Substantive Change Application Form

New Baccalaureate Degree Program

Directions: This application should be submitted *at least* 30 days prior to the anticipated start date of the change. Applications must be complete and the required fees received in order to be scheduled for review.

Email completed application to substantivechange@accjc.org.
Fees must be submitted to ACCJC, P.O. Box 147, Novato, CA 94948

Date of Inquiry: March 2023 **Anticipated Start Date: Fall 2024**

Institution Name: Feather River College

Address: 570 Golden Eagle Ave.

City: Quincy **State: CA** **Zip: 95971**

ALO Name: Derek Lerch **Telephone: 530-283-0202 x321** **Email:dlerch@frc.edu**

Title of Application and Description of Proposal:

Seeking ACCJC approval to offer second bachelor's degree: B.S. in Ecosystem Restoration and Applied Fire Management

Introduction:

Concise description of the proposed program:
Students pursuing the Bachelor of Science degree in Ecosystem Restoration and Applied Fire Management will learn important skills in 1) data and geospatial fields, 2) environmental policy and management planning, 3) communication, and will learn 4) information about the historical and cultural context related to natural resources and ecosystem management in the West. Students will also gain applied training in 5) prescribed fire and fuels management techniques and receive National Wildfire Coordination Group (NWCG) certifications that are essential in this workforce. Finally, students will gain hands-on training in 6) forest ecosystem management and reforestation and 7) watershed restoration. Upon completion of this degree, students will be prepared to work as land managers with specific skills in the application of fire on the landscape, as well as forest and

stream restoration. The suite of coursework and experiences proposed in this application aims to prepare students to understand landscape-scale issues and engage in system-level responses to challenges.

Rationale for the proposed program:

Feather River College is submitting a proposal for a new bachelor's program in the area of Ecosystem Restoration and Applied Fire Management. This new offering will build on our existing associate degree in Environmental Studies and will train students in the technical skills required to use applied fire and other tools to manage landscapes and restore those ecosystems devastated by recent megafires. The education and skills that students will gain through the upper division coursework in this program are essential in meeting critical workforce needs in our region, where employers struggle to find and retain appropriately trained professionals and 53% of recently advertised jobs in this industry required a bachelor's degree and only 4.4% required an associate degree as a minimum qualification. Employees across our region are eager to hired trained individuals to work in the space of forest and landscape management and post-fire restoration, while also engaging in proactive fire resilience projects in locations that have not recently burned.

Students living in Plumas County typically do not have the ability to commute to access a bachelor's degree level education. The closest University is CSU Chico, which is two hours away. However, even if students were able to commute or relocate to this regional institution, CSU Chico does not offer any undergraduate forest management, restoration, or fire science degrees at this time. In addition, HWY 70 has been closed almost continuously since July 2021 due to destruction from fire and floods, which has further isolated our community and limited our residents' educational workforce training opportunities. This major artery of transportation currently has no estimated time of reopening. Unfortunately, major highway closures have become increasingly frequent, highlighting the need to bring additional opportunities for education and professional advancement into our rural communities.

While our proposed program is unique and no California school currently offers an applied, technical, prescribed fire and restoration degree, there are three universities in California which do offer forestry programs. However, these programs are all significant distances away from our county and region (Cal Poly Humboldt 5.5 hours, UC Berkeley 4.5 hours, Cal Poly San Luis Obispo 7.5 hours). These programs are inaccessible to many of our placebound community members who have local family responsibilities. In addition, these outside programs train students to manage landscapes and ecosystems that are different from those found in the Sierra Nevada region. The resources, tourism, ecosystem services and biodiversity of the Sierra Nevada are foundational to the California economy and health of the state's many residents and the ecosystems in this region have unique ecology and management needs. Currently, there are no bachelor's degree programs in fire, forest management, watershed or landscape restoration offering specialization in Sierra Nevada ecosystems. Furthermore, there are no CSUs nor UCs located in the entirety of the 31,000 square mile Sierra Nevada Region of California.

