STATE OF CALIFORNIA
STATE WATER RIGHTS BOARD

In the Matter of Application 18686 of the Estate of James W. Mapes; Application 18709 of Leland A. and Ruby E. Mahle; Application 18710 of Hardin and Edith C. Barry; Application 18711 of Gladys Dorothy Story; Application 18776 of Wagner Brothers; Application 18778 of William F. and Josephine DeWitt; Application 18789 of John and Dorothy W. Capezzoli; Application 18810 of Pierce and Esther A. McClelland; and Application 18814 of Jay Gibson et al. to Appropriate from Eagle Lake in Lassen County

Decision D 1073

ADOPTED MAR 15 '62

1073

DECISION DENYING APPLICATIONS

The above-named applications are for permits to appropriate unappropriated water from Eagle Lake, a closed basin in Lassen County. Each application locates its proposed point of diversion at the inlet portal of an existing tunnel within the S$W\frac{1}{4}$ of S$W\frac{1}{4}$ of Section 22, T32N, R11E*. Water would be diverted from the lake through the

* All section, township, and range references are from Mount Diablo Base and Meridian.

tunnel and released into Willow Creek to flow downstream in a southeasterly direction. The proposed places of use are twenty-five miles or more downstream from Eagle Lake and several miles northwesterly of and upstream from Honey Lake. The essential features of the applications are set forth in Table I. Protests having been received with respect to each of said applications, a public hearing was held before the State Water Rights Board on August 22, 23, and 24, 1961, at Susanville, California, before Kent Silverthorne, Chairman, and William Alexander, Member.

Application 18665 of Tule Irrigation District, filed on April 27, 1959, had been set for hearing at the same time, but the District at the hearing authorized cancellation of said application because of the District's continuing bankruptcy status and its inability to finance its project. The tunnel from Eagle Lake had been built by Tule and Baxter Irrigation Districts in the early 1920's pursuant to permits ultimately revoked by the Board for lack of diligence by Decision RD 29, adopted March 18, 1959. Water had last been exported from Eagle Lake through the tunnel and delivered to District lands for irrigation use in the early 1930's. All the above-named applicants have been negotiating with Tule Irrigation District for use of the District tunnel. The District made it clear that it has not protested any of these applications, and that it will resume negotiations in the event the Board approves subject applications and issues permits thereon.

TABL[illegible]

Substance of Applications to Appropriate from Eagle Lake in Lassen County through Tunnel to Willow Creek for Downstream Use

Appl. No.	Date filed	Applicant	Amounts in acre-feet per annum	Season of diversion to storage	Place of use acreage	Purpose*
18686	5-1-59	Estate of James W. Mapes	6000	Oct. 1 to July 15	1700 acres within gross service area of 3219.4 acres within T29N, R14E, and R15E	I, S, R
18709	5-15-59	Leland A. & Ruby E. Mahle	360	"	180 acres within T29N, R14E	I, S
18710	5-15-59	Hardin & Edith C. Barry	360	"	180 acres within T29N, R14E	I, S
18711	5-15-59	Gladys Dorothy Story	320	"	150 acres within T29N, R14E	I, S
18776	6-8-59	Wagner Brothers	600	"	240 acres within T29N, R14E	I, S
18778	6-9-59	William F. and Josephine DeWitt	1500	"	452.8 acres within a gross service area of 600 acres within T29N, R15E	I, S, R
18789	6-12-59	John and Dorothy W. Capezzoli	1050	"	350 acres within T29N, R15E	I, S, R
18810	6-19-59	Pierce and Esther A. McClelland	2500	"	922.2 acres within a gross service area of 2310 acres within T29N, R14E and R15E	I, S, R
18814	6-22-59	Jay Gibson et al.	3000	"	1250 acres within a gross service area of 1445 acres within T29N, R14E and R15E	I, S
		TOTAL ACRE-FEET	15,690**			

*I - Irrigation; S - Stockwatering; R - Recreational. All applications were amended during the hearing to delete the request for recreational use.

**Reduced at hearing to about 13,000 afa. See page 5.

The protestants who participated in the hearing included the County of Lassen, four agencies of the State of California, the Lassen National Forest, and many local organizations and individuals.

The most critical issues relate to the availability of unappropriated water and whether export of Eagle Lake water would best conserve the public interest, as required by Sections 1375 and 1255 of the Water Code, respectively. Prior permits had been issued on the theory that reduction of the lake level would "create" unappropriated water by reduction of evaporation losses. The present applicants do not rely on diminution of evaporation losses for unappropriated water (2 RT 39*). Their answer to protests indicate they rely on the presence in Eagle Lake of surplus water above the floor of the present upper tunnel portal. The applicants stipulated that no diversions would be made from the lake that would reduce the elevation of Eagle Lake below 5095 feet above sea level (1 RT 53 and 60). This is the equivalent of 78 feet, Bly Datum, the standard used for much of the evidence relating to elevation.

