MS ENVIRONMENTAL STUDIES

SACRAMENTO STATE

In Workflow

1. ENVS Committee Chair (wayne.linklater@csus.edu)
2. ENVS Chair (wayne.linklater@csus.edu)
3. SSIS College Committee Chair (wickelgr@csus.edu)
4. SSIS Dean (mendriga@csus.edu)
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7. Faculty Senate Executive Committee Chair (kathy.honeychurch@csus.edu)
8. Faculty Senate Chair (kathy.honeychurch@csus.edu)
9. Dean of Undergraduate (gardner@csus.edu)
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17. Graduate Studies (jdsmall@csus.edu; mxiong@csus.edu)
18. Registrar's Office (k.mcfarland@csus.edu)

Approval Path

1. Wed, 28 Sep 2022 23:43:34 GMT
   Wayne Linklater (wayne.linklater): Approved for ENVS Committee Chair
2. Wed, 28 Sep 2022 23:44:43 GMT
   Wayne Linklater (wayne.linklater): Approved for ENVS Chair
3. Fri, 04 Nov 2022 18:14:24 GMT
   Emily Wickelgren (wickelgr): Rollback to ENVS Chair for SSIS College Committee Chair
4. Tue, 08 Nov 2022 17:59:47 GMT
   Wayne Linklater (wayne.linklater): Rollback to ENVS Committee Chair for ENVS Chair
5. Tue, 08 Nov 2022 19:51:47 GMT
   Wayne Linklater (wayne.linklater): Rollback to Initiator
6. Tue, 07 Feb 2023 18:14:07 GMT
   Wayne Linklater (wayne.linklater): Rollback to Initiator
7. Fri, 23 Jun 2023 22:22:48 GMT
   Wayne Linklater (wayne.linklater): Approved for ENVS Committee Chair
8. Tue, 12 Sep 2023 20:14:46 GMT
   Wayne Linklater (wayne.linklater): Approved for ENVS Chair
9. Sun, 08 Oct 2023 00:19:36 GMT
   Rachel Flamenbaum (flamenbaum): Rollback to ENVS Chair for SSIS College Committee Chair
10. Wed, 11 Oct 2023 20:39:26 GMT
    Wayne Linklater (wayne.linklater): Approved for ENVS Chair
11. Sat, 21 Oct 2023 19:10:14 GMT
    Rachel Flamenbaum (flamenbaum): Rollback to ENVS Chair for SSIS College Committee Chair
12. Tue, 24 Oct 2023 23:12:15 GMT
    Wayne Linklater (wayne.linklater): Approved for ENVS Chair
13. Wed, 25 Oct 2023 20:46:45 GMT
    Rachel Flamenbaum (flamenbaum): Approved for SSIS College Committee Chair
14. Thu, 26 Oct 2023 23:30:10 GMT

Marya Endriga (mendriga): Approved for SSIS Dean
15. Tue, 07 Nov 2023 18:52:13 GMT
Katie Hawke (katiedickson): Approved for Academic Services
16. Wed, 29 Nov 2023 18:26:05 GMT
Rachel Miller (rachel.miller): Rollback to Initiator
17. Thu, 30 Nov 2023 22:29:17 GMT
Wayne Linklater (wayne.linklater): Approved for ENVS Committee Chair
18. Thu, 30 Nov 2023 22:29:30 GMT
Wayne Linklater (wayne.linklater): Approved for ENVS Chair
19. Thu, 07 Mar 2024 01:22:20 GMT
Rachel Flamenbaum (flamenbaum): Rollback to ENVS Chair for SSIS College Committee Chair
20. Mon, 26 Aug 2024 20:08:22 GMT
Wayne Linklater (wayne.linklater): Rollback to ENVS Committee Chair for ENVS Chair
21. Wed, 04 Sep 2024 17:02:44 GMT
Wayne Linklater (wayne.linklater): Approved for ENVS Committee Chair
22. Wed, 04 Sep 2024 17:03:53 GMT
Wayne Linklater (wayne.linklater): Approved for ENVS Chair
23. Wed, 11 Sep 2024 19:38:48 GMT
Emily Wickelgren (wickelgr): Approved for SSIS College Committee Chair
24. Wed, 11 Sep 2024 20:07:34 GMT
Marya Endriga (mendriga): Approved for SSIS Dean

New Program Proposal

Date Submitted: Thu, 30 Nov 2023 22:28:46 GMT

Viewing: MS Environmental Studies

Last edit: Wed, 04 Sep 2024 17:02:34 GMT

Changes proposed by: Wayne Linklater (223005380)

Academic Group: (College)

Social Sciences & Interdisciplinary Studies

Academic Organization: (Department)

Environmental Studies

Catalog Year Effective:

2024-2025 Catalog

NOTE: This degree major program will be subject to program review evaluation within six years after implementation.

