STATE OF CALIFORNIA
Budget Change Proposal - Cover Sheet
DF-46 (REV 03/25)

Fiscal Year	Business Unit Number	Department
2026-27	3600	Fish and Wildlife

Hyperion Budget Request Name	Relevant Program or Subprogram
3600-016-BCP-2026-GB	2590, 2605

Budget Request Title
Golden Mussel Containment

Budget Request Summary
The California Department of Fish and Wildlife requests 8 permanent positions to increase the department's capacity to prevent the spread of golden mussel from infested waters. The requested resources will support prevention efforts by federal, state, and local agencies to prevent the introduction of golden mussel to un-infested waters throughout California. These positions will be funded for three years from $20 million previously appropriated from the Safe Drinking Water, Wildfire Prevention, Drought Preparedness, and Clean Air Fund the 2025 Budget

Requires Legislation (submit required legislation with the BCP)	Code Section(s) to be Added/Amended/Repealed
☐ Trailer Bill Language ☐ Budget Bill Language ☒ N/A	Click or tap here to enter text.

Does this BCP contain information technology (IT) components?	Department CIO	Date
☐ Yes ☒ No	Click or tap here to enter text.	Click or tap to enter a date.

For IT requests, specify the project number, the most recent project approval document (FSR, SPR, S1BA, S2AA, S3SD, S4PRA), the approval date, and the total project cost.

Project No. Click or tap here to enter text.

Approval Date: Click or tap to enter a date.

Project Approval Document: Click or tap here to enter text.

Total Project Cost: Click or tap here to enter text.

If proposal affects another department, does other department concur with proposal? ☒ Yes ☐ No

Prepared By	Date	Reviewed By	Date
Click or tap here to enter text.	Click or tap to enter a date.	Nicole Nelson	1/9/2026
Department Director	**Date**	**Agency Secretary**	**Date**
Valerie Termini	1/9/2026	Bryan Cash	1/9/2026

Department of Finance Use Only

Additional Review: ☐ Capital Outlay ☐ ITCU ☐ FSCU ☐ OSAE ☐ Dept. of Technology

Principal Program Budget Analyst	Date submitted to the Legislature
Andrew Hull	1/9/2026

A. Problem Statement

Golden mussels (*Limnoperna fortunei*) were discovered in the Sacramento-San Joaquin Delta (Delta) in October 2024. This is the first known occurrence of this non-native invasive species in North America, and the first invasive mussel detected in the Central Valley. Golden mussel is a fingernail-size bivalve native to Asia that form protein-based fibers that it uses to attach to underwater surfaces. Golden mussels have high reproductive rates and form dense colonies. This mass colonization of surfaces, termed biofouling, blocks, impairs, and in many cases inhibits, function of manmade surfaces including underwater intakes, structures, and mechanisms, coats the hulls and external components of watercraft and recreational facilities, and natural objects such as rocks, fallen trees, even other sedentary bivalves. In addition, mass colonies of golden mussel alter ecological processes of the natural environment resulting in detrimental impacts to native and game species and water quality. Nearly every fresh and brackish water in California is suitable for golden mussel to establish.

There are no socially and environmentally benign methods currently available to eliminate invasive mussels once they are present. Therefore, containing mussels within infested areas is the only means to minimize additional new, widespread impacts. While the spread of invasive mussels in interconnected waters cannot be prevented without restricting navigation, their overland spread, attached to and within watercraft and equipment (collectively termed conveyances), can be prevented.

Adult mussels can survive days, even weeks, when removed from water. Larval mussels can survive a week or longer in small volumes of water. Conveyances carrying live invasive mussels that are launched into un-infested waterbodies can result in a new mussel infestation. The risk that any given conveyance poses for spreading invasive mussel is dependent on the type of conveyance, and the watercraft launching behavior of the boater. Depending on the type of watercraft and when it will be next launched, preventing the overland spread of mussels can be as simple as boaters draining water upon exit from a waterbody and allowing their watercraft to dry prior their next launch, up to professional cleaning requiring labor and time-intensive hot-water, high-pressure washing, or weeks out of water, depending on the season, waiting for entrapped mussels to die.

