Staff Summary for June 11-12, 2025

6. Application For a Restricted Species Permit Amendment

Today's Item **Information ☐** **Action ☒**

Review an application for a restricted species permit amendment from the University of California San Diego to import, possess, transport or rear, or conduct research on transgenic painted urchins and transgenic sea squirts, and take action consistent with the Commission regulation, if warranted.

Summary of Previous/Future Actions (N/A)

- Received University of California San Diego (UCSD) application for a restricted species permit amendment from the Department with recommendation — January 21, 2025
- Discussed permit amendment application and directed staff to send UCSD a letter requesting additional information — April 16-17, 2025
- **Today, receive presentation from UCSD and take action, if warranted** — **June 11-12, 2025**

Background

Pursuant to Section 671.1, subsection (a)(8)(H), when the Department approves a restricted species permit for transgenic aquatic animals, the Commission must review the Department's determination during a regularly scheduled public meeting. The Commission may deny the issuance of a permit if it determines the applicant cannot meet regulatory requirements for importation, transportation, possession, and confinement.

In August 2024, UCSD submitted an application to the Department to amend its existing restricted species permit to authorize the use of transgenic painted urchins and sea squirts for research purposes; on January 31, 2025, the Department forwarded the application for Commission consideration. Based on information from another restricted species permit application, the Commission was made aware of transgenic fish movement from UCSD to an institution in the Los Angeles area, without following requirements for transporting restricted species. At its February 2025 meeting, the Commission directed staff to send a letter to UCSD underscoring the importance of permit compliance and urging diligence in training and monitoring its students, staff, and faculty. Staff sent a letter to UCSD and has been in communication with Department staff and UCSD directly.

At its April 2025 meeting, the Commission directed staff to request that UCSD submit documentation of its review of the identified incident and its plans to ensure diligence in training and monitoring of its students, staff, and faculty to demonstrate how UCSD will ensure consistent permit compliance.

Today, UCSD will make a brief presentation about the investigation it conducted and resulting changes to the animal care program to help ensure future permit compliance (exhibits 2-4).

Significant Public Comments (N/A)

Recommendation

Commission staff: Receive UCSD's presentation of program and training modifications for those allowing the issuance of the restricted species permit amendment.

Department: Allow the issuance of the restricted species permit amendment.

Exhibits

1. Packet for Agenda Item 25, April 16-17 Commission meeting *(for background purposes only)*
    a. Staff summary
    b. UCSD application for a permit amendment, received January 31, 2025 (received by the Department August 22, 2024)
    c. Department memo, received January 31, 2025
    d. Letter from Commission executive director to UCSD, dated April 11, 2025
2. Letter from Keith Jenné, D.V.M., Attending Veterinarian and Executive Director, UCSD Animal Care Program, dated May 29, 2025
3. UCSD Institutional Animal Care and Use Committee Policy Manual, Policy #24.01, Aquatic Invertebrates, issued June 20, 2018
4. UCSD 2025 Triennial Training: Animal Researcher Refresher Training (PowerPoint), undated

Motion (N/A)

Staff Summary for April 16-17, 2025
For Background Purposes Only

25. Application For a Restricted Species Permit Amendment

Today's Item **Information ☐** **Action ☒**

Review an application for a restricted species permit amendment to import, possess, transport or rear, or conduct research on, transgenic painted urchins and transgenic sea squirts, and take action, if warranted.

Summary of Previous/Future Actions (N/A)

Background

Pursuant to Section 671.1, subsection (a)(8)(H), when the Department approves a restricted species permit for transgenic aquatic animals, the Commission must review the Department's determination during a regularly scheduled public meeting. The Commission may deny the issuance of a permit if it determines the applicant cannot meet regulatory requirements for importation, transportation, possession, and confinement.

In August 2024, the University of California San Diego (UCSD) submitted an application to the Department to amend its existing restricted species permit to authorize the use of transgenic painted urchins and sea squirts for research purposes (Exhibit 1). The transgenic organisms would be generated from existing in-house colonies. The applicant submitted an updated emergency action plan as required.

On January 31, 2025, the Commission received a memo from the Department indicating that its Marine Region staff and Shellfish Health Lab reviewed the permit application and assessed UCSD's proposed confinement and security measures for the transgenic urchins and sea squirts against regulatory requirements. The Department noted that UCSD agreed to comply with confinement and security conditions specified in Commission regulations in Section 671.1. Based on its satisfaction that UCSD can meet these conditions, the Department recommended the permit's issuance (Exhibit 2). The Department's recommendation emphasized UCSD's commitment to these conditions. However, while highlighting its review of containment and security obligations, the Department's memo does not address UCSD's ability to meet importation and transportation obligations.

February Commission meeting

At its February 2025 meeting, the Commission reviewed an application for a new restricted species permit from another research facility, for transgenic zebrafish. As part of the application process, the research facility disclosed that a UCSD researcher relocated transgenic zebrafish from UCSD to its facility, even though the facility was not yet permitted to house restricted species. Subsection (a)(8)(C) of Section 671.1 prohibits the movement of live transgenic aquatic animals from a permitted facility unless authorized by the Department.

The applicant's disclosure indicates that on September 3, 2024, wild-type embryos were transported by car from UCSD in La Jolla to the facility in Los Angeles to begin establishing a zebrafish colony; transgenic zebrafish were then transported from UCSD to the other facility between September 20 and October 10, 2024. UCSD did not request authorization from the

Department to move live animals to Los Angeles; the other facility notified the Department of the movements on October 11, 2024 and immediately notified its research team that no research was to be conducted using the zebrafish until a permit was obtained.

As of November 1, 2024 there were approximately 25 tanks containing just over 700 fish at the then-unpermitted zebrafish facility, where the fish continued to receive care at levels applied at the UCSD facilities. In early April 2025, staff learned that UCSD was still unaware that live restricted species had been transported from its campus to a facility in Los Angeles, in multiple instances, without Department notification or authorization or use of UCSD's internal protocols for the movement of restricted species.

At the February Commission meeting, after staff highlighted the unauthorized animal movements, the Commission directed staff to send a letter to UCSD underscoring the importance of permit compliance and urging diligence in training and monitoring its students, staff, and faculty. Staff sent a letter to UCSD (Exhibit 3) and has been in communication with Department staff and UCSD directly. Under the circumstances, staff questions whether UCSD's current training, monitoring and compliance protocols are adequate "to meet all regulatory requirements for importation, transportation, possession, and confinement of transgenic aquatic animals", as outlined in Section 671.1. Staff also notes that the Department's recommendation to allow the requested permit amendments was formulated prior to realizing UCSD's unauthorized actions.

Significant Public Comments (N/A)

Recommendation

Commission staff: Continue this item to a future meeting. Request that UCSD submit documentation of its review of the identified incident and its plans to ensure diligence in training and monitoring of its students, staff, and faculty to demonstrate how UCSD will ensure consistent permit compliance.

Department: Allow the issuance of the permit.

Exhibits

1. UCSD application for a permit amendment, received January 31, 2025 (received by the Department August 22, 2024)
2. Department memo, received January 31, 2025
3. Letter from executive director to UCSD, dated April 11, 2025

Motion

Moved by _____ and seconded by _____ that the Commission continues this item to a subsequent meeting and requests the University of California San Diego to submit documentation of its plans to ensure diligence in training and monitoring of its students, staff, and faculty that will demonstrate how UCSD will ensure satisfactory and consistent restricted species permit compliance.