Individual(s) primarily responsible for drafting the proposed degree major program:

Name (First Last)	Email	Phone 999-999-9999
Wayne Linklater	wayne.linklater@csus.edu	9162786751

Type of Program Proposal:

Major

Is this a pilot program?

No

Delivery Format:

Hybrid

Does this major plan to include any formal options, concentrations, or special emphases?

No

Title of the Program:

MS Environmental Studies

Designation: (degree terminology)

Master of Science

Abstract of the proposal:

The Department of Environmental Studies (ENVS) proposes a Master of Science in Environmental Studies. The degree will meet current needs from ENVS students and community employers who seek specialized training and skills to address complex environmental problems. We will offer degree advising tracks that allow students to receive tailored, interdisciplinary training, and provide inter-departmental collaborations, including with the downtown school. Surveys of prior students and employers find support and demand for the degree. Because of CSUS's proximity to government agencies and environmental organizations, there are career advancement opportunities and higher salaries for those with a graduate degree.

Briefly describe the program proposal (new or change) and provide a justification:

Sacramento State is proposing a Master of Science in Environmental Studies. The purpose of the proposed degree is to:

Provide career advancement opportunities for BS and BA in Environmental Studies majors.

Provide career advancement opportunities for current employees of environmental and natural resource agencies and organizations located in the Sacramento region.

Support the Anchor University Initiative by creating applied student research and projects.

Surveys of alumni and employers find support of a graduate program in Environmental Studies. In particular, they are looking for employees who are able to analyze and communicate data (verbal and written) and work collaboratively in teams (Table 1). In topical areas, they are looking for employees who have expertise in environmental health, ecological restoration, climate change, and stakeholder engagement/conflict management (Table 2). The empirical nature of program course content supports the decision to create an MS program (NOTE: Courseleaf does not allow for tables or figures. All figures and tables will be included in the attached Market Survey document).

Graduate research (thesis or projects) in environmental sub-disciplines vary in their complexity, novelty, and workload requirement. Some require the measurement of phenomenon in natural environments. Others, such as those focused on questions of history or policy, are not so constrained. Some theses and projects have already well-established methods, while others begin with methodological or sampling uncertainties. Still others originate or involve work in or with other organizations. Others do not. To accommodate all this variation (providing for diversity of opportunity and students), we have designed the culminating experience to have (i) two potential tracks requiring 3 or 6 units, and (ii) the potential to include internship (ENVS 295) and/or exploratory or pilot/preparatory work (ENVS 299) for ENVS 500. The decision about the topic, content, unit structure, and objectives of the culminating experience is decided by the student and faculty advisor before its beginning.

University Learning Goals

Graduate (Masters) Learning Goals:

Disciplinary knowledge
Communication
Critical thinking/analysis
Information literacy
Professionalism
Research (optional)

Program Learning Outcomes

Program Learning Outcomes

Learning Outcome
Present scholarly products with professional deliverables that can be understood by Stakeholders (Graduate Learning Goals [GLG] 1, 4, 5)
Create a written scholarly product with professional deliverables that it can be understood by stakeholders (GLG 1, 4, 5)
Solve environmental challenges by applying inter-disciplinary understanding and methods to iteratively investigate and refine knowledge and practice. (GLG 1, 2, 3, 6)
Acquire, analyze, and synthesize scientific and technical information to contextualize environmental challenges, design research, and ground practice (GLG 2, 3, 4)
Generalize and use the rules and norms of ethical and professional environmental practice in their appropriate context (GLG 3, 5, 6)
Evaluate the origins and implementation of environmental governance systems and use to design environmental governance (GLG 1, 3, 6)