Given the central location of the Delta, its large geographic area, accessibility, high recreational use, and many conveyances and equipment that sit in-water for extended periods of time, without action golden mussels will spread to the many non-hydrologically connected reservoirs and waterways throughout the Central Valley, Sierra foothills and mountains, the Coastal Range, and Northern California, affecting fresh and brackish-water ecosystems and innumerable domestic and agricultural water supply systems, hydropower facilitates, flood control structures, recreation areas, and consequentially, the state's economy and wellbeing of its residents.

Following the discovery of golden mussels, the department reprioritized its existing capacity to address the most time-sensitive needs for responding to the presence of golden mussel in the Delta. The department coordinated with other agencies to survey the extent of golden mussel in the Delta, sample for golden mussel in waters statewide, update existing outreach and education material to include golden mussel, and formed an interagency Golden Mussel Task Force that developed a statewide Golden Mussel Response Framework (April 2025). This proposal to respond to golden mussels builds upon the department's existing capacity within the Invasive Species Program's (Program) Quagga/Zebra Mussel Project (Project) that has successfully contained quagga mussel within Southern California since 2007.

This request is for permanent positions associated with funding included in the 2025 Budget to add invasive mussel containment capacity primarily to Central and Northern California to ensure conveyances leaving the Delta do not move golden mussel to un-infested waters statewide through complementary actions implemented by the department, the public, and federal, state, and local agencies. While there are many similarities with containment of quagga mussel in Southern California, there are three additional challenges to containing

golden mussel in the Delta. These are 1) the proximity of the Delta to many un-infested waters, 2) a less arid climate compared to the climate in Southern California, and 3) the number of large and mechanically complex conveyances that leave the Delta. Conveyances that retain water, or are moored in mussel-infested water for long periods of time, are significantly more likely to harbor adult mussel attached to exterior surfaces and internal systems, and juvenile mussel larvae entrapped in water that cannot be drained from the conveyance.

Resource History
(Dollars in thousands)

Program Budget*	**PY-4**	**PY-3**	**PY-2**	**PY-1**	**PY**	**CY****
Authorized Expenditures	$2,688	$2,881	$2,813	$3,023	$2,878	$1,906
Actual Expenditures	$2,242	$2,526	$2,813	$3,013	$2,743	$1,906
Revenues	$0	$0	$0	$0	$0	$0
Authorized Positions	15	14	18	18	18	18
Filled Positions	14	13	17	18	18	16
Vacancies	1	1	1	0	0	2

*Data provided for Department resources for quagga and zebra mussels
**Projected for 2025-26

Workload History

Workload Measure*	PY-4	PY-3	PY-2	PY-1	Previous Year	Current Year
Prevention: Department approved mussel prevention plans and covered waterbodies	4 plans covering 16 waterbodies	3 plans covering 16 waterbodies	2 plans covering 2 waterbodies	4 plans covering 23 waterbodies	1 plan covering 4 waterbodies	5 plans covering 28 waterbodies
Prevention: Department watercraft inspection and/or decontamination from CDFA border protection vessel quarantines	41	34	23	24	20	8
Prevention: Department trained waterbody managers	42	151	179	109	6**	39**
Monitoring: Waterbodies monitored	205	243	215	266	215	163
Monitoring: Early-detection samples analyzed by the Department lab (eDNA and plankton)	263	384	704	578	573	451
Monitoring: Artificial substrates checked	479	1,077	951	827	406	267
Monitoring: Surface surveys	455	787	981	1,110	1,130	482
Outreach and Education: Mussel related public inquiries	2	24	2	3	31	305
Law Enforcement: K-9 watercraft inspections	200	325	475	176	713	1,098
Law Enforcement: K-9 public engagement	94**	2,828	4,958	3,972	Not Available	4,359

*Workload History is reported in calendar years, the format of the Program's annual reports.
**Trainings and demonstrations, not number of attendees

B. Justification

The mission of the department's Invasive Species Program is to reduce the negative effects of non-native invasive species on the wildlands and waterways of California. The program works to prevent the introduction of these species into the state, detect and respond to introductions when they occur, and prevent the spread of invasive species that have become established. Work is conducted in close coordination with other government agencies and non-governmental organizations and the public to protect the state's natural environment, economy, and human health. Expanding the department's capacity to address golden mussel builds upon the current efforts that contain quagga and zebra mussels to Southern California and San Benito County, respectively.

