

**State of California
Department of Fish and Wildlife**

Memorandum

Date: October 29, 2019

To: Sarah Mussulman
Senior Environmental Scientist; Supervisor
Department of Fish and Wildlife
North Central Region
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670

Cc: CDFW North Central Region Fish Files

From: Mitch Lockhart; Environmental Scientist
Department of Fish and Wildlife
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670

Subject: Resource Assessment at Echo Lake, Nevada County

Echo Lake (Lake ID 12518), Nevada County, is a small, off-trail tarn historically aerially stocked by California Department of Fish and Wildlife (CDFW) with golden trout (*Oncorhynchus aguabonita*; GT) fingerlings from 1969 to 2000.

On September 3, 2019, a CDFW Scientific Aid conducted a Visual Encounter Survey (VES) of Echo Lake to determine if any special status diurnal herpetofauna occur at Echo Lake that would preclude the lake from being aerially planted again. The VES began at 11:13 am under clear skies, light wind, and an air temperature of 19° C. The survey concluded at 11:43 am for a total survey effort of 30 minutes. No herpetofauna were observed for the duration of the survey. The lake has no perennial inlet and no outlet, of any sort.

A single trout was observed in shallow water but could not be identified. This observation reinforces results from a gill net survey conducted in 2016, which captured two trout (Chellman 2017). This implies that GT are persisting at Echo Lake and may be naturally reproducing within the lake, but at a very low rate that may not be sustainable. To maintain a GT fishery at Echo Lake, Nevada County, continued planting is necessary. Moreover, the absence of herpetofauna observed at Echo Lake in 2016 and 2019, suggest that continued GT plants will not have deleterious impacts to special status species, such as the Sierra Nevada yellow-legged frog (*Rana sierrae*).

However, the small lake size and lack of appreciable freshwater input may limit

available resources and habitat. Allotment numbers should be kept low to minimize the risk of winter and mid-summer fish kills.

Literature Cited

Chellman, I. Fisheries monitoring in Nevada County - Echo Lake. California Department of Fish and Wildlife; 12/28/2017. [Cited 2020 January 30]. Available from: <http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=152939>

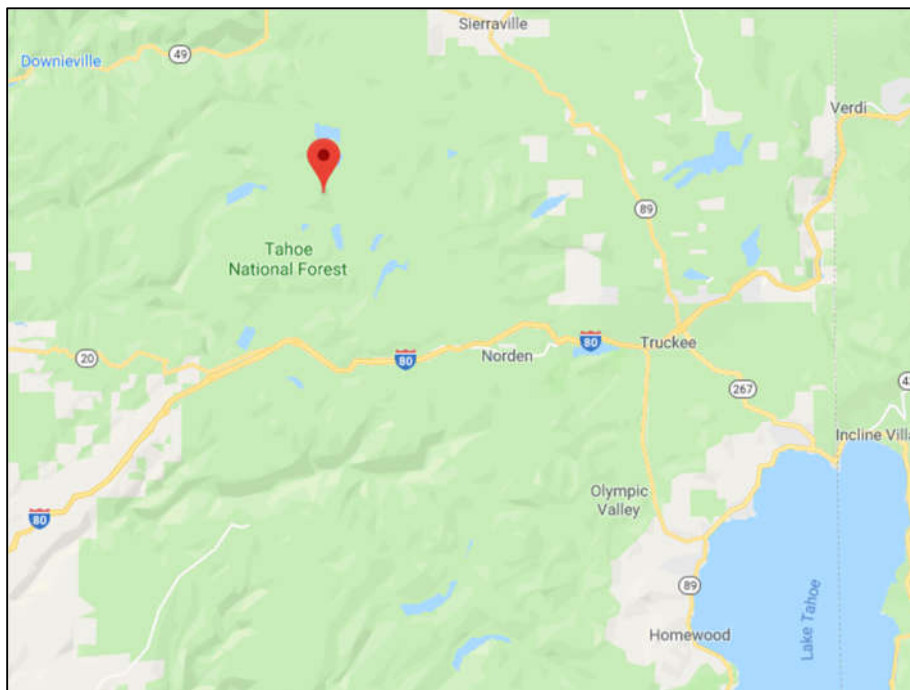


Figure 1: Map indicating the location of Echo Lake, Nevada Co. (Red Pin) in relation to Lake Tahoe, Downieville, and Sierraville (Google Maps, retrieved 10.16.19).



Figure 2: Overview photo of Echo Lake, Nevada County, September 3, 2019.

