

Royce Lake #2 wild trout management plan

State of California

Department of Fish and Wildlife

Heritage and Wild Trout Program

Central Region

2013



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Executive summary

California Fish and Game Code (Chapter 7.2, Section 1726.4 (b)) states that it is the intent of the Legislature that “the department [specifically, the California Department of Fish and Wildlife (CDFW) Heritage and Wild Trout Program (HWTP)], in administering its existing [heritage and] wild trout program, shall maintain an inventory of all California trout streams and lakes to determine the most suitable angling regulations for each stream or lake. The department shall determine for each stream or lake whether it should be managed as a wild trout fishery, or whether its management should involve the temporary planting of native trout species to supplement wild trout populations that is consistent with this chapter.” Section 1726.4 (b) additionally states that “biological and physical inventories prepared and maintained for each stream, stream system, or lake shall include an assessment of the resource status, threats to the continued well-being of the fishery resource, the potential for fishery resource development, and recommendations, including necessary changes in the allowed take of trout, for the development of each stream or lake to its full capacity as a fishery.”

Furthermore, California Fish and Game Code (Chapter 7.2, Section 1727 (d)) requires that the CDFW “shall prepare and complete management plans for all wild trout waters not more than three years following their initial designation by the commission, and to update the management plan every five years following completion of the initial management plan.” For clarification, wild trout waters, as stated above, represent waters that have been formally designated by the California Fish and Game Commission as Heritage and/or Wild Trout Waters.

Wild Trout Waters are those that support self-sustaining trout populations, are aesthetically pleasing and environmentally productive, provide adequate catch rates in terms of numbers or size of trout, and are open to public angling. Wild Trout Waters may not be stocked with catchable-sized hatchery trout. Heritage Trout Waters are a sub-set of Wild Trout Waters that highlight wild populations of native California trout found within their historic drainages.

In an effort to comply with existing policy and mandates, the HWTP has prepared a fishery management plan (FMP) for Royce Lake # 2. This FMP is intended largely as an operations guide for internal planning purposes to communicate management direction to the public, other agencies, and trout angling organizations. This FMP is intended to provide direction and list actions necessary to sustain the recreational fishery for the benefit and enjoyment of the angling public. However, actions associated with this FMP are initiated independently, thus any environmental review/permits needed to implement the actions are separate from the FMP itself.

Resource status

Area description

Royce Lakes are located in the John Muir Wilderness (Fresno County), on the crest of the Sierra Nevada Mountains west of Bishop, CA near Pine Creek Pass (Figure 1). Royce lakes are a series of five lakes in the headwaters of French Canyon, tributary to Piute Creek and the South Fork San Joaquin River. Royce lakes reside at approximately 11,700 ft elevation and were stocked with California golden trout (*Oncorhynchus mykiss aguabonita*) by the California Department of Fish and Wildlife (CDFW, then California Department of Fish and Game), beginning in 1953 (Table 1). Stocking continued through 2003 in Royce Lake #1 and #2. Royce Lake #3, #4 and #5 were stocked through 2007. All hatchery trout stocking ceased in the Royce Lakes Basin after 2007.

Royce Lake #2 was designated by the Commission as a Wild Trout Water in 2010, based upon high mountain lake surveys conducted by CDFW in 1996. Royce Lake #2 is located at 11,725 ft elevation and has a surface area of approximately 11 hectares. The high mountain lake surveys determined Royce Lake #2 to be a unique self-sustaining fishery with a relatively high abundance of golden trout, many of which were in the larger size classes (greater than 12 inches).

Royce Lakes are in federally designated wilderness (John Muir Wilderness) and are accessible only by hiking or horseback. The nearest trailhead is the Pine Creek Trailhead, west of Bishop CA. Wilderness permits are required for travel through this area.

Land ownership/administration

- | | |
|---|---|
| <input checked="" type="checkbox"/> U.S. Forest Service | <input type="checkbox"/> State Parks |
| <input type="checkbox"/> Bureau of Land Management | <input type="checkbox"/> National Parks |
| <input type="checkbox"/> CDFW | <input type="checkbox"/> Private |
| <input type="checkbox"/> Other | |

Public access

- | | |
|-----------------------------------|--|
| <input type="checkbox"/> Roadside | <input checked="" type="checkbox"/> Remote/hike-in |
| <input type="checkbox"/> Boat | |

Designations

- | | |
|--|--|
| <input checked="" type="checkbox"/> Wild Trout Water | <input type="checkbox"/> Heritage Trout Water |
| <input type="checkbox"/> Federal Wild and Scenic River | <input checked="" type="checkbox"/> Wilderness |
| <input type="checkbox"/> Other- | |

Area map

Figure 1. Vicinity map of Royce Lake #2.