While our campus is isolated from other advanced educational institutions, we are situated amid a vast 1.2-million-acre learning landscape, the Plumas National Forest. Feather River College holds

multiple Special Use Permits for this area and utilizes the surrounding landscapes as a teaching tool at every opportunity.

Evidence of sufficient demand for proposed program:

The recent trend of devastating megafires in our county and beyond has highlighted and accelerated the need for a trained workforce prepared to meet the unprecedented landscape restoration needs that we face in the wake of these fires. California is increasingly experiencing the disastrous effects of 150 years of fire suppression, compounded by the stresses of climate change, associated issues due to insects and disease, and the legacy of the forceful removal of indigenous peoples and their traditional land management practices. Our home in Plumas County has achieved unfortunate records when it comes to the size and scope of recent wildfires: two of the top ten largest wildfires in California history occurred in Plumas County (Dixie 2021, North Complex 2020), including the largest single fire in California history to date (Dixie 2021). Three of California's most destructive fires ignited in Plumas County (Camp/Paradise 2018, North Complex 2020, Dixie 2021) and two of the state's largest incidents in 2021 occurred in Plumas County (Dixie, Beckworth). The 2021 Dixie fire alone burned nearly one million acres; an area larger than the size of Rhode Island. An astounding 60% of Plumas County has burned, primarily in devastating, high-severity fires, in recent years. Our region's urgent need for expertise in landscape management that incorporates: 1) applied fire and related fuels reduction, 2) reforestation, 3) broader ecosystem and watershed restoration, 4) prioritization of indigenous cultural knowledge, cannot be overstated.

Ensuring that we have the appropriate workforce in place to manage landscapes and make them more resistant and resilient to major wildfires is not only a benefit to our local communities, but has potential, widespread benefits across the state of California. Using applied fire, fuels reduction, stream and riparian enhancement, and other restoration techniques to appropriately reduce the occurrence, and devastating effects, of major fires will minimize the enormous cost to the State of California and nation allocated to fire suppression, reduce significant smoke and associated health and safety impacts to our state, and will protect the water quality of the California State Water Project which initiates in Plumas County. The Upper Feather River Watershed provides water to over 27 million Californians.

Employers in our region are urgently looking to bring on trained professionals to manage forests and surrounding watersheds, using prescribed fire and other tools to reduce fuel loading, and to reforest and restore forest, riparian, and meadow ecosystems after fire devastation. Close communication with local agencies, non-profits and industries that work at the intersection of forest and watershed management and restoration are struggling to find and retain qualified individuals to do this important work. The combination of applied skills that is a unique focus of our proposed degree and a bachelor's level education in forest and watershed management will equip graduates with the skills and qualifications to fill jobs in our region that are essential in meeting the current pressing environmental challenges of our time. The degree proposed here is an essential component of our region's response to, and recovery from, recent fires, while simultaneously increasing the resilience of our landscapes to withstand further deleterious effects of impending climate change.

The Centers of Excellence for Labor Market Research: Program Endorsement Brief for Forest Management in the North/Far North, provided to us by the Far North Center of Excellence in December 2021, found that, "based on a three-year average of annual awards in the Far North region related to forestry management training programs and projected yearly openings, the supply gap analysis shows that the region seems to have room for additional training for both middle-skill and high-skill occupations."

This Program Endorsement Brief highlights that 53% of advertised jobs in the region require a bachelor's degree while only 4.4% of jobs require an associate degree, a stark dichotomy. The report also highlights 67% of jobs are accessible to students with 0-2 years of professional experience. Furthermore, this report shows that high-skilled jobs (those requiring a bachelor's degree) are expected to grow by approximately 5% by 2025. Therefore, newly minted bachelor's students are in high demand in this workforce area for the Far North Region. This is confirmed by the high number of job applications that are sent to, and requests that are received by, Environmental Studies Faculty from local and regional employers looking for qualified applicants to fill jobs. Currently, Faculty in Environmental Studies have more requests from local organizations seeking to employ students than we have qualified students to send them, because many of the job openings require a bachelor's degree as a minimum qualification.