The proposed places of use of the applicants are all located within the Willow Creek or Susan River adjudicated areas, and the Eagle Lake water would serve as a source of supplemental

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* Volume 2 of the Reporter's Transcript, page 39.

supply during years or seasons of deficiency (1 RT 113, 114). In most instances the applicants are seeking water required for an extra crop of hay or alfalfa in the naturally dry late summer months. Although subject applications were filed for a collective total of 15,690 acre-feet of water per year (Table I), the applicants, during the hearing, modified some requested amounts. The modified amounts of all applications total about 13,000 acre-feet a year at Eagle Lake, which, allowing for anticipated transmission losses of about 20%, might deliver about 10,500 acre-feet a year to the places of use (2 RT 23).

Ground water is an alternative source of supplemental supply in at least parts of the Willow Creek and Susan River adjudicated areas. This source has not been exhaustively investigated, but some ranchers in this area in recent years have developed wells that have met their supplemental requirements. Application 18793 of Ray C. and Elberta M. Fraley, also proposing diversion from Eagle Lake and set for hearing with the above-named applications, was withdrawn and canceled as the result of bringing in a productive well in the Susan River area (1 RT 120). Several other wells have recently been brought into production in this area.

Watershed

Eagle Lake is located about 17 miles northwesterly of Susanville. It is about 13 miles long and varies from less than one-half to 4 miles in width. All water supply is derived from about 435 square miles of drainage, ranging from high mountain

vegetation on the west at Red Cinder Mountain to typical mountain forest around the south end of the lake to semi-arid sagebrush around the north end of the lake. Elevations range from about 5100 feet at the lake to about 8000 feet at the headwaters of Pine Creek, the major tributary to the lake. It has no natural surface outlet and no known natural subsurface outlet.

Water Supply

Records of the flow of Pine Creek have been maintained since about 1950. The change in level of Eagle Lake has been recorded or estimated by various persons and organizations since about 1900, the first reliable measurements starting in about 1915 (2 RT 130). There are long periods of time during which no measurements were taken between 1932 and 1946. The Department of Water Resources started a measurement program during 1956. This information was correlated with long-time records of flow of Indian Creek in Plumas County, along with rainfall measurements, evaporation measurements, and area capacity curves to determine water supply to Eagle Lake for the period 1919-20 to 1959-60 (2 RT 130-136). The results of this study are set forth in Fish and Game Exhibit No. 2 and are incorporated in Column 3 of Table II of this decision.

As Eagle Lake has no natural outlet, all inflow thereto not diverted out of the watershed would be consumed by transpiration or evaporation. Lake levels would necessarily be affected by export of water. An unknown quantity was diverted through the Eagle Lake tunnel by the Tule and Baxter Creek Irrigation Districts

from about 1923 to the winter of 1935-36 (Staff 1, Decision RD 29). The amount diverted from the lake during the period 1923 through 1930 was estimated to be 140,000 acre-feet (3 RT 12). No estimates were made for the period 1930 to 1936.

Present Utilization of Eagle Lake

Eagle Lake in recent years is being developed as an outstanding recreational area. A total of over $500,000 has been spent by the County of Lassen, California Wildlife Conservation Board, California Department of Fish and Game, and U. S. Lassen National Forest to improve and develop the recreation facilities at Eagle Lake (2 RT 47 and 52). Several subdivisions have been approved, and others are being considered on the shores of the lake, with individual lots selling from $600 to $4,000 (2 RT 51). Based on present trends and prices, it is estimated that in ten years there may be about $4,000,000 of real properties around the lake compared to $129,560 as of 1961-62. Any such increase in the tax base would result in a substantial reduction in the county tax rate (3 RT 105-6).

The main fisheries resource is the native Eagle Lake trout (Salmo gairdnerii aquilarum), a variety of rainbow. Tui chubs, which furnish the main item of food for the Eagle Lake trout, breed and feed for the most part in the shallow northern two-thirds of the lake (3 RT 47, 53-56).

In the past, the Eagle Lake trout was depleted almost to the point of extinction by a combination of two factors. Firstly, the suitable areas for spawning are extremely limited. Pine Creek, the only sizable tributary to the lake, is not readily accessible during spawning season. In the lower reaches above the lake, the creek at that time normally dwindles to a trickle, preventing upstream migration of the trout to spawning areas. Secondly, a combination of dry years and diversion of water during the 1920's and early 30's lowered the level of the lake and thus reduced the size of the northern shallow two-thirds thereof to such an extent that much of the habitat of the tui chub was eliminated, thus reducing the forage available for the Eagle Lake trout (Staff 2, 3 RT 54-57).