Learning Outcomes Display

Course Code	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6
ENVS 200						
ENVS 210						
ENVS 230						
ENVS 232						
ENVS 236						
ENVS 211						
ENVS 235						
ENVS 240						
ENVS 245						
ENVS 250						
ENVS 295						
ENVS 296						
ENVS 299						
BIO 260						
BIO 269						
BIO 273						
BIO 279						
BIO 283						
PPA 200						
PPA 270						
PPA 272						
PPA 220A						
PPA 220B						
PPA 240A						
PPA 240B						
PPA 230						
PPA 210						
ECON 265						
SOC 238						
SOC 235						
SOC 210						
SOC 215						
GEOL 220						
GEOL 223						
GEOL 280						

RPTA 202						
RPTA 203						
RPTA 263						
GEOL 212						
ENVS 500A						
ENVS 500B						

Will this program be required as part of a teaching credential program, a single subject, or multiple subject waiver program (e.g., Liberal Studies, Biology) or other school personnel preparation program (e.g., School of Nursing)?

No

Please attach a Comprehensive Program Assessment Plan (required)

Program-Assessment-Plan-Template - MS Environmental Studies AW docx.docx

Please attach a Curriculum Map Matrix (required)

CurriculumMapMatrixTemplate(WL).docx

Please attach a five-year budget projection (required)

Budget Statement (MS).docx

Catalog Description:

Total units required for MS: 30

Program Description

The graduate program in Environmental Studies leads to a Master of Science (MS) degree and provides an opportunity for students to receive advanced, interdisciplinary training to pursue independent investigations in fields of environmental science and policy. The MS allows students to develop their expertise and mastery for educational advancement to doctoral programs or for professional advancement.

The MS degree requires that all students complete a culminating experience to demonstrate advanced training and research experience in the field. The culminating experience involves completing a project or thesis which includes qualitative and/or quantitative research methods in field, laboratory or of the literature. The project or thesis research may be conducted on campus or at an off-campus location under faculty supervision. The student's research must make a new contribution to the field and demonstrate advanced training in the field.

For additional information regarding the Graduate Program in Environmental Studies, students may contact the Department Office or through the Department's Web site.

Admission Requirements: Course prerequisites and other criteria for admission of students to the degree major program, and for their continuation in it.

Admission Requirements

Admission as a classified graduate student to the MS in Environmental Studies requires:

- a baccalaureate degree;
- completion of 9 units of environmental sciences or studies courses or courses in closely related fields, each of which must be passed with a "B-" or better;
- a minimum GPA of 2.75 in all courses and a minimum GPA of 3.0 in upper division environmental sciences or studies courses or courses in closely related fields;
- two letters of recommendation from persons qualified to judge the applicant's potential for successful graduate study; and
- a statement of purpose that includes potential area(s) of study the student will pursue.

To be considered for admission, all applicants must submit a completed application through Cal State Apply by the posted application deadline date of the term for which they are applying.

A complete application for admission into the Graduate Program in Environmental Studies includes all of the following:

- an online application for admission;
- two sets of official transcripts from all colleges and universities attended;
- two letters of recommendation; and
- a statement of purpose that includes discussion on interest in area of study.

Prerequisites

Completion of 9 units of environmental sciences or studies courses or courses in closely related fields, each of which must be passed with a "B-" or better.

Minimum Units and Grade Requirement for the Degree

Units required for the MS: 30

Minimum Cumulative GPA: 3.0

Admission Requirements:

All prospective graduate students, including Sacramento State graduates, must file the following with the#Office of Graduate Studies (http://www.csus.edu/gradstudies/):

• an application for admission;

- one set of official transcripts from all colleges and universities attended (other than Sacramento State);
- personal statement; and
- two reference forms.

For more admissions information and application deadlines please visit the#Office of Graduate Studies website.

Advancement to Candidacy

Each student must file an application for Advancement to Candidacy, indicating a proposed program of graduate study. This procedure should begin as soon as the classified graduate student has:

- removed any deficiencies in admission requirements;
- completed at least 12 units of 200-level courses in the graduate program with a minimum 3.0 GPA;
- selected a Thesis or Project committee;
- obtained the committee's approval of a proposal for the thesis or project; and
- completed a Graduate Writing Intensive (GWI) course in their discipline within the first two semesters of coursework at California State University, Sacramento.

The student will complete the Advancement to Candidacy form after planning a degree program in consultation with an Environmental Studies advisor and members of the student's thesis/project committee. A completed form will be submitted to the Office of Graduate Studies for approval.

Program Requirements: (If new courses are being created as part of a new program, it will be useful to propose courses first.)