While community colleges in the Far North region issued an average of 35 certificates or associate degrees over the last three years, and other post-secondary institutions averaged 42 bachelor or master's degrees, 463 annual job openings are projected in middle and high-skilled occupations within forestry management (Far North Center of Excellence, Dec 2021). This discrepancy between a small number of degrees awarded and an outsized workforce demand further underscores the need for additional opportunities for educational advancement in our region. Feather River College enjoys a robust relationship with data analysts at the Center for Excellence for Labor Market Research and continues to work with their staff closely, to understand and analyze workforce and labor needs in our region and across the state. The data confirms the numerous discussions our faculty have had with regional employers: Employers are struggling to fill job openings with qualified individuals and increasing the available workforce is a bottleneck for many organizations across the public, private, and nonprofit sectors.

These conversations are reiterated in letters of support that we have received from regional employers and partners, which outline the incredible deficit of skilled employees in natural resource management in our region. Below are examples of the letters of support from the following regional public, private and non-profit employers, and partners:

- Plumas National Forest – Forest Supervisor
- Plumas National Forest – Mount Hough Ranger District Fire Management Officer
- Plumas National Forest – Beckworth Ranger District Fire Management Officer
- CALFIRE – California Prescribed Fire Monitoring Program Coordinator
- CALFIRE – Plumas County Forest Program Manager
- University of California Agriculture and Natural Resources – Cooperative Extension Forester and Natural Resources Advisor
- Feather River Resource Conservation District – District Manager
- Sierra Pacific Industries – Procurement Forester
- Sierra Institute – Executive Director
- Spatial Informatics Group – Natural Hazards Program Manager
- Plumas County Fire Safe Council – Program Manager
- Watershed Research and Training Center – Directors of Fire Management

• Plumas Corporation – Executive Director
• Big Chico Creek Ecological Reserve – Director

Communication with local and regional employers inform us that the proposed Ecosystem Restoration and Applied Fire Management degree will provide students with the education and training explicitly listed as required qualifications from these employers. Currently, hiring managers are challenged to find qualified individuals to join their organizations.

Every one of the eighteen letters of support detailed the deficit in available local workforce:
• "[We face] a shortage of skilled professionals."
• "Our capacity to engage [in ecosystem restoration] is limited by the available workforce."
• "[Graduates will] provide the much needed help to the agencies and industries that provide the backbone for the economy and infrastructure [of our rural communities]."
• "We have a difficult time finding quality applicants that can qualify [for employment] based on both experience and education."
• "The workload ahead of the…region is both tremendous and ambitious, requiring increased capacity of highly-qualified employees."
• "[Our organization] struggles to fill full-time benefitted positions with qualified applicants."
• "We have had difficulty in filling many positions in resource management."
• "Recruiting project managers with the requisite educational knowledge…has been challenging."
• "As California's climate dries over the coming decades these risks and impacts will only amplify unless we have a major increase in work force capacity."
• "[This degree is] uniquely designed to meet the technical needs of the State's effort to grow workforce capacity in fire management."
• "The specific regional workforce needs [pertaining to fire and fuels management] in the Sierra Nevada…are clearly evident if we look at the recent patterns and impacts of catastrophic fire and current fire risk."
• "The State of California is in dire need of people with the right education and training to serve in key prescribed fire planning positions across the State."
• "California's fire issues are substantial and geographically dispersed programs are needed to meet workforce demand."
• "Filling positions that require a degree in rural communities in the Sierra is difficult."

Further, attrition of lower-level, local federal land managers is substantial. These entry-level employees seek upward job mobility but are unable to advance due to a lack of locally available, college-level coursework necessary to progress at these institutions. Federal supervisors recognize that the coursework outlined in this proposed bachelor's degree will support individuals in career advancement within their organizations. Letters of support from federal and state agencies indicate that this degree would fulfill the need for professional development and career advancement opportunities within their organizations:
• "[This degree] will allow [individuals] in the Forest Service to have more upward mobility and ultimately allow employees to get paid higher wages."
• "Students with the proposed education and training could help our organization…[with] advancement for career positions in federal land management that require a 4-year degree."
• "Feather River College's proposal [is] full of opportunity for partnership to provide both young professional development as well as mid-career and community level continuing education that is needed [in] the natural resources field."
• "Having a program like this close by will enable current employees to better themselves through education."