The California Department of Fish and Game started a rehabilitation program in 1948. An egg taking station was built on Pine Creek and hatching ponds constructed at Crystal Lake Fish Hatchery east of Burney in 1956 to try to re-establish the Eagle Lake trout. At the start of the project as few as six spawners per year were counted in Pine Creek. From this small start the program has progressed to the planting of about 100,000 yearling Eagle Lake trout along with about 200 adult brood stock during 1961. All of the planted fish have been marked and a very few wild fish are found today (F & G 10). That Eagle Lake is an excellent habitat for the Eagle Lake trout is shown by the rapid growth of the planted fish.

The lake furnishes excellent conditions for boating, water skiing, and swimming. Gallatin Beach at the south end of the lake is one of the finest beach areas in the State (2 RT 50).

The County of Lassen has constructed a launching ramp and other facilities at the south end of the lake financed by means of a $50,000 loan from the State of California, approved by the Small Craft Harbors Commission. This ramp extends from elevation 5105 down to 5095. Existing water level as of August 2, 1961, was 5097.7 (1 RT 35). At the present level of the lake, sizable boats can be launched and any lowering thereof would necessitate additional work on the ramp and dredging of the lake bottom in the vicinity thereof (1 RT 39-40).

There are numerous other benefits derived from or dependent upon Eagle Lake, including United States Forest Service campgrounds and summer homes (3 RT 3, 80-83; Forest Service 2-16); irrigation of adjoining land (2 RT 76); subirrigation of natural grasses (2 RT 81, 82); biologic camp for Chico State College (2 RT 52-56); support of water levels in wells near the lake (2 RT 61, 62); drinking water for livestock and wildlife (2 RT 92); and protection of wildlife habitat (3 RT 63, 64). All of these interests indicate that the lake level is undesirably low at the present time and that conditions would be improved if the lake level were higher. Any lowering of the lake would expose large areas of mud and prevent or curtail use of the lake for all of the aforementioned uses. Testimony on behalf of the Department of Fish and Game indicated that any lowering of the lake's surface below about elevation 82 Bly (USGS 5099) is detrimental to the fisheries of the lake (3 RT 55-58).

The application maps (Staff 1) contain much information taken from the maps filed over forty years ago with the applications of the Tule and Baxter Irrigation Districts. Cross-references to various recorded documents indicate that holders of most of the patented lands above the shores of Eagle Lake "granted" their riparian rights to Leon Bly, the predecessor in interest of the Districts. The record is not clear whether these grants resulted in the severance and loss of all riparian rights covered by the grants. A reference to the schedule of riparian rights on the application maps shows that no riparian rights were "granted" with respect to certain portions of the shores of Eagle Lake, including areas where water has been and is being beneficially used for recreational or stockwatering purposes. Said maps also indicate that the Eagle Lake shore boundary of patented lands was established about 10 feet higher in elevation than the present shore line of Eagle Lake. The United States has reserved this intervening area for U. S. Forest Service camp sites and beach use (3 RT 76; Forest Service 1). No riparian rights have been granted away with respect to this intervening area, and this is the area which at present is most valuable for swimming, picnicking, and access to Eagle Lake.

Discussion

Viewed in its most favorable light, the project of the applicants is marginal in many respects. There is no existing contract covering the use of the Tule Irrigation District tunnel,

and the District itself is and has for many years been in bankruptcy. Many District facilities would have to be placed in operating condition. The tunnel inlet would have to be rebuilt at considerable expenditure in accordance with a permit not yet secured from the State. Many miles of the Willow Creek Bypass Canal would have to be refurbished at about $1,000 a mile, and there is a legal question as to the District's rights to use said canal, partly as a result of the nonuse thereof by the District that has lasted for so many years. Problems and possible litigation might arise from the quality of Eagle Lake water when introduced into the Willow Creek stream system. The applicants have no existing organization to operate their project.

Of even greater importance than the foregoing considerations is the lack of water available for the applicants, bearing in mind that no diversion from Eagle Lake is to drain down the lake level below 5095 feet above sea level (Bly 78). When operated in accordance with this limitation, Table II shows that 10,000 acre-feet (which is less than the amount requested by applicants) would be available in only 9 out of 41 years of record, with lesser amounts available in an additional 2 years. For the most part, this water would be available only during periods of excessive rainfall and not during the dry years when supplemental water is needed by the applicants.