The department's efforts to support ongoing quagga/zebra mussel efforts include coordination and technical assistant to water managers of un-infested waters with mussel prevention, and coordination with water managers of infested waters on containment, outreach and education, early-detection monitoring, and law enforcement support to department staff and water managers (see Resource History for details). From 2019 to 2024 the

program was supplemented with federal Sport Fish Restoration Act (SFRA) funds to meet quagga/zebra mussel early-detection monitoring needs within the department's Bay-Delta Region, South Coast Region, and Inland Deserts Region. In 2025-26 SFRA funding continues to fund staff in the Bay-Delta Region and increase the program's capacity to expand conveyance inspection and decontamination training.

The October 2024 discovery of golden mussels in the Delta created an unforeseen urgency to act to protect many un-infested reservoirs, rivers, and waterways throughout Central and Northern California from the introduction of golden mussel. In an effort to protect their waterbodies, water managers throughout the region that lacked the staffing and resources to inspect incoming watercraft closed their waters to boating. Several of these closures are still in effect ten months later. Water managers that were able to stand up inspection programs did, with a variety of requirements prior to launch, including a minimum dry period of 30 days prior to launch. Watercraft that did not pass their inspection were turned away. Water managers that already had watercraft inspection programs in place continued to conduct inspections as they always had, while some increased the requirements for watercraft to launch (including mandatory decontamination if the prior launch was at that same waterbody). To date, the department is aware of four watercraft intercepted by these programs with adult golden mussel attached. Access to reservoirs throughout the state are controlled by water managers, and the management of that access varies considerably across different waterbodies. As a result, public boating access has been significantly disrupted since October 2024, affecting recreational boaters and anglers, tourism, and local economies.

The department and the California Department of Parks and Recreation's (State Parks) Division of Boating and Waterways are working with boating and angling constituencies on solutions to reopen waters to boating and streamline access to launching between independently managed waterbodies. The department is also working to bridge communication between constituencies and water managers to identify ways to improve boating access, while also protecting the waterbodies from golden mussel introduction.

In response to the golden mussel invasion, staff were redirected to coordinate with other agencies and partners, survey and map the extent of golden mussels in the Delta, conduct early-detection monitoring statewide, and share information and enlist the assistance of other agencies in to conduct public outreach and education. The redirection of these staff is not sustainable or sufficient for the urgency and need. This request is to add additional capacity to meet the workload need to contain golden mussel in the Delta to limit their spread to un-infested waters across the state and other states, thereby preventing irreparable environmental impacts, operational interruptions, and ongoing maintenance costs for the removal of mussel biofouling on public and private facilities and watercraft.

Immediate action is needed as conveyances are constantly leaving the Delta and traveling overland to launch at other waterbodies. Since October 2024 four watercraft with adult golden mussels have been intercepted at waterbodies with prevention programs. There is no way to know how many other conveyances have already launched into waterbodies that do not have a mussel prevention program in place. The investment in prevention is a more cost-effective approach to managing invasive species than managing their impacts in perpetuity. Water managers in Southern California spend millions of dollars annually to chlorinate water within their system to kill larval quagga mussels to reduce biofouling alone, and that is only one of the additional operational costs associated with the infestation of their system.

Authority and Law Enforcement Support
Law enforcement K9 resources are requested to provide the department with additional law enforcement support, including overtime funding for existing wildlife officers and eight police canines, to implement golden mussel detection efforts. This includes enforcement of the laws prohibiting the movement of golden mussel, responding to conveyances with standing water or biofouling mussels attached, providing public engagement and education, and supporting

federal, state, and local water managers in implementing their mussel prevention programs at waterbodies across the State.