NOTE: Form As for 'Not Found' courses below are also currently under consideration by the Curriculum Committee.

Program Requirements

Code	Title	Units
Required Courses (6 units)		6
ENVS 200	Course ENVS 200 Not Found	
ENVS 210	Course ENVS 210 Not Found	
Policy Course		3
Select one of the following:		
ENVS 230	Course ENVS 230 Not Found	
ENVS 232	Course ENVS 232 Not Found	
ENVS 236	Course ENVS 236 Not Found	
Elective Courses (15 units)		15
ENVS Elective Courses [1, 2, 3]		
Select three to six of the following:		
ENVS 211	Course ENVS 211 Not Found	
ENVS 235	Course ENVS 235 Not Found	
ENVS 240	Course ENVS 240 Not Found	
ENVS 245	Course ENVS 245 Not Found	
ENVS 250	Course ENVS 250 Not Found	
ENVS 295	Practicum	
ENVS 296	Experimental Offerings in Environmental Studies	
ENVS 299	Special Problems: Individual Study	
Inter-Disciplinary Elective Courses		
Select zero to three of the following:		
BIO 260	Advanced Ecology	
BIO 269	Behavioral Ecology	
BIO 273	Advanced Fishery Biology and Management	
BIO 279	Conservation Biology and Wildlife Management	

BIO 283	Biogeography	
PPA 200	Introduction to Public Policy and Administration	
PPA 270	Introduction to Collaborative Policy Making	
PPA 272	Collaborative Governance Advanced Practice	
PPA 220A	Applied Economic Analysis I	
PPA 220B	Applied Economic Analysis II	
PPA 240A	Public Management and Administration I	
PPA 240B	Public Management and Administration II	
PPA 230	Public Budgeting and Finance	
PPA 210	Political Environment of Policy Making	
ECON 265	Cost Benefit Analysis	
SOC 238	Environmental Sociology	
SOC 235	Social Psychology	
SOC 210	Urban Sociology	
SOC 215	Data Analysis	
GEOL 220	Seminar in Surficial Processes	
GEOL 223	Seminar in Advanced Geochemistry	
GEOL 280	Seminar in Earth's Climate History	
RPTA 202	Policies, Trends, and Issues in Recreation, Hospitality, Parks, and Nonprofit Organizations	
RPTA 203	Advanced Management in Recreation, Hospitality, Parks and Nonprofit Organizations	
RPTA 263	Grant Writing for Social, Community, and Human Service Organizations	
GEOL 212	Geologic Remote Imaging	
Culminating Experience (3-6 units) [3, 4]		6
ENVS 500A	Course ENVS 500A Not Found	
ENVS 500B	Course ENVS 500B Not Found	
Total Units		**30**

1 A minimum of 20 units in the major subject area (i.e., ENVS)

2 A minimum of 18 units of regularly scheduled 200-level courses in the major subject area, excluding thesis or project units.

3 Depending on the nature of a student's culminating experience opportunity (see Culminating Experience below), ENVS 295 and ENVS 299 can also be taken to support the development of a thesis/project (ENVS 500). The composition of courses that form the culminating experience will be decided at the thesis or projects beginning. No more than 6 units of supervisory courses (i.e., 295, 299) may be counted towards the degree.

4 The culminating experience must include a minimum of ENVS 500A. If only ENVS 500A is taken, another 3-unit elective should be taken to meet the minimum 30-unit total required for the degree. For theses or projects judged, due to their design or complexity, to require a larger workload, ENVS 500B can also be taken subsequently. ENVS 599 is available to students who require additional (unsupervised) time to complete their theses or project.

Explanation of special characteristics of the proposed degree major program; e.g., in terminology, units of credit required, types of course work, etc.:

NA

Will this program require specialized accreditation?

Establishment of a master's degree program should be preceded by a national professional accreditation of the corresponding bachelor's degree major program.

Will this program require accreditation?

No

Need for the Proposed Degree Major Program

Is the proposed degree program offerred at any California State University campus or any neighboring institutions?

Yes

List of other California State University campuses currently offering or projecting the proposed degree major program; list of neighboring institutions, public and private, current offering the proposed degree major program:

Humboldt State University offers an MA in Environmental Studies (https://envcomm.humboldt.edu/) and is primarily focused on the social and behavioral sciences.