The basic assumptions used for the operation study set forth in Table II are as follows:

1. Maximum diversion for irrigation purposes would be 10,000 acre-feet per annum when available.

TABLE II
EAGLE LAKE OPERATION STUDY FOR 10,000 AFA[a] DRAFT
WITH NO DIVERSION TO REDUCE EAGLE LAKE
BELOW 5095 FT. ABOVE SEA LEVEL
(BLY 78)

Year	1 Elevation Bly datum (b)	2 Storage start of water year in 1000 af	3 Inflow for water year in 1000 af	4 Total quantity for year in 1000 af	5 Surface area of Eagle Lake in acres	6 Evaporation 2.3 ft. per acre per year	7 Storage end of water year in 1000 af	8 Elevation Bly datum	9 Draft maximum of 10,000 in 1000 af.	10 Storage end of water year after diversion in 1000 af	11 Elevation Bly datum	12 Diversion
1919-20	80.5[c]	217.0	19.0	236.0	22160	50.9	185.1	78+	10.0	175.1	78+	10,000 ac-ft
21	78+	175.1	95.9	271.0	22735	52.3	218.7	80+	10.0	208.7	80+	10,000 ac-ft
22	80+	208.7	72.5	281.2	22896	52.7	228.5	81+	10.0	218.5	80+	10,000 ac-ft
23	80+	218.5	32.3	250.7	22427	51.3	199.4	79+	10.0	189.4	79+	10,000 ac-ft
24	79+	189.4	10.7	200.1	21358	49.2	150.9	77+	0.0	150.9	77+	No diversion
25	77+	150.9	25.8	176.7	20550	47.2	129.5	76+	0.0	129.5	76+	No diversion
26	76+	129.5	38.3	167.8	20213	46.5	121.3	75+	0.0	121.3	75+	No diversion
27	75+	121.3	70.9	192.2	21102	48.6	143.6	76+	0.0	143.6	76+	No diversion
28	76+	143.6	41.8	185.4	20877	48.1	137.3	76+	0.0	137.3	76+	No diversion
29	76+	137.3	13.7	151.0	19224	44.2	106.8	74+	0.0	106.8	74+	No diversion
1929-30	74+	106.8	50.9	157.7	19638	45.2	112.5	75+	0.0	112.5	75+	No diversion
31	75+	112.5	14.8	127.3	17662	40.6	86.7	73+	0.0	86.7	73+	No diversion
32	73+	86.7	36.1	122.8	17175	39.5	83.3	72+	0.0	83.3	72+	No diversion
33	72+	83.3	18.2	101.5	14176	32.6	68.9	71+	0.0	68.9	71+	No diversion
34	71+	68.9	16.3	85.2	11060	25.4	59.8	70+	0.0	59.8	70+	No diversion
35	70+	59.8	49.5	109.3	15530	35.7	73.6	72+	0.0	73.6	72+	No diversion
36	72+	73.6	42.3	115.9	16424	37.8	78.1	72+	0.0	78.1	72+	No diversion
37	72+	78.1	34.1	112.2	16022	36.8	75.4	72+	0.0	75.4	72+	No diversion
38	72+	75.4	120.3	195.7	21216	48.8	146.9	76+	0.0	146.9	76+	No diversion
39	76+	146.9	18.6	165.5	20118	46.3	119.2	75+	0.0	119.2	75+	No diversion

(a) AFA = acre-feet per annum
(b) Zero Bly Base = 5017.05 feet above sea level. The fraction of the foot is disregarded herein.
(c) Represents the elevation of Eagle Lake in the summer of 1961 when this operation study was made.

TABLE II (CONTINUED)
EAGLE LAKE OPERATION STUDY FOR 10,000 AFA DRAFT
WITH NO DIVERSION TO REDUCE EAGLE LAKE
BELOW 5095 FT. ABOVE SEA LEVEL
(BLY 78)