State of California – Department of Fish and Wildlife

2024 RESTRICTED SPECIES PERMIT AMENDMENT REQUEST

DFW 1313b (REV. 10/23/2023) Page 1 of 2

RECEIVED

IMPORTANT! YOU MAY NOT OBTAIN ANIMALS PRIOR TO AMENDMENT APPROVAL

Fees include a nonrefundable three percent (3%) application fee, not to exceed $7.50 per item. (Section 700.4, Title 14, California Code of Regulations CCR).

FEE: $77.25 *(Nonrefundable application fee must accompany this amendment request.)*

SEE INSTRUCTIONS ON PAGE 2. TYPE OR PRINT CLEARLY.

FIRST NAME	M.I.	LAST NAME	PERMIT NUMBER
Marisela	J	Diaz	1729

BUSINESS NAME	DAY TELEPHONE
University of California, San Diego	858-534-4263

LOCATION OF ANIMAL(S) HOUSING: Note: Animals being held at multiple locations require inspection certification by the Department that each of those facilities meet the minimum applicable housing requirements as set forth in subsection 671.1(a)(8)(A-F), Sections 671.3-671.4 and/or 671.7(b), Title 14, of the CCR.

ADDRESS	CITY	STATE	ZIP CODE	COUNTY
9500 Gilman Drive	La Jolla	CA	92093	San Diego
ADDRESS	CITY	STATE	ZIP CODE	COUNTY

List all restricted animals **TO BE ACQUIRED** in the following order: mammals, birds, fish, or reptiles. Group animals by order, family, and species. Use the following letters to denote sex: M=Male, F=Female, and U=Neutered or Unknown. Mark an "X" in the **TO BE ACQUIRED** column for animals to be acquired within the next year. **Unique Identifiers:** Use the following letters to denote unique identifying methods (See Section 671.1(c)(3)(J), Title 14, of the CCR): M=Microchip, T=Tattoo, and A=Alternative Method. Aquaculture and fish permittees: Identify the actual number in the ID number field and identify either W=Weight, V=Volume or C=Count in the method field. Remember to complete the Importation Only Section below for animals being imported into California. For California Residents Only: **All native species obtained from a licensed California Wildlife Rehabilitation Facility require a Native Species Exhibiting Permit.** Contact the License and Revenue Branch at (916) 928-5846 or SPU@wildlife.ca.gov if you need additional information.

COMMON NAME	SCIENTIFIC NAME	ID NUMBER	METHOD	SEX	AGE
Jerboa, Lesser Egyptian	Jaculus Jaculus	1	A	U	All
Spiny Mouse	Acomys cahirinus	1	A	U	All
Painted Urchin	Lytechinus pictus	1000	C	U	All
Sea Squirt	Ciona intestinalis	200	C	U	All

WILL ANIMALS BE IMPORTED INTO CALIFORNIA? ☒ YES, COMPLETE IMPORTATION SECTION ☒ NO, EXPLAIN:

Jerboas, painted urchins, sea squirts to be generated from existing in-house colonies.

Spiny mice will be received from a peer academic institution

IMPORT ONLY: COMPLETE THIS SECTION IF YOU ARE IMPORTING ANIMALS INTO CALIFORNIA

LIST SPECIES TO BE IMPORTED	NUMBER OF ANIMALS	ORIGIN *(State or Country)*
Spiny mouse	1	Connecticut

PERSON/BUSINESS SHIPPING ANIMALS	DAY TELEPHONE
Yale University, Animal Care	

ADDRESS	CITY	STATE	ZIP CODE
300 Cedar St, PO Box #208003	New Haven	CT	06520

NAME OF CARRIER	POINT OF ENTRY INTO CALIFORNIA
To be determined.	To be determined.

I certify under penalty of perjury under the laws and regulations of the State of California that all information on this application is true and correct and I am not violating any city or county laws. I agree to comply with the provisions of Section 671, Title 14, of the CCR. I understand it is unlawful to use or possess a permit which was obtained by fraud or deceit (Fish and Game Code Section 1052b). I understand that in the event that this information is found to be untrue or incorrect, the permit will be considered invalid and must be surrendered where purchased and I will be subject to criminal prosecution. I further understand that failure to comply with the terms and conditions of a permit may result in revocation of current permit and/or denial of future permits. Violation of this section is a misdemeanor, punishable by fine of not more than $1,000.00, imprisonment in the county jail for not more than six months, or both the fine and the imprisonment. In addition, I may be [redacted] Game Code Section 2125.

APPLIC[redacted]	DATE
X	8/14/24

FOR DE[redacted] ONLY

REVIEW[redacted]	TRANSACTION#	ISSUED BY/DATE

State of California – Department of Fish and Wildlife
2024 RESTRICTED SPECIES PERMIT AMENDMENT REQUEST
DFW 1313b (REV. 10/23/2023) Page 2 of 2

INSTRUCTIONS FOR COMPLETING THE RESTRICTED SPECIES PERMIT AMENDMENT REQUEST

Use this form to: 1) add species you are not currently authorized to possess; 2) increase the number of animals where there are condition limitations; or 3) add/change facility locations.

Please allow 45 business days for processing your request. Amendments for transgenic species must go before the Fish and Game Commission, so you must allow an additional 30 business days. Incomplete requests will be returned and could delay the issuance of your amendment. Contact the Department of Fish and Wildlife (Department), License and Revenue Branch at (916) 928-5846 or SPU@wildlife.ca.gov if you need additional information regarding Restricted Species Permits.

RECEIVED
AUG 23 2024
BY LRB

To complete this application, you must:

1. It is mandatory to complete all items unless exempted.
2. Sign and date the amendment request in ink (an **original** signature is required).
3. Provide a list of animals to be acquired.
4. Provide a statement of purpose describing in detail the planned use for each animal. Applicants shall include relevant materials, as appropriate, including any lists of prospective clients with their contact information or contracts with clients or websites, scripts, brochures or flyers promoting or describing the planned use of the animals. If the animals will be used in an educational program, the applicant shall provide an explanation why live restricted species are necessary and samples of the educational material and message that will be distributed (not required for animal care, AZA, breeding, research and single event breeding permittees).
5. Provide a resume that provides dates and details documenting you or your full-time employee's qualifying experience caring for restricted animals at a facility engaged in a similar or directly related activity to the permit requested and for the animal(s) to be acquired. This experience shall have been acquired within the previous five years and include a total of at least one year full-time, hands-on experience caring for a species in the same family or closely related taxonomic family as the species requested (required for breeding, exhibiting, nuisance bird abatement, shelter and single event breeding permittees only).
6. Provide a letter of recommendation, written within the previous five years on **letterhead stationery, with an original signature**, from the facility where you or your full-time employee gained the experience. Document the quality and extent of the knowledge and experience, as related to the species and permit requested (required for breeding, exhibiting, nuisance bird abatement, shelter and single event breeding permittees only).
7. Provide an updated copy of your Emergency Action Plan that includes the new species.
8. Provide an updated Breeding Plan that includes the new species (required for breeding and single event breeding permittees only).
9. Provide photograph(s) of the enclosure(s) for animal(s) to be acquired that includes all required elements of the minimum standards as specified in Section 671.3.
10. Provide any other supporting documentation required by regulations.
11. Mail the completed application and supporting documentation with a cashier's check, money order, personal or business check*, or credit card** authorization form with the appropriate fee to the Department of Fish and Wildlife, License and Revenue Branch, PO Box 944209, Sacramento, CA 94244-2090 or apply in person. **DO NOT SEND CASH.**

IMPORTANT INFORMATION FROM THE DEPARTMENT OF PUBLIC HEALTH

The Department of Public Health (CDPH) has regulatory authority over the importation of specified carnivores (including skunks and raccoons), nonhuman primates and bats, due to potential health hazards.