Cal Poly, San Luis Obispo offers a MS Environmental Science and Management degree (https://nres.calpoly.edu/ms-environmental-sciences-and-management)

San Jose State University offers a MS in Environmental Studies degree (https://www.sjsu.edu/envs/graduate/)

Chico State University offers an MS in Environmental Science (https://catalog.csuchico.edu/viewer/GEOS/ENSCNONEMS.html)

UC Davis offers a MS in Environmental Policy and Management (https://epm.ucdavis.edu/) that is focused on policy and management.

University of San Francisco offers a MS in Environmental Management (https://www.usfca.edu/arts-sciences/graduate-programs/environmental-management)

Differences between the proposed program and the programs listed above:

While there is overlap between graduate programs, the proposed program will focus on the intersection between the natural, physical, social, and behavioral sciences to produce students who are able to create new knowledge and work with existing stakeholders to implement policy solutions.

List of other curricula currently offered by Sac State which are closely related to the proposed program:

See course list provided above.
Departments related to environmental studies offer a number of graduate courses including public policy and administration, economics, geology, and biology. Our graduate program will be trans-disciplinary, being at the intersection of the social, natural and policy disciplines. Many of the programs listed above are focused on one area of expertise, whereas the environmental studies program draws on them all in relation to the changes of environmental management.

Attach the results of a formal survey in the geographical area to be served indicating demand for individuals who have earned the proposed degree and evidence of serious student interest in majoring in the proposed program:

Market Survey For Environmental Science.docx

Provide justification for any discrepancies between national/statewide/professional manpower surveys and local findings:

The mean wage in Sacramento is higher than that of California and the U.S.. The differences between national, state, and local wages for environmental scientists is due to cost of living and the number of state and federal positions located in the Sacramento region.

For graduate programs, the number of declared undergraduate major and the degree production over the preceding years of the corresponding baccalaureate program:

Since 2013, the B.S. and B.A programs have more than doubled to over 250 majors. Since 2018 the BA has grown from 5 enrolled to 40. This is an indication in the demand for our major and is an indication of potential demand for a graduate program.

From most recent year for which data is available (2021) the Department of Environmental Studies at Sac. State ranks 5th in California for bachelor degrees awarded in Environmental Science (57), after UC-Davis (124), CSU-Humbolt (119), UC-Los Angeles (98), CSU-San Jose (61) and UC-Berkeley (61). We are the only member of the top 5 to not also offer a graduate degree in Environmental Science.

Professional uses of the proposed degree major program:

Students in environmental studies will gain employment in a number of work sectors such as natural resource agencies, private consulting, and environmental non-profits.

The expected number of majors in:

1st Year Enrollment:

15

3rd Year Enrollment:

20

5th Year Enrollment:

25

1st Year Graduates:

0

3rd Year Graduates:

14

5th Year Graduates:

18

Existing Support Resources for the Proposed Degree Major Program

List faculty members, with rank, appointment status, highest degree earned, date and field of highest degree, and professional experience (including publications if the proposal is for a graduate degree), who would teach in the proposed program:

Name	Rank	Appointment Status	Highest Degree Earned	Year of Highest Degree Earned (YYYY)	Publications/Professional Experience
Wayne Linklater	Professor	Full Time	Doctorate	1999	Games as experiments to understand why wildlife devaluation may not reduce the number killed. Journal for Nature Conservation, 126219. Rudman S, Linklater W. 2022. Selection and characterization of DNA aptamers for the rat major urinary protein 13 (MUP 13) as selective biorecognition elements for sensitive detection of rat pests. Talanta 240. Lucarelli V, Colbert D, Li S, Cumming M, Linklater, Mitchell J, Travas-Sejdic J, Kralicek A. 2022. The need for formal reflexivity in conservation science. Conservation Biology. Boyce P, Bhattacharyya J, Linklater W. 2021. Designing and delivering wildlife viewing protocols that enhance sustainability. Handbook for Sustainable Tourism Practitioners. Muntifering J, Linklater W. 2021. Meta#analysis of human connection to nature and pro-environmental behavior. Conservation Biology 34 (1), 180-193. J Whitburn, W Linklater, W Abrahamse. 2020. Vulpeculin: a novel and abundant lipocalin in the urine of the common brushtail possum, Trichosurus Vulpecula. Open Biology 10 (10), 200218. Loxley G, Hooks D, Antonopoulos A, Dell A, Haslam S, Linklater W, Hurst J, Beynon R. 2020.