AMPHIBIAN AND REPTILE SURVEY DATA SHEET - 2017

Site ID: 12518	Date: 9/3/19	SKY: <input checked="" type="radio"/> Clear <input type="radio"/> Partly Cloudy <input type="radio"/> Mostly Cloudy <input type="radio"/> Over-cast	Rain	Snow	Smoke	WIND: Calm <input checked="" type="radio"/> Light <input type="radio"/> Moderate <input type="radio"/> Strong		
Topo Name: (1:24,000)	County: Nevada County	Elevation: m ft	If not surveyed, provide reason:		Private Property	Frozen	Not Found	No Access
Surveyors: L. Mitchell		Water Type: Lake	Unmapped pond	Marsh/ meadow	Spring seep	Stream (Skip to "STREAMS" below)		
Lake Name: Echo Lake	East UTM:	North UTM:	UTM Zone:		Site condition notes:			
Color: <input checked="" type="radio"/> Clear <input type="radio"/> Stained <input type="radio"/> Cloudy	Water (.5 m from shore, Temp 10cm deep): 16 @ 1113	Air (1 m above water): 19 @ 1110	Survey Method:					
Turbidity: <input checked="" type="radio"/> Clear <input type="radio"/> Cloudy			Visual Trapped					
Survey START time: 1113	Survey END time: 1143	Total survey duration (min): 30	HERPS SEEN? YES (NO)	FISH SEEN? YES (NO)	Aural Hand Collected			
*FOR LAKES/PONDS/MEADOWS: ALSO SURVEY FIRST 200 m OF ALL INLETS AND OUTLETS. RECORD DATA SEPARATELY IN THE "STREAMS" SECTION BELOW.								
Species	# adults	# subadults	# metamorphs	# larvae	# egg m.	# swabs	Survey Method	
							Visual Trapped	
Calling? Y N							Aural Hand Collected	
							Amp Net	Incidental
							Visual Trapped	
Calling? Y N							Aural Hand Collected	
							Amp Net	Incidental
							Visual Trapped	
Calling? Y N							Aural Hand Collected	
							Amp Net	Incidental
							Visual Trapped	
Calling? Y N							Aural Hand Collected	
							Amp Net	Incidental
STREAM								
Inlet	Outlet (circle one) #	Stream Type: Perennial	Ephemeral	Stream Currently Dry? Y N	Intermittent? Y N			
Start	End			Color: Clear Stained NA				
E UTM: N UTM:	E UTM: N UTM:			Turbidity: Clear Cloudy NA				
Start Time:	End Time:	Duration (min):	Water Temp:	Air Temp:	Herps Present? YES NO			
Inlet	Outlet (circle one) #	Stream Type: Perennial	Ephemeral	Stream Currently Dry? Y N	Intermittent? Y N			
Start	End			Color: Clear Stained NA				
E UTM: N UTM:	E UTM: N UTM:			Turbidity: Clear Cloudy NA				
Start Time:	End Time:	Duration (min):	Water Temp:	Air Temp:	Herps Present? YES NO			
Inlet	Outlet (circle one) #	Stream Type: Perennial	Ephemeral	Stream Currently Dry? Y N	Intermittent? Y N			
Start	End			Color: Clear Stained NA				
E UTM: N UTM:	E UTM: N UTM:			Turbidity: Clear Cloudy NA				
Start Time:	End Time:	Duration (min):	Water Temp:	Air Temp:	Herps Present? YES NO			
Inlet	Outlet (circle one) #	Stream Type: Perennial	Ephemeral	Stream Currently Dry? Y N	Intermittent? Y N			
Start	End			Color: Clear Stained NA				
E UTM: N UTM:	E UTM: N UTM:			Turbidity: Clear Cloudy NA				
Start Time:	End Time:	Duration (min):	Water Temp:	Air Temp:	Herps Present? YES NO			
Species	In/Outlet #	# adults	# subadults	# metamorphs	larvae	# egg m.	# swabs	Survey Method
	(circle one) #							Visual Trapped
Calling? Y N	IN							Aural Hand Collected
	OUT							Amp Net Incidental
	(circle one) #							Visual Trapped
Calling? Y N	IN							Aural Hand Collected
	OUT							Amp Net Incidental
	(circle one) #							Visual Trapped
Calling? Y N	IN							Aural Hand Collected
	OUT							Amp Net Incidental
	(circle one) #							Visual Trapped
Calling? Y N	IN							Aural Hand Collected
	OUT							Amp Net Incidental

Amphibians: S. Long-toed Salamander (AMMA); Yosemite Toad (ANCA, family BUCA); Sierran Treefrog (HYSI, family PSRE or HYRE); Sierra Nevada Yellow-legged Frog (RASI)
 Amph. less common in HML: CA Toad (ANBO, family BUBO); Bullfrog (RACT); Cascades Frog (RACA); CA Red-legged Frog (RADR); Sierra Newt (TASI, family TATO)
 Reptiles: Sierra Gartersnake (THCO); Mountain Gartersnake (THEL); Valley Gartersnake (THSI); Western Pond Turtle (EMMA, family CLMA)

PLEASE Return to: Isaac Chellman, California Department of Fish and Wildlife, (916) 358-4038; 1701 Nimbus Rd., Rancho Cordova, CA 95670

Field review	Copied	Entered	Proofed	Herp Data Sheet, pg. 1 of 2
PHOTOS	Photo Number	Camera	Time	Date (yyyy-mm-dd)
		UTM E	UTM N	Comments

Figure 3: VES data sheet from a survey conducted Sept. 3, 2019, at Echo Lake, Nevada County.

Overview	1055					0710922, 4369384	Lvc's phone
Herps							
Other							

SITE SKETCH:

NOTES:
 Unknown trout seen in shallows.
 No outlet. Snowmelt source only

Amphibians: S. Long-toed Salamander (AMMA); Yosemite Toad (ANCA, family BUCA); Sierran Treefrog (HYSI, family PSRE or HYRE); Sierra Nevada Yellow-legged Frog (RASI)
 Amph. less common in HML: CA Toad (ANBO, family BUBO); Bullfrog (RACT); Cascades Frog (RACA); CA Red-legged Frog (RADR); Sierra Newt (TASI, family TATO)
 Reptiles: Sierra Gartersnake (THCO); Mountain Gartersnake (THEL); Valley Gartersnake (THSI); Western Pond Turtle (EMMA, family CLMA)
 PLEASE Return to: Isaac Cheliman, California Department of Fish and Wildlife, (916) 358-4038; 1701 Nimbus Rd., Rancho Cordova, CA 95670

Field review _____ Copied _____ Entered _____ Proofed _____

Herp Data Sheet, pg. 2 of 2

Figure 3, Con't: VES data sheet from a survey conducted Sept. 3, 2019, at Echo Lake, Nevada County.