Section 2606.8, Title 17, of the CCR, prohibits the importation of skunks because the hazard to the public from exposure to rabies is extremely high. The CDPH is concerned that certain wild animals could carry rabies and introduce new strains of rabies into the state of California. Therefore, the Department routinely denies requests for the importation and possession of skunks and raccoons. Exceptions may rarely be made for zoological or research institutions demonstrating an extraordinary need. The importation of other specified carnivores, bats or nonhuman primates may be allowed under a CDPH permit in certain circumstances. **For more information on CDPH permits, please contact them at (916) 552-9740.**

NOTICE

Disclosure Statement—Under Section 671.1, Title 14, of the CCR, the Department of Fish and Wildlife is authorized to collect information from applicants to maintain a record of licensure. All information requested on this application is mandatory unless otherwise indicated. All information except the street address and telephone number of the applicant may be provided to the public, if requested. All information related to a business may be released, including the residence address if it is the same as the business address. Other personal information submitted on this application may be released for law enforcement purposes, pursuant to court order, or for official natural resources management purposes.

A licensee may obtain a copy of his/her license records maintained by the Department by submitting a written request to the Custodian of Records, at the Department of Fish and Wildlife, License and Revenue Branch, PO Box 944209, Sacramento, CA 94244-2090. All requests must include the requester's name, address, and telephone number.

PAYMENT POLICY

***Personal or business checks** will be accepted by the Department if name and address are imprinted on the check. Checks returned to the Department due to insufficient funds will render your permit invalid. The Department may also deny the issuance or renewal of any permit if a person has failed to reimburse the Department for the amount due. Any activity performed without a valid permit is a violation of the Fish and Game Code and therefore subject to enforcement action.
****Credit Cards**—Licenses, permits, tags, stamps, or registrations may be purchased with a Visa or MasterCard.

Statement of Purpose

Species	Purpose
Jerboa, Lesser Egyptian	These animals will be used to study the molecular mechanisms of limb evolution.
Spiny Mouse	Animals will be used to study wound healing properties as it relates to cardiomyocyte proliferation following cardiac injury,
Transgenic Painted Sea Urchin	These animals will be used to study drug metabolism in the embryo, and generating transgenic resources for sea urchin developmental biology.
Transgenic Sea Squirt	Animals will be used to understand how the genome encodes development and the types of changes within the non-coding genome that contribute to disease.

UCSD Emergency Action Plan for Detrimental Species

(Pursuant to Section 671.1 (c)(3)(I), Title 14 of the CCR) Revision date: August 13, 2024

Subsection	Requirement	Fulfillment
a.	Re-capture equipment available	Nets for rodents, fish, amphibians, and aquatic invertebrates. Traps for rodents.
b.	Description of human lethal dispatch methods for various animals and a list of qualified personnel who are trained to carry out the methods	Fish, amphibians: Immersion in tricaine methane sulfonate (MS-222) or injection with approved barbiturate euthanasia agent. Aquatic invertebrates: Immersion in tricaine methane sulfonate (MS-222), injection with approved barbiturate euthanasia agent, or exposure to cold/freezing temperatures. Rodents: Injection with approved barbiturate euthanasia agent or inhalation of CO_2 gas. List of qualified personnel: Trained UCSD animal technicians, supervisors, veterinarians, and research staff.
c.	List of medical supplies/first aid kits and where they are located	EMERGENCY MEDICAL SUPPLIES and kits containing MEDICAL SUPPLIES in animal facilities and labs.
d.	Description of mobile transport cages and equipment on hand	Tanks, cages, and crates of varied and appropriate sizes.
e.	List of emergency telephone numbers that includes the local department regional office, 911, and animal control agencies	UCSD Security: (858) 534-4357 San Diego Police Department: 858-552-1700 or 911 CA Dept. Fish & Wildlife Dispatch: 951-443-2944 CA Dept. Fish & Wildlife South Coast Region: 858-467-4201 County of San Diego Animal Control 619-236-2341
f.	Written plan of action for emergencies	As an AALAC accredited institution, UCSD has an extensive campus-wide emergency action plan. Below are three specific aspects of it, as it relates to detrimental animal species. Evacuation plan: In case of an emergency that would necessitate evacuation, established written guidelines would be followed that include treatment of injured persons, routes of escape, containment of all animals, coordination with on and off campus response agencies, and accounting for all staff members. Animal attack: In case of animal attack, personnel would contain and control the animal, ensuring that it is in an appropriate enclosure for the particular species, administer first aid to the victim, call on or off campus medical personnel if necessary for assistance, call the Campus Veterinarian or on-call veterinarian for assistance if needed, and report the incident to the appropriate personnel. Animal escape: If an animal escape occurred, UCSD Animal Care Program

personnel would recapture the animal using the appropriate equipment for the species involved and report the escape to the proper on and off campus authorities.

This information applies to all species listed on permit #1729 for the University of California, San Diego:

Species	Location
Xenopus laevis	UCSD Campus 9500 Gilman Drive, La Jolla CA 92093
Xenopus tropicalis	UCSD Campus 9500 Gilman Drive, La Jolla CA 92093
Jerboa, Egyptian	UCSD Campus 9500 Gilman Drive, La Jolla CA 92093
Spiny mouse	UCSD Campus 9500 Gilman Drive, La Jolla CA 92093
Salamander, Mexican	UCSD Campus 9500 Gilman Drive, La Jolla CA 92093
Transgenic Zebrafish	UCSD Campus 9500 Gilman Drive, La Jolla CA 92093
Transgenic Painted Sea Urchin	UCSD Campus 9500 Gilman Drive, La Jolla CA 92093
Transgenic Sea Squirt	UCSD Campus 9500 Gilman Drive, La Jolla CA 92093

Housing of Spiny Mice

Procedures:

1. Spiny mice will be housed in standard laboratory ventilated mouse or rat cages within a controlled-access vivarium.
2. Examples of cages and racks include:

a.

b.

USDA

Expiration Date: September 15, 2023

United States Department of Agriculture

Marketing and Regulatory Programs

Animal and Plant Health Inspection Service

Animal Care

This is to certify that
UNIVERSITY OF CALIFORNIA-SAN DIEGO

is a registered Class R - Research Facility under the

Animal Welfare Act

(7 U.S.C. 2131 et seq.)

Certificate No. 93-R-0437

Customer No. 9196

[redacted]

Deputy Administrator

[redacted]

From: Krueger, Lauren <lkrueger@UCSD.EDU>
Sent: Monday, September 23, 2024 12:33 PM
To: Hayes, Alyssa@Wildlife
Cc: Yang, Xac[redacted]
Subject: Re: 2024 Restricted Species Amendment - UC San Diego
Attachments: MOU_Amendment_LDK_Sep24_signed.pdf; UCSD OLAW Approval.pdf; 1 AAALAC Verification letter - # 000503.pdf

Hello Alyssa,

Thank you again for your time and support with this amendment.