Ajay Singh	Associate Professor	Full Time	Doctorate	2015	Singh, A. S., Eanes, F., & Prokopy, L. S. (2020) Climate change uncertainty among American Farmers: An examination of multidimensional uncertainty and attitudes towards agricultural adaptation to climate change. Climatic Change. DOI: 10.1007/s10584-020-02860-w Impact Factor: 4.78 Prokopy, L. S., Floress, K., Arbuckle, J, Church, S., Eanes, F., Gao, Y.**, Gramin, B., Ranjan, P., Singh, A. S. (2019). Adoption of Agricultural Conservation Practices in the United States: Evidence from 35 Years of Quantitative Literature. Journal of Soil and Water Conservation, 74(5):520-534; doi:10.2489/jswc.74.5.520. Impact Factor: 1.23 Singh, A. S., Zwickle, A., Bruskotter, J., & Wilson, R. (2017). Support for climate adaptation approaches in the United States: Exploring the influence of psychological distance of climate change impacts on support for collective action. Environmental Science and Policy (73). http://dx.doi.org/10.1016/j.envsci.2017.04.011. Impact Factor: 4.82 Babin, N., Klier, C.**, & Singh A. S. (2022) Understanding and promoting adoption of irrigation efficiency practices in Paso Robles, California vineyards: The importance of farm typology and grower sustainability networks. Current Research in Environmental Sustainability 4(100143). DOI: https://doi.org/10.1016/j.crsust.2022.100143 Impact Factor: 6.984 Babin, N., Guerrero, J.**, Rivera, D.**, & Singh, A. (2021). Using Vineyard-level Climate Projections for Risk Management and Adaptation in the Paso Robles AVA. California Agriculture 75(3):142-150. DOI: https://doi.org/10.3733/ca.2021a0019

Si Gao	Assistant Professor	Full Time	Doctorate	2020	B.P. Harrison, S. Gao, M. Gonzales, T. Thao, E. Bischak, T.A. Ghezzehei, A.A. Berhe. G. Diaz & R.A. Ryals. 2022. Dairy manure co-composting with wood biochar plays a critical role in meeting global methane goals. Environmental Science & Technology 56(15): 10987-10996. S. Gao & T.H. DeLuca. 2022. Rangeland application of biochar and rotational grazing interact to influence soil and plant nutrient dynamics. Geoderma 408: 115572. T.H. DeLuca, M.J. Gundale, R.J. Brimmer & S. Gao. 2020. Pyrogenic carbon generation from fire and restoration fuel treatments. Frontiers in Forests and Global Change 3: 24. S. Gao, T.H. DeLuca & C.C. Cleveland. 2019. Biochar additions alter phosphorus and nitrogen availability in agricultural ecosystems: A meta-analysis. Science of the Total Environment 654: 463-472. S. Gao & T.H. DeLuca. 2018. Wood biochar impacts soil phosphorus dynamics and microbial communities in organically-managed croplands. Soil Biology and Biochemistry 126: 144-150. S. Gao, K. Hoffman-Krull & T.H. DeLuca. 2017. Soil biochemical properties and crop productivity following application of locally produced biochar at organic farms on Waldron Island, WA. Biogeochemistry 136(1): 31-46.

Michelle Stevens	Professor	Full Time	Doctorate	1996	Fleming, Tova and M.L. Stevens. 2011. Breaking the Silence: Ecocide and Renewal in Iraq's Marshlands. Earth First Journal 31(3): 13-17. Stevens, M.L. and E. Zaloza. Submitted 2010. Peer review for chapter and book completed, revisions incorporated and submitted Sept 2012. Chapter and book completed and submitted to University of Utah press. Fire, Floodplains and Fish: the Historic Ecology of the Lower Cosumnes River Watershed. Edited by Pei Lin Yu, In Rivers, Fish and the People. Tradition, Science and Historical Ecology of River Fisheries in the American West. University of Utah Press. Stevens, M.L. Sept 2009. Desperate Plight of the Mesopotamian Marshes, southern Iraq. Wetland Science and Practice. Stevens, M.L . 2004 . Ethnoecology of Selected California Wetland Plants. Fremontia A Journal of the California Native Plant Society, (accepted for Vol 32.2, April 2004). Stevens, M.L. 2004 . White Root (Carex barbarae Dewey, Cyperaceae). Fremontia A Journal of the California Native Plant Society (accepted for Vol. 32.2, April 2004) Stevens, M.L. 2004. Restoration of the Mesopotamian Marshes of Southern Iraq : Synthesis of Current Restoration Activities. Canadian Reclamation Summer/ Fall 2004: 7-11. Canadian Land Reclamation Association and Lester Communications . Stevens, M.L . 2003 . The Contribution of Traditional Resource Management (TRM) of White Root (Carex barbarae Dewey, Cyperaceae) by California Indians to Riparian Ecosystem Structure and Function. In Faber, P.M. (ed.). California Riparian Systems: Processes and Floodplain Management, Ecology, and Restoration. 2001 Riparian Habitat and Floodplains Conference Proceedings, Riparian Habitat Joint Venture, Sacramento , California .pp