Scientific Capacity and Support to Water Managers Implementing Mussel Prevention Efforts
The requested positions (1.0 permanent Senior Environmental Scientist Supervisor, three permanent Environmental Scientists, 1.0 permanent Research Scientist I, 1.0 permanent Research Scientist II, 1.0 permanent Marketing Specialist, 1.0 permanent Associate Governmental Program Analyst, 1.0 existing Environmental Scientist, and temporary staff) will work with federal, state, and local water managers to develop and implement site-specific watercraft inspection and prevention programs, promote coordinated prevention programs between water managers that improve access for recreational boaters and expedite launching, train water agency staff and private entities to inspect and decontaminate watercraft and equipment, verify ongoing effectiveness of their service providers, provide training to water managers on conducting early-detection monitoring for invasive mussels at un-infested waters to substantiate they are un-infested, analyze plankton samples collected by water managers, fill monitoring gaps in waters not managed by a specific entity, and promote public engagement and action to prevent the spread of invasive mussels. Promotion of public engagement and action will be through standardized, statewide messaging created through a contract with a professional marketing company. The outreach campaign goal will be to permanently change boaters' behavior by adopting the sustained practice of cleaning, draining, and drying their watercraft after every use, and decontaminating their watercraft if they intend to launch it before it is dried. This work would begin immediately upon budget approval and would be ongoing through the years.

The requested 2.0 Research Scientists (I and II) will also perform research studies on golden mussel, including, but not limed to, limiting environmental conditions (calcium, temperature), reproductive cycles in the Delta, investigate new methods for containment and control in open and closed water systems, impacts of golden mussel on native and game fish species, and develop molecular methods to improve efficiency of early-detection monitoring statewide. This research would inform containment and prevention actions and would begin immediately upon budget approval and hiring and would be ongoing.

C. Departmentwide and Statewide Considerations

This proposal supports the department's mission to protect wildlife and their habitat for the use and enjoyment of the public, as well as the Administration's and the California Natural Resources Agency's priority initiatives, including:

- Healthy Rivers and Landscapes Program
- California Biodiversity Initiative
- Outdoors for All
- California's Water Supply Strategy: Adapting to a Hotter, Drier Future (including the California Salmon Strategy for a Hotter, Drier Future)
- Water Action Plan
- Water Resilience Portfolio
- Clean energy

The department's Quagga/Zebra Mussel Project was created in 2007, when quagga mussels was detected in the Lower Colorado River, the Colorado River Aqueduct, and Southern California reservoirs that receive water via the Colorado River Aqueduct. The state took emergency action and funded statewide surveys to determine the extent of the quagga mussel infestation, conduct outreach to the public and water managers, trained federal, state, and local agency staff on inspection and decontamination of conveyances, began inspecting all watercraft entering the state through the California Department of Food and

Agriculture (CDFA) Border Protection Stations, responded to mussel-fouled conveyances quarantined by CDFA and intercepted by water managers, all of which were for the collective purpose of containing the spread of quagga mussel from infested waters.

Affected state, federal, local agencies and stakeholders participated in the development of the Golden Mussel Response Framework and continue to participate in the Golden Mussel Task Force. Through the Task Force, diverse voices have contributed to developing the state's proposed priority response actions. Other departments directly affected by this proposal include state departments that manage water and recreational access, including the Department of Water Resources, State Parks, and federal and local agencies that manage access to waters of the state.

Golden mussels threatens natural ecosystems and recreation, water conveyance systems, and consequentially, municipal and agricultural water supplies, flood control systems, and hydropower. If allowed to spread further, golden mussel will affect every household in California, and every sector of our economy.

In addition to protecting the state's infrastructure and economy, this proposal benefits the environment, tourism, and outdoor recreationists who use and enjoy it. Benefits expected by this proposal include increased and streamlined boater access through reopening of waters and increased protection of public and municipal water supplies, public waters of the state, and private businesses. This proposal addresses the short-term need of providing prevention programs at un-infested waters. Timeliness of a response is imperative to protecting the economic engines that fuel the state's economy.

D. Outcomes and Accountability

This request will enable the department to respond to golden mussel-infested conveyances, and for conveyance owners to access services to remove golden mussel, thereby preventing their further spread throughout the state. Water managers will also receive support and training from department staff to develop and implement invasive mussel prevention programs at their un-infested waters, monitor for the presence of golden mussel, collaborate with water managers across the state to make boating access more uniform and streamlined while also protecting their waters from the introduction of invasive mussels. Across all aspects of the program, outreach and education emphasizing the need and actions necessary to prevent the spread of golden mussel will be communicated.