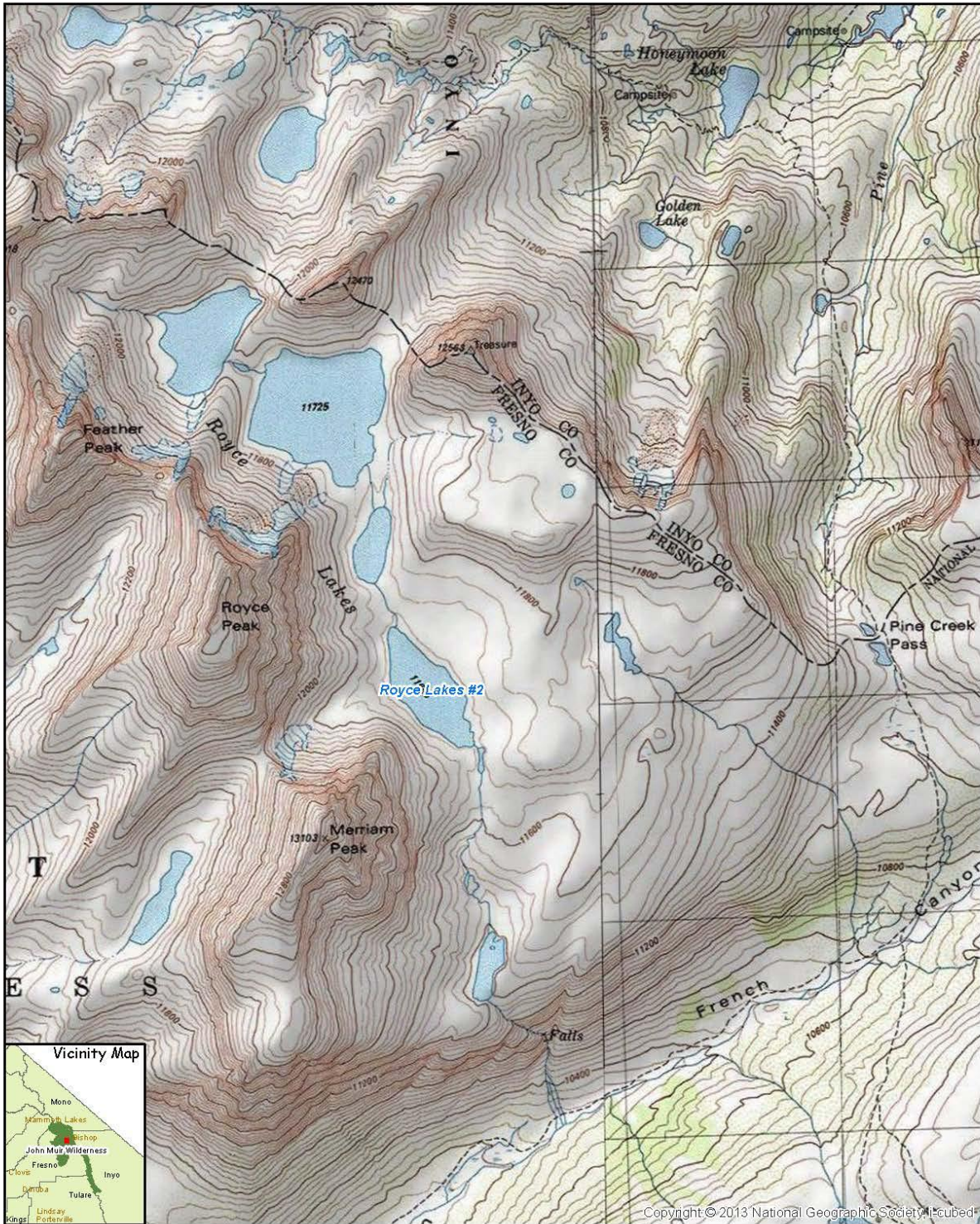


Figure 1
Royce Lakes #2
Fresno County, California



Fishery description

Royce Lake #2 provides a fast action fishery for golden trout, located in a remote wilderness setting. Royce Lake #2 was first stocked in 1953. Stocking frequency from 1953 – 1991 varied between annual stocking to up to ten years between stocking events. Stocking frequency from 1991-2003 occurred every other year, with an allotment of 3,000 fingerlings (Table 1). Stocking ceased after 2003.

