



Convict Lake 2023 Pilot Research Summary



Pilot Date: June 16th, 2023

Pilot Summary: Our team performed two survey dives in Convict Lake to help evaluate litter accumulation, distribution and patterns below the surface. While we were down there we also performed a preliminary assessment of the presence of potential aquatic invasive species, heavy lift items, unknown items and hot spot areas.

Dive 1: In the Convict Lake Pilot Research project, our team was excited to implement the use of diver propulsion vehicles (DPVs) to enhance our surveying capabilities. These underwater scooters significantly increased our efficiency, enabling us to conduct a comprehensive assessment of the factors threatening Convict Lake's health. Lead divers Colin West and Hayden Farris effectively utilized DPVs, allowing us to cover the majority of the lake's circumference at a depth of approximately 25 feet, providing a broad overhead view, as illustrated in Figure 1.

During this survey, the team utilized GPS technology to pinpoint hotspot locations and identify various heavy lift litter items. Notably, litter in diverse forms was consistently observed around the lake's perimeter, ranging from larger items to submerged trees and areas entangled with fishing lines and other debris. Of particular concern was the eastern shoreline near the marina and public parking area, which exhibited a high concentration of litter.

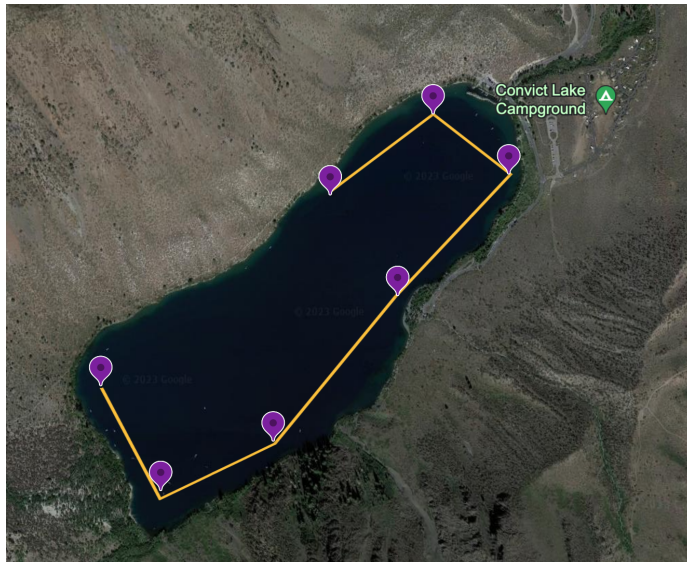


Figure 1. Convict Lake Pilot Research Dive 1- Area covered by DPV.

Dive 2: During the second dive, a volunteer team consisting of five volunteer divers, two free divers, and kayakers was deployed to revisit a previously identified hotspot area from the initial dive. Within a span of 45 minutes, the divers covered a shoreline distance of 0.34 miles, as depicted in Figure 2. During this time, they successfully collected 99 distinct items, totaling a weight of 76 pounds.

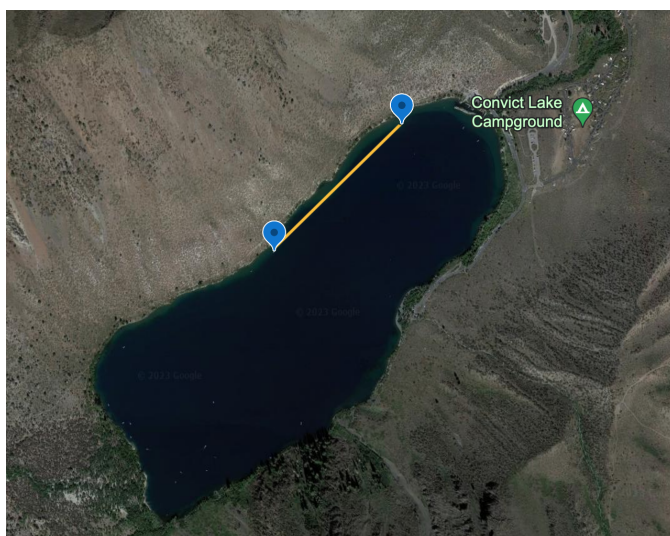


Figure 2. Convict Lake Pilot Research Dive 2 Segment

Pilot Findings: During the second dive, our team meticulously sorted the collected litter using the internationally recognized method established by the United Nations Environmental Programme. This method categorizes items into 83 distinct groups based on their material composition and purpose. Upon analysis, the predominant materials, ranked by weight, were plastic, metal, and glass and ceramic,

Material Data		
Plastic Weight	33.2	lbs
Plastic Count	13	items
Foam Weight	0.07	lbs
Foam Count	1	items
Cloth Weight	1.6	lbs
Cloth Count	2	items
Glass/Ceramic Weight	15.9	lbs
Glass/Ceramic Count	48	items
Metal Weight	25.4	lbs
Metal Count	33	items
Paper/Cardboard Weight	0.002	lbs
Paper/Cardboard Count	2	items
Rubber Weight	0.0	lbs
Rubber Count	0	items
Wood Weight	0.0	lbs
Wood Count	0	items
Other Weight	0.0	lbs
Other Count	0	items

Conclusion:

Our comprehensive assessment underscores the need for remediation measures to safeguard the ecological integrity of Convict Lake. Drawing upon our findings from June Lake, it is evident that the prevalence of recreational fishing has led to significant environmental degradation, characterized by the accumulation of fishing equipment litter and entanglement issues with monofilament lines. To preserve Convict Lake's natural beauty, protect its diverse wildlife, and sustain its recreational appeal, we strongly recommend implementing a thorough underwater cleanup initiative. Specifically, focusing on the 0-25 ft shoreline area through a full circumnavigated cleanup operation can effectively remove various sizes of litter items, both large and small.

Additionally, our research highlights the critical importance of proactive monitoring for potential aquatic invasive species (AIS). The identification of a Eurasian milfoil hybrid in June Lake serves as a stark reminder of the potential threats posed by invasive species. To mitigate the risks associated with AIS and enhance our understanding of their presence, we advocate for a comprehensive AIS survey in Convict Lake. By adopting these measures, we can pave the way for the lake's sustainable future, ensuring the preservation of its delicate ecosystem and recreational value for generations to come.