Please find my responses to your questions below in red:

1. **Inventory/TBA.**
    a. On your amendment you listed the following animals as additions to your permit:
        i. Lesser Egyptian jerboa (*Jaculus jaculus*) – this species is already approved on your permit.
            1. This species does not appear in print on our 2024-2025 permit.
        ii. Spiny mouse (*Acomys cahirinus*)

            1. Yes - this is correct.
        iii. Painted urchin (*Lytechinus pictus*) – is this animal transgenic? This species is not restricted unless it is transgenic.

            1. Yes - this animal is transgenic.
        iv. Sea squirt (*Ciona intestinalis*) – is this animal transgenic? This species is not restricted unless it is transgenic.

            1. Yes - this animal is transgenic.
2. **USDA license.**
    a. The USDA license that was provided with the amendment has since expired (9/15/2023). Do you have an updated USDA license?
        i. The requirement to update a research facility's registration every 3 years has been eliminated (https://www.aphis.usda.gov/animal-care/awa-services/faqs-awa-research-facility-registration-updates-reviews-reports).
3. **Self-inspection report (MOU).**
    a. As an MOU facility, UC San Diego is permitted to conduct its own inspections by an accredited USDA veterinarian. These self-inspection reports are required per your original MOU agreement. Please see below:

INSPECTION REQUIREMENTS

1. The ELE shall inspect research facilities as defined by CCR, Title 14, Section 671.1, subdivision (b)(9), once per year. If non-compliance is found, additional inspections shall follow to establish subsequent full compliance. If compliance is not accomplished within 45 days of initial inspection the ELE must notify the Department.
2. The ELE shall send an annual report describing the findings of the inspection. The report shall include:
    a. The name of the facility inspected;
    b. An inventory of what animals were inspected;
    c. The date(s) of inspection;
    d. What caging requirements (i.e. current version of the *Guide for the Care and Use of Laboratory* Animals) were used to inspect the facility;
    e. Proof of the facility's Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC) accreditation status;
    f. If the facility was in compliance with the standards set forth in CCR, Title 14, sections 671.2, 671.3(e), 671.4, and 671.7 if applicable;
    g. The name and signature of the ELE (or its representative if the ELE is a Research Entity), date, and the USDA Accreditation Number;
    h. If violations are found, a detailed description of the violations including citations describing the specific sections violated; and
    i. If violations are found, a current status of the violation (if proper changes have occurred to bring the research facility back into compliance).
3. The report shall be sent to the Department with the annual permit renewal.
4. This MOU will be valid for 5 years with annual renewal and the annual ELE/MOU renewal fee paid.

- Please submit an updated inspection report with the above criteria fully reflected in your current report.
    - Please find attached an updated inspection report as well as our AAALAC accreditation letter.

4. **Proof of federal program.**
    a. It is required for every research permittee to submit proof of inclusion in a federal program pursuant to California Code of Regulations (CCR), Title 14, Section 671.1 (c)(3)(L).
- Please submit paperwork that support your facility is part of a federal program as highlighted above.
    - Please find attached our OLAW assurance.

Please let me know if I can provide you with any additional information.

Thank you again for your time and have a nice day!

Kind regards,

Lauren

Lauren Krueger, BVM&S AFHEA MRCVS DACLAM
Associate Director
Animal Care Program
University of California, San Diego
Office: (858) 822-4580
[redacted]
Email: lkrueger@ucsd.edu

From: Hayes, Alyssa@Wildlife <Alyssa.Hayes@Wildlife.ca.gov>
Sent: Tuesday, September 10, 2024 12:29 PM
To: Krueger, Lauren <lkrueger@UCSD.EDU>
Cc: Yang, Xao@Wildlife <Xao.Yang@wildlife.ca.gov>
Subject: 2024 Restricted Species Amendment - UC San Diego

Good morning Lauren,

California Department of Fish and Wildlife received your 2024 restricted species amendment for UC San Diego.

I had a few questions that I'd like to clear up before I can resume the reviewal process.

---

1. **Inventory/TBA.**
    1. On your amendment you listed the following animals as additions to your permit:
        i. Lesser Egyptian jerboa (*Jaculus jaculus*) – this species is already approved on your permit.
        ii. Spiny mouse (*Acomys cahirinus*)
        iii. Painted urchin (*Lytechinus pictus*) – is this animal transgenic? This species is not restricted unless it is transgenic.
        iv. Sea squirt (*Ciona intestinalis*) – is this animal transgenic? This species is not restricted unless it is transgenic.
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    1. The USDA license that was provided with the amendment has since expired (9/15/2023). Do you have an updated USDA license?
3. **Self-inspection report (MOU).**
    1. As an MOU facility, UC San Diego is permitted to conduct its own inspections by an accredited USDA veterinarian. These self-inspection reports are required per your original MOU agreement. Please see below:

INSPECTION REQUIREMENTS

1. The ELE shall inspect research facilities as defined by CCR, Title 14, Section 671.1, subdivision (b)(9), once per year. If non-compliance is found, additional inspections shall follow to establish subsequent full compliance. If compliance is not accomplished within 45 days of initial inspection the ELE must notify the Department.
2. The ELE shall send an annual report describing the findings of the inspection. The report shall include:
    a. The name of the facility inspected;
    b. An inventory of what animals were inspected;
    c. The date(s) of inspection;
    d. What caging requirements (i.e. current version of the *Guide for the Care and Use of Laboratory* Animals) were used to inspect the facility;
    e. Proof of the facility's Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC) accreditation status;
    f. If the facility was in compliance with the standards set forth in CCR, Title 14, sections 671.2, 671.3(e), 671.4, and 671.7 if applicable;
    g. The name and signature of the ELE (or its representative if the ELE is a Research Entity), date, and the USDA Accreditation Number;
    h. If violations are found, a detailed description of the violations including citations describing the specific sections violated; and
    i. If violations are found, a current status of the violation (if proper changes have occurred to bring the research facility back into compliance).
3. The report shall be sent to the Department with the annual permit renewal.
4. This MOU will be valid for 5 years with annual renewal and the annual ELE/MOU renewal fee paid.

- Please submit an updated inspection report with the above criteria fully reflected in your current report.

4. **Proof of federal program.**
    1. It is required for every research permittee to submit proof of inclusion in a federal program pursuant to California Code of Regulations (CCR), Title 14, Section 671.1 (c)(3)(L).
    - Please submit paperwork that support your facility is part of a federal program as highlighted above.

Please address the information above so that we may proceed with the amendment process.

Please let me know if you have any questions or concerns with the requests above.

Thank you,

Alyssa Hayes
Restricted Species, Special Permit Unit
License and Revenue Branch
[redacted]
[redacted]

5205 Chairman's Court, Suite 300
Frederick, MD USA 21703

March 27, 2023

Kristen Anderson-Vicino, M.S.
Director
IACUC Office
University of California - San Diego
9500 Gilman Drive
Mail Code 0071
La Jolla, CA 92093-0071

Dear Ms. Anderson-Vicino:

AAALAC International is pleased to convey that the University of California, San Diego, University of California, La Jolla, California is accredited. Our records show that the University of California, San Diego, University of California initially achieved AAALAC International accreditation on February 19, 1980.