Julian Fulton	Associate Professor	Full Time	Doctorate	2015	Julian Fulton, Michael Norton, and Fraser Shilling (2019). Water-Indexed Benefits and Impacts of California Almonds. Ecological Indicators 96: 711-717. † Mesfin M Mekonnen and Julian Fulton (2018). The effect of diet changes and food loss reduction in reducing the water footprint of an average American. Water International 43:6, 860-870. Julian Fulton and Heather Cooley (2018). The Water Footprint of California's Energy System, 1990–2012." In P. Gleick (Ed.), The World's Water, Volume 9. Oakland, CA: Pacific Institute. Marina Fischer-Kowalski, Monika Dittrich, Nina Eisenmenger, Julian Fulton, Thomas Kastner, Karin Hoskin, Heinz Schandle, Jim West & Tommy Wiedmann (2015). International Trade in Resources: A Biophysical Assessment, Report of the International Resource Panel. United Nations Environment Program. Julian Fulton & Fraser Shilling (2015). California's Water Footprint Is Too Big for Its Pipes. In A. Lassiter (Ed.), Sustainable Water: Challenges and Solutions from California. Berkeley, CA: UC Press. † Julian Fulton & Heather Cooley (2015). The Water Footprint of California's Energy System, 1990-2012. Environmental Science and Technology 49 (6): 3314-21. Julian Fulton, Heather Cooley, Susana Cardenas, & Fraser Shilling (2014). Trends and Variation in California's Water Footprint. In California Water Plan Update 2013. Sacramento, CA: California Department of Water Resources. † Julian Fulton, Heather Cooley & Peter H. Gleick (2014). Water Footprint Outcomes and Policy Options Change With Scale Considered: Evidence from California. Water Resources Management 28 (11): 3637–49. Julian Fulton, Heather Cooley & Peter H. Gleick (2014). Water Footprints. In P. Gleick (Ed.), The World's Water, Volume 8. Washington, DC: Island Press. Julian Fulton, Heather Cooley & Peter H. Gleick (2012). California's Water Footprint.

James Goldstene	Lecturer	Part Time	Masters	1989	Executive Officer, California Air Resources Board
Chris Papouchis	Lecturer	Part Time	Masters	2011	Taught Environmental Ethics (ENVS 111) to our undergraduate majors since 2011.

Space and facilities that would be used in support of the proposed program: Show how this space is currently used and what alternate arrangements, if any, will be made for the current occupants.

No new space will be required for the program courses or faculty offices. Courses will be mostly offered in the late afternoon and evenings, where class space in the ENVS department is available. Program courses would also be appropriate for the Downtown Campus since many environmental and natural resource State agencies are housed nearby. Existing ENVS T/TT faculty will be teaching the program courses and currently have adequate office space.

Library resources to support the program, specified by subject areas, volume count, periodical holdings, etc.:

Equipment and other specialized materials currently available: No specialized equipment or materials are needed.

Equipment and other specialized materials currently available:

Equipment and other specialized materials currently available: No specialized equipment or materials are needed.

Additional Support Resources Required

Enrollment and faculty positions should be shown for all discipline categories which will increase because of the new program and for all discipline categories which will decrease because of the new program. If faculty positions are to be transferred into the new program from other areas, the reductions in faculty positions should be shown on the appropriate discipline category or categories:

No additional resources for a disciplinary background are needed at the outset of the program.