Numerous local and regional employers have provided feedback on our proposed course curriculum, ensuring the degree detailed in this application is in line with the skills and experience required to succeed professionally in the natural resource workforce. The Environmental Studies Program at Feather River College is committed to serving our community by helping to fill the tremendous education and workforce training gap.

Additional excerpts from letters of support that and shed light on the importance of this application, but are not mentioned elsewhere include:

- "[This degree] represents a first-of-its-kind effort to offer students an educational toolkit for the State's effort to increase the pace and scale of prescribed fire and forest restoration, as articulated by the Governor and the Wildfire and Forest Resilience Task Force."
- "This is about saving and restoring not only ecosystems, but also creating fire-adapted human communities and saving lives."
- "Students graduating with an educational background and applied skills sets in these areas will be a critical asset to the workforce in our region."
- "[The] Dixie Fire claimed many lives and homes, devastated communities and infrastructure, and severely altered almost 2/3 of our 1.2-million-acre Plumas National Forest landscape."
- "Feather River College is appropriately located in the heart of the northern Sierra which is ground zero for where this type of restoration work is most desperately needed."
- "The growing amount of burned forests and wildlands and the emerging restoration need in California is staggering. Feather River College's proposal for a bachelor's program in Ecosystem Restoration and Applied Fire Management is not only needed for professional development, but is organic, appropriate, well-located, and timely."
- "Fire, forest management, and landscape restoration issues are literally at the college's doorstep, and there is no better training ground than the learning landscapes surrounding the college."
- "We also need a workforce that prioritizes indigenous cultural knowledge."
- "Having a local institution provide a Bachelor of Science level program targeted to this very challenge [increasing ecosystem restoration] will be beneficial to...help other NGO's and agencies in the region turn public policy into reality."
- "We envision students with the proposed education and training helping our organization by assisting with a cultural shift to see fire as a beneficial tool when used properly, altering the burnable fuels to create a safer environment for firefighters, and restoring ecosystems for wildlife habitat, the beneficial uses of water, and maintaining working forests."
- "Forestry, prescribed fire, fuels management, and restoration are essential to the residents and visitors of the State of California. To meet this end, we will require a large work force trained in delivering the projects and activities required."

Standard I: Mission, Academic Quality and Institutional Effectiveness, and Integrity

Describe how the proposed program is consistent with college's mission and goals.
The Bachelor of Science in Ecosystem Restoration and Applied Fire Management enhances the mission of Feather River College by offering an advanced degree to a diverse student population in a small-college environment. This field requires hands-on learning about forest and natural systems, which aligns strongly with Feather Rivers' mission to provide education in a small college setting that takes advantage of our natural setting. As the only community college in the state chosen to implement an applied four-year natural resources degree, students will now be able to receive an affordable education in an area that has great demand in the workforce. The baccalaureate degree will build upon the institution's goal of student learning and student achievement in an arena that is very limited to most of these students due to a lack of educational options and funds. Through annual community, employee, and student surveys, the College continues to use data to determine how effectively it is accomplishing its mission to support the educational needs of its students and community. FRC aligns its priorities with its mission through integrated planning activities, which are then executed through programs and services. Feather River College engages faculty and staff in a variety of robust planning and evaluation processes to ensure that each member of Feather River College staff understands and adheres to the mission of the College. The mission is periodically reviewed by the Board of Trustees and is adapted dependent on the changes in the environment and circumstances of the College. Key FRC shared-governance bodies such as the Academic Senate, the Committee on Instruction, the Planning and Budget Committee, the Strategic Planning Committee, and the Student Services Council work in an integrated manner to support a sustained, substantive, and collegial dialog concerning student outcomes, student equity, academic quality, institutional effectiveness, and continuous improvement of student learning and achievement. Faculty take ownership and leadership in the arenas of curriculum, instructional student learning outcomes assessment, and program review. The baccalaureate degree will follow the same rigorous course approval process as every other course offered at FRC and maintain the same level of accountability and integrity by the instructors. The program will follow Feather River College's institution-set standards and student learning outcomes as established in the course catalog. The ongoing dialog between the governance committees, departments, and administration will ensure that the goals of the program will be regularly updated, based on annual student learning outcomes assessments and student achievement data that will better support student success. The College will analyze Student Equity Plans to ensure that the subpopulations in the program are served accordingly and at the level of consideration enforced by Feather River College's policies and procedures. Feather River College provides clear, accessible information to students and the public about its mission, student learning outcomes, educational programs and accreditation status. Information on the baccalaureate degree will be provided through the current channels of communication including the College catalog, the College website, and other promotional material.