This interest, contribution and participation in the AAALAC International accreditation program is valued and appreciated. As you are aware, AAALAC International conducts site visits to institutions and requires being apprised of significant programmatic changes during the interim between these site visits. Should you desire additional information or wish to comment on any aspect of the accreditation process, please contact our office.

Sincerely,

Gary L. Borkowski, D.V.M., M.S.
Global Director

GLB:jl
000503

tel: 301.696.9626
fax: 301.696.9627

accredit@aaalac.org
www.aaalac.org

UNIVERSITY OF CALIFORNIA, SAN DIEGO UCSD

BERKELEY • DAVIS • IRVINE • LOS ANGELES • RIVERSIDE • SAN DIEGO • SAN FRANCISCO

SANTA BARBARA • SANTA CRUZ

UCSD ANIMAL CARE PROGRAM
VETERINARY SERVICES

9500 GILMAN DRIVE, DEPT 0614
LA JOLLA, CALIFORNIA 92093-0614

To whom it may concern:

I certify that the animals listed on the detrimental species permit inventory and their housing have been inspected at least twice during the year, at six month intervals, and that the animals are being cared for and housed in accordance with the applicable requirements in subsections 671.1(a)(8)(A)-(F), and sections 671.2 through 671.4, Title 14 of the CCR to satisfy the inspection requirement of amending the permit.

The most recent inspection dates:

- Axolotls: 18Jul24
- Lesser Egyptian Jerboas: 02Jul24, 15Aug24
- Xenopus spp: 02Jul24
- Zebrafish: 02Jul24, 18Jul24, 14Aug24

Veterinarian's signature: _____

Veterinarian's printed name: Lauren Krueger

USDA Accreditation #: 084562

Date: 20Sep24

DEPARTMENT OF HEALTH & HUMAN SERVICES

PUBLIC HEALTH SERVICE
NATIONAL INSTITUTES OF HEALTH

FOR US POSTAL SERVICE DELIVERY:
Office of Laboratory Animal Welfare
Division of Assurances
6700B Rockledge Drive
Suite 2500, MSC 6910
Bethesda, Maryland 20892-6910
Home Page: https://olaw.nih.gov

FOR EXPRESS MAIL:
Office of Laboratory Animal Welfare
Division of Assurances
6700B Rockledge Drive, Suite 2500
Bethesda, Maryland 20817
Telephone: (301) 496-7163

08/04/2021

Re: Approval for D16-00020 (A3033-01)

Sandra A Brown, Ph.D.
Vice Chancellor for Research
University Of California - San Diego
9500 Gilman Drive #0043
La Jolla, CA 92093-0043

Dear Dr. Brown:

I am pleased to inform you that the Office of Laboratory Animal Welfare (OLAW) reviewed and approved your institution's Animal Welfare Assurance (Assurance) that was submitted in accordance with the Public Health Service (PHS) Policy on Humane Care and Use of Laboratory Animals (Policy), revised 2015.

Your Assurance, identification number D16-00020 (A3033-01), became effective on 08/04/2021 and will expire on 06/30/2025. Please include the Assurance number on all correspondence to OLAW. A copy of the signed Assurance document will be sent in a separate email. The signature page provides verification of approval by OLAW and includes the period during which your institution's Assurance is effective.

The Assurance is a key document that sets forth the responsibilities and procedures of your Institution regarding the care and use of laboratory animals according to the PHS Policy. The practices described in the Assurance document must be followed by all individuals in the animal care and use program.

Please note that the OLAW Annual Reporting period is the federal fiscal year, October 1 through September 30. The Annual Report to OLAW is due by December 1 (but no earlier than September 30).

If I may be of any further assistance, please do not hesitate to contact me.

Sincerely,

Animal Welfare Program Specialist, OLAW
National Institutes of Health

cc: IACUC Contact

State of California
Department of Fish and Wildlife

Memorandum

Date: January 28, 2025

Original signed copy on file;
Received 1/31/25

To: Melissa Miller-Henson
Executive Director
Fish and Game Commission

From: Charlton H. Bonham
Director

Subject: **Item for Receipt at the February 12-13, 2025 Meeting: Approval of Restricted Species Permit Application to Possess Transgenic Invertebrate Species**

The University of California San Diego (UCSD) has applied for a Restricted Species Permit to possess transgenic painted urchins (*Lytechinus pictus*) and transgenic sea squirts (*Ciona intestinalis*). According to the California Code of Regulations (CCR), Title 14, Section 671.1(a)(8)(H), all approved applications to possess a transgenic aquatic animal shall be reviewed by the California Fish and Game Commission (Commission) at a regularly scheduled meeting. The Commission may deny the issuance of a permit if it determines that the applicant is unable to meet the regulatory requirements for the importation, transportation, possession, and confinement of transgenic aquatic animals.

The transgenic urchins and sea squirts will be used for biological research. UCSD has agreed to comply with containment and security conditions as specified in CCR, Title 14. California Department of Fish and Wildlife (Department) Marine Region staff have coordinated with the Department's Shellfish Health Lab in reviewing the permit. The Department recommends issuing UCSD a Restricted Species Permit to possess transgenic painted urchins and transgenic sea squirts.

If you have any questions or need additional information on this matter, please contact Dr. Craig Shuman, Marine Regional Manager at R7RegionalMgr@wildlife.ca.gov.

Attachment

ec: **Department of Fish and Wildlife**

Chad Dibble, Deputy Director
Wildlife and Fisheries Division

Craig Shuman D. Env., Regional Manager
Marine Region

Kirsten Ramey, Program Manager
Marine Region

Adam Frimodig, Senior Environmental Scientist
Marine Region

Sara Briley, Environmental Scientist
Marine Region

Colleen Burge, Ph.D., Shellfish Pathologist and
Research Scientist Supervisor
Fisheries Branch

STATE OF CALIFORNIA
Gavin Newsom, Governor

Fish and Game Commission

Wildlife Heritage and Conservation
Since 1870

Melissa A. Miller-Henson
Executive Director
P.O. Box 944209
Sacramento, CA 94244-2090
(916) 653-4899
fgc@fgc.ca.gov

www.fgc.ca.gov

April 11, 2025

Keith Jenne, DVM
Executive Director, Animal Care Program
Campus Veterinarian
University of California, San Diego
9500 Gilman Drive
La Jolla, CA

Sent via email to kjenne@UCSD.edu

Dear Dr. Jenne:

I write to you today on behalf of the California Fish and Game Commission regarding an unfortunate situation the Commission became aware of earlier this year that involves a non-native, transgenic aquatic species. The Commission supports the important research work of California's universities, while also underscoring the importance of complying with regulations governing the importation, possession, transportation and rearing of, or research on, restricted species.

In the fall of 2024, Cedars-Sinai Medical Center submitted to the California Department of Fish and Wildlife (Department) a restricted species permit application for the use of transgenic zebrafish for research purposes. Through that application, the Commission became aware of several instances where transgenic zebrafish were relocated from the University of California San Diego (UCSD) to Cedars-Sinai Medical Center before the center had received its permit to possess restricted species.

The Cedars-Sinai application states that, on September 3, 2024, wild-type embryos were transported by car from UCSD in La Jolla to Cedars-Sinai in Los Angeles to begin establishing a zebrafish colony; transgenic zebrafish were then transported from UCSD to Cedars-Sinai between September 20 and October 10, 2024. Cedars-Sinai notified the Department of the movements on October 11, 2024. As of November 1, 2024 there were approximately 25 tanks containing just over 700 fish at the Cedars-Sinai zebrafish facility, where the fish continued to receive care at levels applied at the UCSD facilities, though no research was allowed to take place until a valid permit was issued.