Royce lakes were surveyed in 1996 and 2010 (Table 2). Spawning habitat was found to be present in both the inlet and outlet of Royce Lake #2. Size class distribution suggests that Royce Lake #2 is a self-sustaining fishery (Figure 2).

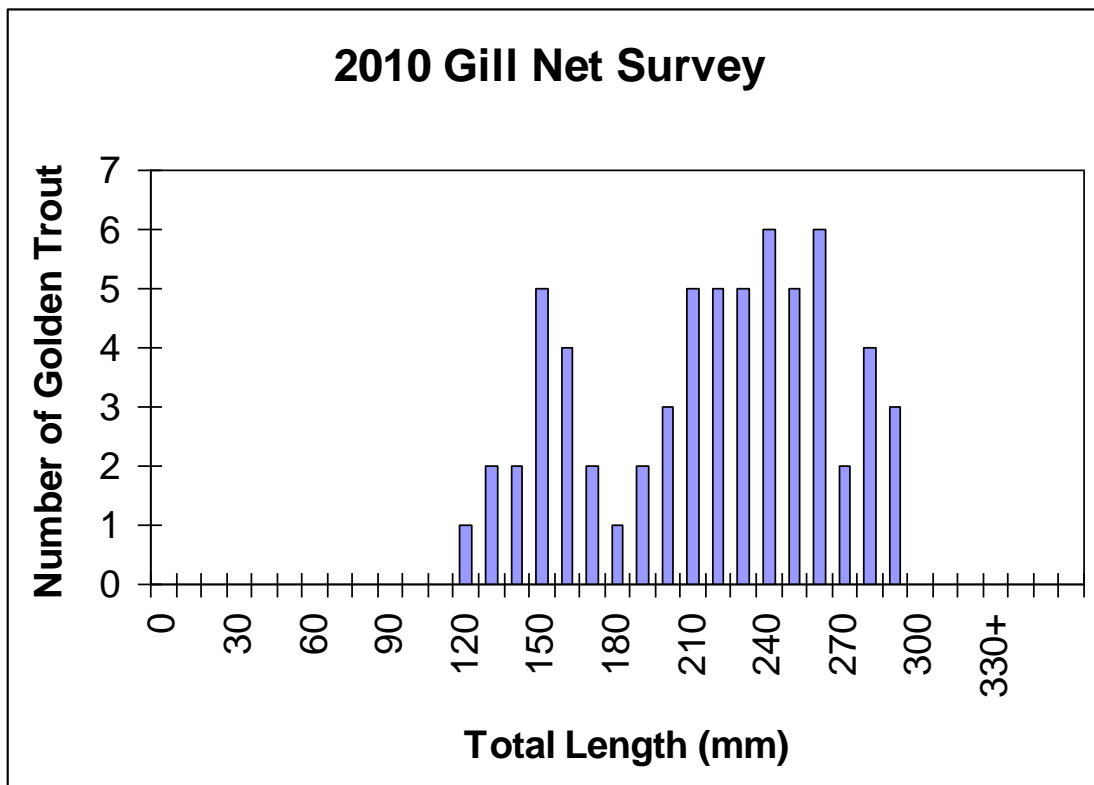
Table 1. Royce Lake #2 stocking frequency

Year	Species	Amount
2003	Golden trout	3000
2001	Golden trout	3000
1999	Golden trout	3000
1997	Golden trout	3000
1996	Golden trout	3000
1995	Golden trout	3000
1993	Golden trout	3000
1991	Golden trout	3000
1981	Golden trout	1786
1979	Golden trout	3000
1977	Golden trout	1200
1974	Golden trout	2250
1973	Golden trout	1956
1971	Golden trout	1000
1970	Golden trout	3040
1965	Golden trout	3000
1964	Golden trout	1600
1962	Golden trout	1600
1959	Golden trout	3000
1953	Golden trout	7600

