream reaches; and the costs, benefits, and effects (both beneficial and adverse) of modifying the Prattville intake are unknown."* Clearly, the magnitude of those tradeoffs must be articulated before a decision can be made as to the overall benefits or detriments of the temperature curtain.

As a final note, it is important to recognize that experience with temperature curtains elsewhere in northern California demonstrated that the devices functioned differently than predicted and required expensive modifications to improve performance (Gast 2004, cited pers. comm. with G. O'Haver, USBR). Given that circumstance, it would strongly suggest that temperature curtains at the Prattville intake and in Butt Valley Reservoir may be particularly risky propositions because of the tenuous nature of the two reservoir ecosystems and predicted adverse impacts to the fishery resources.

[8] These documents may exist, but were not available for this limited assessment.

In 1996, FERC reported, "*Recently, PG&E and CDFG agreed to delete the Prattville intake improvement and associated temperature monitoring and, in its place, implement as yet unspecified fishery enhancement measures.*" FERC (1996) also concluded, "*We therefore agree that fishery enhancement measures would provide greater benefits for fishery resources than could be obtained by installing temperature control structures at the Prattville and Caribou No. 2 intakes.*" Given the uncertainties with the Prattville curtain, the anticipated biological impacts, and intangible benefits, it is unclear why the curtain option is still under consideration.

Conclusion

It is apparent that considerable uncertainties remain concerning the potential resource benefits or detriments associated with the Prattville temperature curtain. No documents were reviewed that provided any certainty that purported temperature benefits to trout will be realized in the downstream reaches of the NFFR. In fact, it is evident that the temperature curtain may result in overall negative biological impacts to upstream trout fisheries. Notably, although the impacts would be believed to occur with reasonable certainty, evidence for the purported benefits in the NFFR is not compelling, largely because the potential biological benefits are vague and ill-defined. Much, if not most, of the biological issues appear to be a tradeoff of resource benefits that may result from the curtain. The result is a tradeoff of uncertain, undefined benefits of a slight decline in water temperatures during a portion of the summer for reasonably certain adverse impacts to upstream reservoirs. A clearly-defined, integrated description of specifically how the temperature curtain may affect the fishery resource from Lake Almanor to the downstream NFFR reaches and limitations on modeling uncertainties is essential.

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