The movement of live transgenic aquatic animals from a facility is prohibited by subsection (a)(8)(C) of Section 671.1, Title 14, California Code of Regulations, unless specifically

authorized by the Department. When working with restricted species, permit compliance and diligence in the confinement, biosecurity, and transportation of transgenic species is critical to ensure that California's native species and habitats are not impacted. Little is known about the risk zebrafish pose specifically to California's environment; however, recent research suggests that zebrafish are able to survive and reproduce in a broader range of aquatic habitats than previously understood. Were they to escape into California waters, especially in southern California, zebrafish may prove invasive. Zebrafish have, on at least one occasion, established a foothold in California. Great care must be taken to protect California's ecosystems already affected by numerous non-native and invasive species.

The Commission values its relationships with research institutions and the scientific community, which help provide much of the scientific information on which the Commission bases its decisions. At the same time, we cannot emphasize enough the importance of ensuring that those who are entrusted with the privilege of working with restricted species fully understand and are willing, and able, to abide by the governing regulations and your safety protocols established to protect California's natural resources.

Please feel free to reach out to me if you have any questions or would like to discuss the contents of this letter.

Sincerely,

Melissa A. Miller-Henson

Melissa Miller-Henson
Executive Director

cc: Kristen C. Anderson-Vicino, Director, Institutional Animal Care and Use Committee Office, Research Compliance and Integrity
Lauren Krueger, Associate Director, Animal Care Program
California Department of Fish and Wildlife
Nathaniel Arnold, Deputy Director and Chief, Law Enforcement Division
Chad Dibble, Deputy Director, Wildlife and Fisheries Division
Joshua Morgan, Branch Chief, License and Revenue Branch
Craig Shuman, Regional Manager, Marine Region

UNIVERSITY OF CALIFORNIA, SAN DIEGO UCSD

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SANTA BARBARA • SANTA CRUZ

UCSD ANIMAL CARE PROGRAM
VETERINARY SERVICES

9500 GILMAN DRIVE, DEPT 0614
LA JOLLA, CALIFORNIA 92093-0614

May 29, 2025

California Fish and Game Commission

Dear Commissioners,

Thank you for the opportunity to emphasize the commitment of the University of California, San Diego (UCSD) to upholding the responsibility of possessing a restricted species permit. We appreciate the California Fish and Game Commission's dedication to protecting California's native species and natural resources and attention to the circumstances as identified here.

Upon investigation of the situation reported, the transfer of transgenic zebrafish for research purposes, we confirm the details outlined within the Cedars-Sinai restricted species permit application. A faculty member, while in the process of relocating to Cedars-Sinai had removed, or instructed his staff member to remove, transgenic embryonic zebrafish, against UCSD policy and procedures detailing the regulations set forth in Section 671(c), Title 14 of the California Code of Regulations (see UCSD policy_24_Aquatics).

Over the last few months we have completed a programmatic gap analysis and have identified several areas to strengthen compliance with our restricted species permit. We are in the process of developing and implementing a campus wide program of review of any new proposals to use transgenic aquatic species, in coordination with UCSD environment health and safety and institutional biosafety committees to capture additional transgenic applications for species not generally regulated by institutional animal care and use committee. This process will result in the complete inclusion of additional species on our permit. Some elements already in effect include a broader, and more thorough distribution of training to reinforce the foundation for compliance here at UCSD. At the time of this letter, we have completed the following:

- Included additional information regarding the Restricted Species Permit in our required training for all researchers (see excerpt of training slides)
- Revised information available to all UCSD personnel as it relates to the programmatic processes for the removal of animals from their approved/permitted locations.
- Met with impacted investigators to review the details of our restricted species permit and protocols for the security and use of each species covered under the permit.
- Reviewed facility designs for compliance and security measures to validate appropriate access control processes are in place.
- We recognize that there are other scientific research projects here at UCSD that will require additional transgenic aquatic species added to our permit. These species did not require an animal care and use protocol or were not previously identified as transgenic. Amendments for these animals will be immediately forthcoming.

We are confident in our ability to maintain compliance going forward and have used the reported situation to educate our research community and relevant research oversight officials of the importance of meeting these regulatory obligations. We continue to welcome any conversations with the Fish and Game Commission or its representatives with regard to our commitment to rigorous compliance in securing our restricted species.

Thank you for your time, understanding, and continued support of our research.

Best Regards,

Keith Jenné, D.V.M.
Attending Veterinarian and Executive Director - UCSD Animal Care Program

	UCSD INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE POLICY MANUAL	POLICY # 24.01 Originally Issued: 6/20/2018 Revised:
	Aquatic Vertebrates	

I. Background and Purpose

The Guide for the Care and Use of Laboratory Animals, 8th edition (National Academies Press, 2010) includes general guidelines and recommendations for the care and use of aquatic species in research; UCSD is obligated to follow these guidelines and recommendations as they apply to all animals used in research and teaching.

While some aquatic species (e.g., frogs, zebrafish) are available from commercial vendors or breeding colonies, other species may be collected in the wild or obtained from other institutions; therefore, the procedures used for acquiring mammals or other species may not apply. ACP follows all Federal, State and local regulations and guidelines for acquiring certain species, including many ectothermic vertebrates. For further guidance, please refer to the ACP website for Animal Acquisitions.

II. Who Should Read This Policy

All personnel with assigned responsibilities for handling aquatics on an approved protocol, ACP veterinary staff and ACP animal care staff.

III. Definitions

Term	Definition
Aquatic Vertebrate	Any hatched, live animal that has a backbone or spinal column and lives most of its life in the water. Aquatic species may breathe oxygen through the air or water. Most commonly used species include fish, amphibians (e.g. frogs) and reptiles (e.g. turtles). Zebrafish are considered hatched at 3 days post fertilization (dpf).

IV. Policy

1. All aquatic animals, including those to be obtained from non-commercial sources, must be ordered through the ACP Animal Acquisitions process. ACP will verify IACUC approval, allocation and availability of housing space, if necessary. Acquisition of animals in the field must be described in the protocol and the number of animals must be reported to the IACUC.
2. Zebrafish larvae may be housed in the lab for up to 7 dpf without requiring a satellite facility. A description of the housing conditions and location must be described in the IACUC approved protocol. Zebrafish over 7 dpf and all other species held outside of an approved vivarium for over 12 hours must be housed in an IACUC approved satellite facility as per IACUC Policy 28.