Describe the planning process that led to the proposed baccalaureate degree.

The Feather River College mission contains many facets, including providing high-quality, comprehensive student education and opportunities for learning, serving as a cultural and economic leader for local communities, and embracing the opportunities afforded by the college's natural setting. Expanding the degree offerings to include a BS in Ecosystem Restoration and Applied Fire Management will serve to build on the work that our college has already achieved towards fulfilling its mission. While Plumas has a small population, it is an area whose economy and culture are centered around the environment and its management. Many of the original majors at FRC were focused on areas related to the environment. Currently the county is home to two local and one supervisor's office for the 1.2 million-acre Plumas National Forest, whose employees are trained in a variety of specialties related to natural resources, specifically relevant to the outcomes of this degree proposal.

The college currently offers AS degrees in Environmental Studies and Environmental Science, as well as several technician-level certificates in specifically applied areas of natural resources. This proposal for the BS in Ecosystem Restoration and Applied Fire Management is a response to workforce, societal, and economic needs communicated throughout our region by employers and community leaders. This program represents a logical extension of the College's long and successful history of providing training programs in the environmental and natural resources fields.

Specifically, the College has successfully added a bachelor's degree previously in Equine and Ranch Management and, in doing so, has expanded its mission to include the awarding of bachelor's degrees as well as the development of all the necessary policies to support this mission. In creating the existing bachelor's degree in Equine and Ranch Management as well as this proposed degree in Ecosystem Restoration and Applied Fire Management, the College is furthering its mission by providing high-quality education and training to support the regional workforce and environmental needs in an accessible and affordable manner. Feather River College will remain a community college, serving the needs of the local community and providing job-training opportunities relevant to the region. The addition of the proposed baccalaureate degree furthers this goal.

Describe how the baccalaureate degree program will be evaluated and fit into the existing college planning process.

The proposed Bachelor of Science in Ecosystem Restoration and Applied Fire Management complements Feather River College's current curriculum and offerings well. The Environmental Studies program and the natural resource management training, certificates, and associates degrees have been a hallmark of our Institution since its founding in 1968. The BS in Ecosystem Restoration and Applied Fire Management is a natural fit for our college and community and builds on our AS in Environmental Studies, in a two-plus-two-degree format. Other Associate of Science programs that are currently offered by FRC in the field of natural sciences include Environmental Science, Biology, Geology, Physical Science, Forestry, Fire Ecology, and Agriculture and Equine Science.

Feather River College has successfully implemented and sustained its existing Bachelor of Science in Equine and Ranch Management. This included the College's inclusion in the Bachelor's Degree Pilot (BDP), its submission and subsequent approval of a Substantive Change Proposal with the ACCJC, and completion of all required tracking and reporting of enrollment, success, and employment as expected by the Chancellor's Office and the LAO. Additionally, the College revised its mission and numerous policies and procedures to support this program. The policies and processes that are in place to support this existing bachelor's degree program will aid in the rapid and successful implementation of the new degree in Ecosystem Restoration and Applied Fire Management.