Year	1 Elevation Bly datum	2 Storage start of water year in 1000 af	3 Inflow for water year in 1000 af	4 Total quantity for year in 1000 af	5 Surface area of Eagle Lake in acres	6 Evaporation 2.3 ft. per acre per year	7 Storage end of water year in 1000 af	8 Elevation Bly datum	9 Draft maximum of 10,000 in 1000 af	10 Storage end of water year after diversion in 1000 af	11 Elevation Bly datum	12 Diversion
1939-40	75+	119.2	67.5	186.7	20923	48.1	138.6	76+	0.0	138.6	76+	No diversion
41	76+	138.6	58.4	197.0	21258	48.8	148.2	76+	0.0	148.2	76+	No diversion
42	76+	148.2	74.6	222.8	21894	50.4	172.4	78+	6.4	166.0	78.0	6,400 ac-ft
43	78.0	166.0	73.3	239.3	22226	51.2	188.1	79+	10.0	178.1	78+	10,000 ac-ft
44	78+	178.1	33.2	211.3	21658	49.8	161.5	77+	0.0	161.5	77+	No diversion
45	77+	161.5	37.4	198.9	21320	49.1	149.8	77+	0.0	149.8	77+	No diversion
46	77+	149.8	50.1	199.9	21355	49.2	150.7	77+	0.0	150.7	77+	No diversion
47	77+	150.7	26.6	177.3	20574	47.3	130.0	76+	0.0	130.0	76+	No diversion
48	76+	130.0	32.4	162.4	19297	44.4	118.0	75+	0.0	118.0	75+	No diversion
49	75+	118.0	25.3	143.3	18815	43.3	100.0	74+	0.0	100.0	74+	No diversion
1949-50	74+	100.0	38.2	138.2	18472	42.6	95.6	74+	0.0	95.6	74+	No diversion
51	74+	95.6	37.6	133.2	18133	41.8	91.4	73+	0.0	91.4	73+	No diversion
52	73+	91.4	115.1	206.5	21562	49.6	156.9	77+	0.0	156.9	77+	No diversion
53	77+	156.9	54.7	211.6	21662	49.9	161.7	77+	0.0	161.7	77+	No diversion
54	77+	161.7	43.8	205.5	21538	49.5	156.0	77+	0.0	156.0	77+	No diversion
55	77+	156.0	25.5	181.5	20732	47.7	133.8	76+	0.0	133.8	76+	No diversion
56	76+	133.8	132.4	266.2	22665	52.2	214.0	80+	10.0	204.0	79+	10,000 ac-ft
57	79+	204.0	56.2	260.2	22578	52.0	208.2	80+	10.0	198.2	79+	10,000 ac-ft
58	79+	198.2	86.2	284.4	22948	52.8	231.6	81+	10.0	221.6	80+	10,000 ac-ft
59	80+	221.6	25.0	246.6	22372	51.5	195.1	79+	10.0	185.1	78+	10,000 ac-ft
1959-60	78+	185.1	38.6	223.6	21902	50.4	172.8	78+	6.8	166.0	78.0	6,800 ac-ft
61	78.0	166.0			below normal year				0.0			No diversion

2. There would be no diversion for irrigation purposes if the level of Eagle Lake would be below elevation 5095 USGS (Bly 78) at the end of September (end of water year).

3. The water supply in the future would follow a a pattern similar to historic records.

A monthly operation study of the lake indicates that, if applicants were permitted to divert water for irrigation purposes at any time the lake level was at or above elevation 5095 USGS (Bly 78), there would be a few additional years during which small quantities could be diverted. During these years the level of Eagle Lake would drop below elevation 5095 USGS (Bly 78) early in the summer and would not fill as high the following year.

Considerable evidence indicated that recreational use and fish and wildlife propagation require Eagle Lake water levels to be higher than at present for optimum use. Any export of lake water and the resulting lowering of lake levels would be detrimental, not only to fish and wildlife but to recreation in its many aspects. Uses of water in this closed basin for said purposes are found to be important and beneficial. See City of Los Angeles v. Aitken, (1936) 10 Cal. App. 2d 460, 52 P. 2d 585, and City of Elsinore v. Temescal Water Co., (1939) 36 Cal. App. 2d 116, 97 P. 2d 274. Fish and Game Exh. 7 shows that a recurrence of the historical forty-one year weather cycle used in its study, starting with the lake at its 1961 level and without any export whatsoever, would terminate with the lake at about the same level as at the start of the period. Even without export, evaporation would on occasion lower Eagle Lake to an undesirable extent.

Conclusion

The evidence presented at the hearing indicates, and the Board finds that, except in infrequent years, all Eagle Lake water is required to remain in Eagle Lake for recreational, stockwatering, and related uses, which beneficial uses are both pursuant to existing right and in the public interest; that insufficient unappropriated water is available to justify approval of subject applications; and that it would best conserve the public interest to reject and deny all of subject applications.

From the foregoing findings, the Board concludes that all of subject applications should be denied.

IT IS HEREBY ORDERED that Applications 18686, 18709, 18710, 18711, 18776, 18778, 18789, 18810, and 18814 be, and the same are, denied.

Adopted as the decision and order of the State Water Rights Board at a meeting duly called and held at Sacramento, California, this day of , 1962.

Kent Silverthorne, Chairman

Ralph J. McGill, Member

W. A. Alexander, Member