3. Animals must be housed in conditions that meet their needs regarding temperature, light, humidity, water flow, and space. Population density must be controlled in order to prevent overcrowding, or inappropriate isolation. Environmental enrichment, such as appropriate substrates, climbing platforms or hiding places must be provided as appropriate for the species. Primary enclosures must be secure to prevent accidental escape. Animal housing practices must inhibit the spread of disease. Specific procedures will vary with the species.
4. Enclosures must be labeled in accordance with IACUC Policy 36. If marking/identification of individual animals is performed, the method must be described in the Animal Use Protocol and be accomplished in a humane and appropriate manner *(i.e. tags, fin snips, etc.)*.
5. Animals and their environments must be monitored daily. Records documenting checks of daily health and feed and micro/macro environments must be completed daily and maintained in all housing rooms. Records of room and equipment sanitation and maintenance must be completed and maintained in all housing rooms and retained in accordance with ACP procedures. The respective responsibilities of laboratory staff and ACP for these daily checks must be agreed upon in writing.
6. Daily reporting to ACP of health issues, disease or unexpected deaths of animals is required. Researchers can contact the ACP veterinary staff for assistance in developing Standard Operating Procedures for care and maintenance of aquatics.
7. Training of lab personnel in appropriate methods is the responsibility of the PI. Documentation of such training is required and must be available for inspection. Training is also available through ACP.
8. Where animals are bred, breeding colony reports must be submitted monthly to the IACUC.
9. California Fish and Wildlife regulations apply to Xenopus, Axolotls, and transgenic zebrafish. These regulations prohibit these animals or their progeny from being released into the environment. Refer to the SOP for each species and also see below for Transgenic Aquatic Species.
10. Euthanasia methods must be described in the Animal Use Protocol and be consistent with USDA policy and AVMA guidelines.
11. All aquatic animal carcasses and tissues, both transgenic and non-transgenic, must be rendered non-viable by appropriate use of bleach or other methods, prior to disposal. Zebrafish are considered pathological waste and must be disposed of per EHS requirements.

V. Related Documents

UCSD Documents	Policy 13 Euthanasia Policy 28 Satellite Facility Policy 35 Surgery in Rodents, Birds, Reptiles, Amphibians and Fish Policy 36 Animal Identification Animal Carcass Disposal Pathway Biohazard Waste Disposal Guidelines
Other Documents and References	AVMA Guidelines for the Euthanasia of Animals: 2013 Edition

VI. Additional information

General Guidelines for the Care and Maintenance of Aquatic Species

Standard Operating Procedures

ACP will ensure, in conjunction with the investigator, the needs for specific species, Standard Operating Procedures (SOPs) for the daily husbandry and care of animals, and the cleaning and maintenance of all housing areas and equipment are prepared in accordance with standard ACP procedures. The SOPs must describe in detail all aspects of the care provided to the animals, including:

1. Feeding (feed type and vendor, frequency of feeding, method of feeding)
2. Regular monitoring of both the animals and their environment, including:
    - Daily checks for animal health, including weekends and holidays
    - Daily recording of critical environmental parameters, depending on the species
        - For aquatic species: examples of critical parameters include water temperature and pH
    - Regular recording of additional environmental parameters, depending on the species, such as concentration of nitrates, nitrites, ammonia, salinity, hardness and dissolved oxygen in the water of aquatic housing systems.
        - The frequency of testing will vary depending on the species, life stage, system and specific parameter.
        - Newly-established aquatic systems generally require more frequent testing.
3. Standards for acceptable ranges of environmental parameters for the species concerned e.g. room temperature and humidity, water conditions, and response plans in the event that conditions are outside the acceptable ranges.
4. Description of the housing system (e.g. static, flow-through or recirculating aquatic system, biological filtration system, size of primary enclosures).
5. Description of the source and treatment of water for aquatic or semi-aquatic species (e.g. municipal water, ocean water, RO water, distilled water, filtration type, any water conditioners or additives such as salts or dechlorinating agents).
6. Description of handling procedures required for routine husbandry (e.g. capture of animals to transfer them to different primary enclosures).
7. Cleaning methods and frequency of primary enclosures and secondary enclosures rooms. In general, each room should have its own stock of supplies, including nets and other animal handling devices and cleaning supplies. For aquatic species, this should include a description of the frequency and amount of water replaced.
8. Maintenance, cleaning, and replacement guidelines for all equipment used to house animals, including primary enclosures, filters, pumps, heaters, UV lights, nets, and water-quality probes.
9. Any regularly used disease prevention and/or treatment protocols.
10. Procedures used to acquire and introduce new animals. This generally includes a quarantine period to monitor and address potential disease problems, as well as allowing new animals to acclimate.

11. Procedures used to monitor the health status of the existing population, including any procedures for monitoring animals and/or their environments for the presence of disease-causing agents or conditions.
12. In conjunction with ACP veterinary staff, an effective response plan for an animal disease outbreak, including procedures for large-scale culling of sick animals and for cleaning and disinfection of tanks and water systems.
13. Procedures for anesthesia, transportation (out of the vivarium), euthanasia (consistent w/ AVMA guidelines), confirmation of death, and disposition of animals.
14. An appropriate response plan in the event of equipment malfunction or failure, both on a small scale and large scale. This must include contact information for appropriate personnel, and plans for possible relocation or euthanasia of animals.

    NOTE: SOPs must be submitted to the IACUC for review and approval as part of the animal use protocol. Once approved, a copy of the SOPs should be kept in all areas where animals are housed.

In addition, aquatics housing facilities should have:

1. An adequate electrical supply for filter pumps, water pumps, air supply, and/or heating/cooling systems, as well as an emergency power source to assure the continuance of fresh water and aeration to tanks.
2. Ground Fault Interrupt (GFI) electrical outlets.
3. A mechanism for appropriate temperature regulation of the entire room and/or individual tanks, when appropriate for the species.
4. An appropriate light source and light-dark cycle in all rooms or enclosures. Gradual changes in room light intensity are recommended, as sudden changes may elicit a startle response in some species (e.g. Fish). Some aquatic and semi-aquatic species may need full-spectrum lighting and/or heat lamps to provide supplemental heating to facilitate adequate physiological function.
5. Sinks with hot and cold running water and functional floor drains are desirable in fish-housing areas.
6. Large, heavy equipment (e.g. racks, tanks, large filter canisters) must be secured to walls or constructed to prevent them from falling in the event of an earthquake.
7. Standards for acceptable water conditions appropriate to the types of animals housed.
8. Personnel managing aquatic systems must be trained on relevant aspects of water chemistry, how to monitor water quality, and how water quality can impact animal health.

Transgenic Aquatic Species

Creation of new transgenic animals (including cross breeding of transgenic strains) requires approval in an animal use protocol, approved by the UCSD IACUC.

Transgenic aquatic species require special procedures to comply with California Fish and Wildlife Regulations and the Federal NIH Guidelines for Research Involving Recombinant DNA Molecules, as follows:

1. All transgenic aquatic animals shall be held, raised, and transported in a closed-water system or in a system which treats effluent discharge from the facility with a disinfection system adequate to ensure against the inadvertent release of live animals into the building drain.
2. Release of transgenic aquatic animals or their progeny into waters of the state is prohibited.
3. Access to facilities containing transgenic aquatic animals must be restricted through means determined to be adequate by ACP to assure against unauthorized removal of animals.
4. Movement of live transgenic aquatic animals from facilities is prohibited unless specifically permitted by ACP.
5. If transgenic aquatic animals are held with non-transgenic animals of the same species, all such animals that commingle with transgenic animals shall be treated as transgenic for the purposes of regulation and may not be introduced into waters of the state. Non-transgenic individuals that can be individually identified as non-transgenic may be exempt from this provision with prior ACP approval.