Any special characteristics of the additional faculty or staff support positions needed to implement the proposed program:

Six units of Assigned Time per year is requested for a graduate program coordinator whose primary responsibility would include: recruiting and retaining graduate students, review applications, advise graduate students through graduation, coordinate curriculum development and scheduling, and produce annual review of program and student learning outcomes.
Budget for teaching graduate courses will be covered by tenured or tenure-track faculty and, if necessary, by professionals in the field with extensive expertise in the course material. If tenured or tenure-track faculty teach graduate courses, the Environmental Studies Department will need additional WTUs assigned to other faculty (up to 12 WTUS per year for the first 3 years, 18 WTUs in years 4,5)
Approximate WTU's needed per year in additional workload for the first 5 years:
1. 6 WTUs for graduate coordinator;
2. 12 WTUs per year for graduate required and elective courses in the first 3 years;
3. 18 WTUs per year for graduate required and elective courses in years 4 and 5; and
4. 3-6 WTUs for thesis and project advising (s-factor .5 WTU per student enrolled)

The amount of additional lecture and/or laboratory space required to initiate and sustain the program over the next five years: Indicate any additional special facilities that will be required. If the space is under construction, what is the projected occupancy date? If the space is planned, indicate campus wide priority of the facility, capital outlay program priority, and projected date of occupancy.

No additional space requirements are needed. Most courses will be taught in the evenings on campus, at the downtown center, or online.

Additional library resources needed: Indicate the commitment of the campus to purchase or borrow through interlibrary loan these additional resources.

No additional space or resources are needed.

Additional equipment or specialized materials that will be 1) needed to implement the program and 2) needed during the first two years after initiation: Indicate source of funds and priority to secure these resource needs.

No additional equipment or specialized materials are needed during the first three years of the program.

Please attach any additional files not requested above:

correspondence over electives.pdf
Consultation with NSM, Geology and Biology.docx

Reviewer Comments:

Emily Wickelgren (wickelgr) (Fri, 04 Nov 2022 18:14:24 GMT): Rollback: See email on 11/4/22

Wayne Linklater (wayne.linklater) (Tue, 08 Nov 2022 17:59:47 GMT): Rollback: for revision

Wayne Linklater (wayne.linklater) (Tue, 08 Nov 2022 19:51:47 GMT): Rollback: .

Amy Wallace (amy.wallace) (Thu, 10 Nov 2022 18:31:29 GMT): Please 1:1 map PLOs to GLGs. Only the Competence in the discipline can overlap and we need distinct in all others. Also split written and oral com into to. We are going to need that for the CO approval process.

Wayne Linklater (wayne.linklater) (Tue, 07 Feb 2023 18:14:07 GMT): Rollback: For revision wrt MS

Amy Wallace (amy.wallace) (Thu, 30 Mar 2023 22:37:56 GMT): Please change all wording to MS Environmental Studies, including all attachments.

Rachel Flamenbaum (flamenbaum) (Sun, 08 Oct 2023 00:19:36 GMT): Rollback: pls see email

Rachel Flamenbaum (flamenbaum) (Sat, 21 Oct 2023 19:10:14 GMT): Rollback: ps see email

Rachel Miller (rachel.miller) (Wed, 29 Nov 2023 18:26:05 GMT): Rollback: This number of units will likely not be approved by the Chancellor's Office. They cap MA and MS degrees at 30 units and will likely refuse to approve of a degree that is above 30 units, even if it is a range. Exceptions can be made in the case of external accredidation or licensure requirements, but it doesn't seem like that would apply to this degree. PLO is worded in a confusing way. We would suggest something a bit more straightforward, such as "Create scholarly products or professional deliverables..." ENVS 295 and 299 are listed as culminating experience options, but typically culminating experiences are confined to 500 courses. Should these be moved to the electives category? Program description should have an explicit description of what the culminating experience is

Amy Wallace (amy.wallace) (Fri, 01 Dec 2023 16:49:50 GMT): PLOs must align 1:1 with CSUS GLOs or the CSU will not approve this, and have the required CSU templates (Assessment Plan) and (Curricular Matrix) that show that each can and will be assessed independently for improvement. the documents attached are not the required CSU templates.

Rachel Flamenbaum (flamenbaum) (Thu, 07 Mar 2024 01:22:20 GMT): Rollback: per email

Wayne Linklater (wayne.linklater) (Mon, 26 Aug 2024 20:08:22 GMT): Rollback: .

Key: 546