The Invasive Species Program produces an annual internal report that summarizes statewide accomplishments (by calendar year), including watercraft quarantines, releases, inspections, decontaminations, finalized mussel prevention and control plans, monitoring effort, lab analyses, new mussel detections, outreach events, etc. The accomplishments anticipated from this request will be tracked and documented internally annually, consistent with the existing process for quagga/zebra mussel effort tracking since 2007.

Overall program success will be characterized by waters that reopen and expand access as a result of new service providers, number of waters that remain uninvaded by golden mussels, law enforcement and scientist responses to request for assistance from water managers and the public, number of inspectors and decontaminators trained, numbers of watercraft intercepted, inspected, and decontaminated, number of waterbodies monitored for mussels and methods used, number of plankton samples analyzed, number of new waterbodies covered by mussel prevention program plans, and number of outreach and education events and individual contacts made.

Projected Outcomes

Invasive Mussel Workload Measure	FY2025-26 Current Year	FY2026-27 Budget Year	FY2027-28 BY+1	FY2028-29 BY+2	FY2029-30 BY+3	FY2030-31 BY+4
Prevention: Department watercraft inspections and decontaminations	20	200	10,000	18,250	18,250	18,250
Prevention: Department trained waterbody managers	100	200	200	200	200	200
Monitoring: Waterbodies monitored	200	250	300	300	300	300
Monitoring: Early detection samples analyzed by the Department lab (eDNA and plankton)	750	1,500	1,500	1,500	1,500	1,500
Monitoring: Artificial substrates checked	500	1,250	1,250	1,250	1,250	1,250
Monitoring: Surface surveys completed	750	1,250	1,250	1,250	1,250	1,250
Outreach and Education: Mussel related public inquiries	500	1,000	1,000	1,000	1,000	1,000
Law Enforcement: K-9 watercraft inspections	2,000	4,000	4,000	4,000	4,000	4,000
Law Enforcement: K-9 public engagement (individuals)	8,000	10,000	10,000	10,000	10,000	10,000

E. Implementation Plan

Implementation of this proposal would begin on July 1, 2026, or upon approval of the 2026-27 Budget Act.

F. Supplemental Information

The department will contract and procure items to increase the department's capacity to prevent the spread of golden mussel from infested waters as follows:

- Specialty laboratory equipment
- Outreach and education campaign contract
- Enforcement Overtime for Wildlife Officers (including K9 and Handlers)

BCP Fiscal Detail Sheet

(Dollars in Thousands)

BCP Title: Golden Mussel Containment Program

BR Name: 3600-016-BCP-2026-GB

Budget Request Summary

Personal Services

Personal Services	FY26 Current Year	FY26 Budget Year	FY26 BY+1	FY26 BY+2	FY26 BY+3	FY26 BY+4
Positions - Permanent	0.0	8.0	8.0	8.0	8.0	8.0
Total Positions	**0.0**	**8.0**	**8.0**	**8.0**	**8.0**	**8.0**

Fund Summary

Fund Source

Fund Source	FY26 Current Year	FY26 Budget Year	FY26 BY+1	FY26 BY+2	FY26 BY+3	FY26 BY+4
Total State Operations Expenditures	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Program Summary

Program Funding

Program Funding	FY26 Current Year	FY26 Budget Year	FY26 BY+1	FY26 BY+2	FY26 BY+3	FY26 BY+4
Total All Programs	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Personal Services Details

Positions

Positions	FY26 Current Year	FY26 Budget Year	FY26 BY+1	FY26 BY+2	FY26 BY+3	FY26 BY+4
0556 - Marketing Spec (Eff. 07-01-2026)	0.0	1.0	1.0	1.0	1.0	1.0
0762 - Environmental Scientist (Eff. 07-01-2026)	0.0	3.0	3.0	3.0	3.0	3.0
0764 - Sr Envirnal Scientist (Supvry) (Eff. 07-01-2026)	0.0	1.0	1.0	1.0	1.0	1.0
5393 - Analyst II (Eff. 07-01-2026)	0.0	1.0	1.0	1.0	1.0	1.0
5576 - Research Scientist I (Eff. 07-01-2026)	0.0	1.0	1.0	1.0	1.0	1.0
5581 - Research Scientist II (Eff. 07-01-2026)	0.0	1.0	1.0	1.0	1.0	1.0
Total Positions	**0.0**	**8.0**	**8.0**	**8.0**	**8.0**	**8.0**