Table 2. 1996 and 2010 gill net surveys of Royce Lake #2

Year	Water	Survey method	Hours fished	# Fish caught	Average total length (mm)	Minimum total length (mm)	Maximum total length (mm)	Average weight (grams)
1996	Royce Lake #2	Gill Net (1)	13.2	67	236	80	340	153
2010	Royce Lake #2	Gill Net (1)	11	63	212	120	290	100

Figure 2. 2010 length frequency histogram of California golden trout in Royce Lake #2



Water source

Spring

Rain

Snow

Tailwater

Gradient

Low (< 2%)

Medium (2-4%)

High (>4%)

N/A

Fish species

Common name	Scientific name	Native (Y/N)	Listing Status
California golden trout	<i>Oncorhynchus mykiss aguabonita</i>	N	None

Other aquatic species

No other known aquatic species (benthic macroinvertebrates likely, but undocumented).

Fisheries and habitat assessments

Water	Section	Date	Survey type	Reference data/summary report
Royce Lake #2	N/A	8/3/1996	Gill Net	High Mountain Lake Database
Royce Lake #2	N/A	9/13/2010	Gill Net	High Mountain Lake Database

Angler survey data

None

Angling regulations

The angling regulations for Royce Lake #2 fall under the Sierra District General Sport Fishing Regulations for lakes and reservoirs. Regulations in 7.00 (b) (2) are as follows: All lake and reservoirs except those in the Fall River Valley, those in Inyo and Mono counties and those listed by name in the Special Regulations are open all year. Bag limit is five per day and ten in possession.

Known stressors

No known stressors. Royce Lake #2 is located in a pristine wilderness setting with only light human recreational impacts, owing to its remote location and difficulty of access. Recreational fishing pressure is thought to be minimal with no impacts to the fish population.

Management

Management goals and objectives

- Fast action (catch rates \geq 2 fish/hour)
- Trophy (trout \geq 18 inches)
- Heritage trout
- Other

Royce Lake #2 management goals are to maintain a self-sustaining golden trout fishery that is fast action (>2 fish/hr) and comprised of adequate numbers of larger-sized fish (greater than 12inches).

Monitoring

Under the direction of this FMP, Royce Lake #2 will be surveyed every 5 years, beginning in 2018, using a combination of gill netting and angling, two feasible options for assessing a remote lake fishery of this kind. Monitoring will be focused on evaluating reproduction, size class distribution and catch rates that provide a satisfactory wild trout fishery.

Water	Date range (month/year)	Survey type	Survey interval
Royce Lake #2	2018	Gill net	5 Years
Royce Lake #2	2018	Angling	5 Years in conjunction with gill net survey

Angling regulations

Current angling regulations for Royce Lake #2 fall under the Sierra District general regulations. CDFW shall monitor the Royce Lake #2 fishery along with angler satisfaction/preferences to determine if the Sierra District general regulations are adequate in maintaining the proposed management goals or if a special fishing regulation is warranted. Regulations will be used in an adaptive manner to optimize angler opportunities in conjunction with management goals/objectives outlined in the FMP.

Addressing stressors

Due to the remote location of Royce Lake #2, moderate to light recreational use of the basin and the presumption that not all recreationists using Royce Basin are likely to engage in fishing, angling is assumed to have nominal impacts on the self-sustaining population of golden trout present.

Adaptive strategies

This FMP provides guidance and management direction for wild trout resources in the Royce Lake #2 fishery. These management recommendations are based on existing conditions and should be used in accordance with updated information over time. Long-term monitoring of the fishery and associated angler satisfaction should play a central role in future management prescriptions. Any changes to the prescribed management goals and objectives should be based on updated quantifiable data, stakeholder input, HWTP Policy (Bloom and Weaver 2008), the Strategic Plan for Trout Management (Hopelain and Pert 2003), and collaborative (CDFW Headquarter and Central Regional) HWTP review.

References

- Bloom, R. and J. Weaver. 2008. The California Heritage and Wild Trout Program Handbook (Draft). State of California Natural Resources Agency. Department of Fish and Wildlife. Heritage and Wild Trout Program. Rancho Cordova, CA.
- Hopelain, J.S. and E. Pert. 2003. Strategic plan for trout management. State of California Resources Agency. Sacramento, CA.