Amphibians

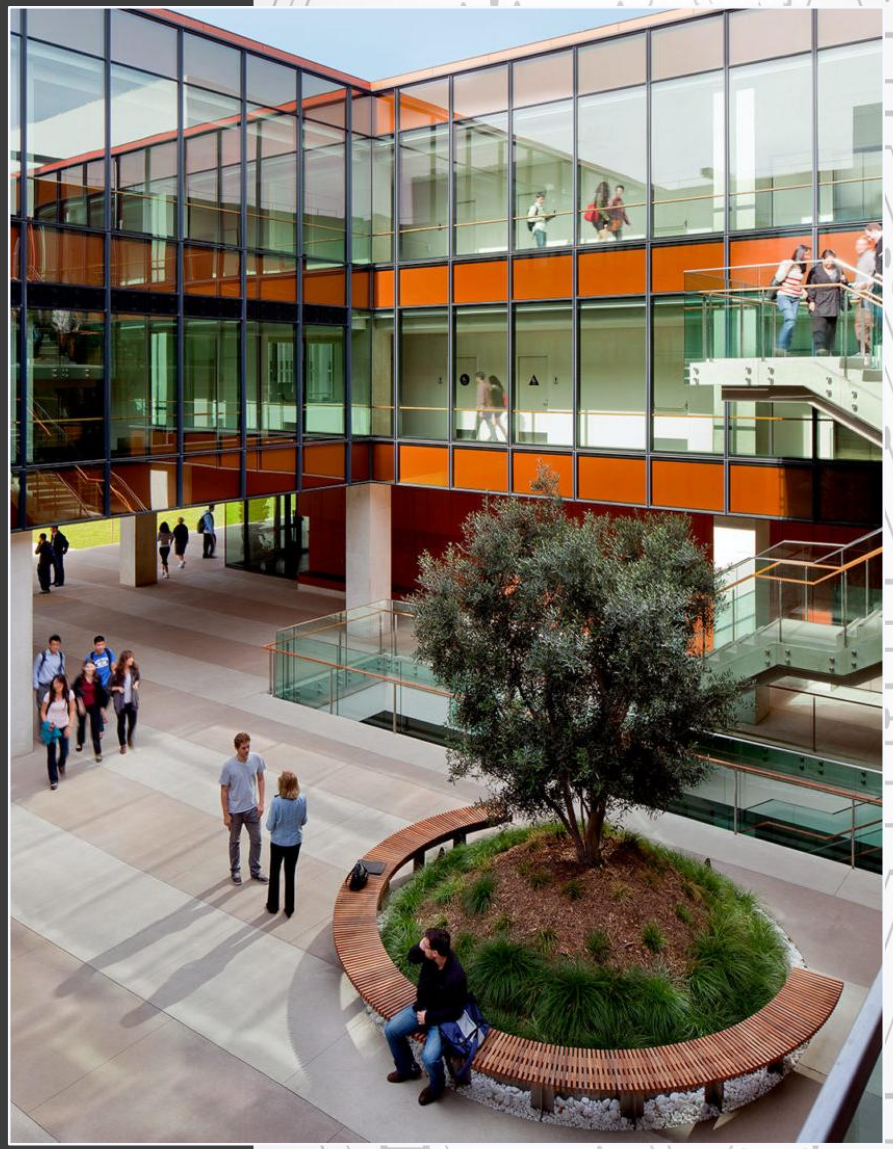
Specific requirements for amphibians vary by species. As with other ectothermic vertebrate species, expert advice should be sought when designing appropriate housing and husbandry SOPs.

1. Amphibians generally require cool, moist environments, although tropical species prefer warmer temperatures. Primary housing enclosures should not be airtight, but should be covered if evaporation is a problem.
2. As with other ectothermic species, consideration should be given to species-appropriate temperature and lighting and maintenance of a power source. Light wavelength requirements for amphibians are largely unknown. Many amphibians can be maintained for long periods of time with standard fluorescent room lights, and no supplemental lighting at the tank level.
3. Many species of terrestrial salamanders do well on a substrate of moist paper towels, replaced at intervals sufficient that accumulated feces do not grow mold. Most species also do well on an earth/twig/leaf substrate. In either case, a small pool at one end of the enclosure and pieces of clay pots for shelter are appropriate additions.
4. Axolotls should be maintained in containers of at least one liter of water per adult animal, at a temperature of 16-24°C. An aeration system is usually required for long term care of axolotls and other aquatic salamanders, especially for stream-dwelling species.
5. Anurans (frogs and toads) should be housed in containers of sufficient depth that they do not injure themselves by leaping against the top. Rough wire screen or other abrasives should be avoided in places that the animals will contact. Generally, a few inches of water in the bottom of the container, with rocks protruding above the surface, represent optimal conditions for semi-aquatic anurans. Totally aquatic anurans, such as African clawed frogs (e.g. *Xenopus laevis*), may be housed in approximately two liters of water per adult animal, but a wide variety of housing systems are currently utilized in research settings. Researchers are encouraged to monitor on-going research and evaluate space needs as necessary, documenting their findings in the individual SOP and/or protocol as appropriate.

IACUC/ACP REQUIRED

2025 Triennial Training

Animal Research Refresher Training



UC San Diego

REQUIRED
UC SAN DIEGO ANIMAL RESEARCH REFRESHER

1. Required once every **3 years** by the UC San Diego IACUC to fulfill federal regulations.
2. Required for **each person** listed on an animal use protocol.
3. This course reviews established standards as well as **new rules and laws**.
4. The course takes an average of **30 minutes** to view.
5. A comprehension quiz follows the course.

USE OF ANIMALS IS A **PRIVILEGE**

- Everyone who uses animals must:
- Be named on an approved animal use protocol ***before*** handling an animal, even in the lab
- Follow all UCSD IACUC policies
- Understand and follow your **approved** animal protocol ***exactly***
- **Non-compliance may result in loss of animal-use privileges – for you or your entire lab.**

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
RESTRICTED SPECIES PERMIT

Housing certain animal species on campus requires pre-approval by permit from the California department of Fish and Wildlife so to meet regulations set forth in Section 671(c), Title 14 of the California Code of Regulations when certain species are considered to be “Detrimental Species” (see next slide). This permit is referred to as the Restricted Species Permit. It is maintained by ACP.

For any restricted species that is planned for research, ACP must be contacted and informed, in order to assure its inclusion in the campus permit, as well as to assure species-appropriate animal husbandry practice.

State of California – Department of Fish and Wildlife
RESTRICTED SPECIES LAWS AND REGULATIONS MANUAL 671
DFW 1312d (REV. 04/08/21) Page 1 of 67

Restricted Species Laws and Regulations
https://wildlife.ca.gov/Licensing/Restricted-Species

WHAT ARE DETRIMENTAL SPECIES?

Species that pose a threat to native wildlife, the agriculture interests of the state or to public health or safety. Some of those include the following:

- All non-domesticated rodents (e.g. jerboas, spiny mice)
- *Xenopus* spp
- *Ambystoma* spp
- All genetically engineered aquatic animals i.e. freshwater and marine fishes,, amphibians, aquatic reptiles, and aquatic invertebrates (including larval stages)

WHAT DOES THE "RESTRICTED SPECIES" DESIGNATION MEAN FOR CAMPUS WORK WITH THOSE SPECIES?

All purchases and/or transfers of restricted animal species, including movement to, on and from campus must be coordinated by ACP

- ACP's permit assures the California CDFW requirements for documentation and record retention
- Information on transfers can be found on ACP's Website

Safeguards must be in place to prevent animal escape. For example, appropriate nets, live traps, drain covers, disinfection of waste water (as needed), etc.

Any non-compliance with or violation of the California Code of Regulations may result in adverse outcomes, including legal action, permit revocation, fines