The program will participate in the College’s establish planning and budgeting processes that have been in place without significant deviation since 2009. This includes both annual and comprehensive program reviews, along with assessment of course and program-level learning outcomes. These processes provide the basis for program development and resource allocation.

Standard II: Student Learning Programs and Support Services

Explain the program requirements (include program sheet for the college catalog).

- **Must provide evidence Baccalaureate Degree has 120 credits**
- **Must provide evidence degree has 36 units of General Education**

Feather River College built a comprehensive curriculum for the Bachelor of Science in Ecosystem Restoration and Applied Fire Management program. The content of the coursework was informed by community input, faculty expertise and data analysis. The College ensures that the content and methods of instruction meet generally accepted academic and professional standards and expectations. It is the understood faculty responsibility to communicate SLOs to students through a course syllabus that includes the learning outcomes from the institution's officially approved course outlines. The SLOs will be complimentary to each other and to the College's mission.

Feather River College's baccalaureate degree is aligned to meet ACCJC accreditation standards. The degree layout follows minimum degree requirements of 120 units, and the institution will schedule the classes in manner that allows students to complete the degree in a minimum of four years, consistent with established expectations in higher education. The first two years of the baccalaureate degree involves general education courses required for the major including math, science, English and other core courses as established by the CSU Breadth pattern. The second two years of the program consist of predominately upper division course work including upper division core requirements, and upper division general education and elective requirements. The College staff is confident that the degree content is up to bachelor's degree standards and unit requirements as it has successfully implemented and sustained the existing bachelor's degree in Equine Science and Ranch Management since 2015. The baccalaureate program consists of forty-two to forty-three lower division general education units, exceeding the minimum baccalaureate level General Education requirement of thirty-six semester units. The general education classes are distributed across the major areas of general education and the courses are integrated throughout the curriculum, with a minimum of six general education units required to complete the degree. The general education requirements were constructed around CSU breadth requirements and will be able to transfer over should a student choose to continue their education elsewhere.

Reviews of the curriculum are conducted every four years for academic programs. The Environmental Studies Department's Annual Program Review has been made available to the campus and the public on the College website. These reviews are based on systematic analysis of data sets on student success and student learning outcomes. The result of these reviews will determine the effectiveness of the delivery modes, teaching methodologies and learning support services offered to the baccalaureate students. The College will systematically strive to improve the programs and courses to enhance learning outcomes and achievement for the students.

Degree requirements

Lower Division Requirements – (35-37 Units)

Core – ALL

Seminar in Environmental Studies – 1 Unit
Introduction to Environmental Science + Lab – 4 Units – CSU Area B1orB2&B3
Geospatial Concepts w/ Lab – 3 Units
Environmental Policy – 3 Units – CSU Area D
Professional Development Seminar– 1 Unit

Biology Core – CHOOSE ONE
Plant Biology w/ Lab – 4 Units OR Animal Biology w/ Lab – 4 Units – CSU Area B2&B3
Physical Science Core – CHOOSE ONE
General Chemistry 1 w/ Lab – 5 Units OR Soil Science w/ Lab – 3 Units – CSU Area B1&B3

Math
Stats – 4 Units – CSU Area B4

Natural Resources Core – ALL
Introduction to Forestry w/ Lab – 3 Units
Introduction to Fire Ecology and Management w/ Lab – 3 Units
Introduction to Watershed Protection and Restoration w/ Lab – 3 Units
Sierra Nevada Natural History w/ Lab – 3 Units

In addition, students must complete the CSU breadth pattern for general education courses and other electives for a minimum of 60 units.

Upper Division Requirements – B.S. in Ecosystem Restoration and Applied Fire Management (38 units)

Core – ALL
Environmental Management and Planning – 3 Units
Human Dimensions of Natural Resources – 3 Units
Traditional Ecological Knowledge w/ Lab – 3 Units
Environmental Monitoring and Analysis w/ Lab – 3 Units
Ecological Disturbance and Health w/ Lab – 3 Units
Restoration Ecology w/ Lab + Restoration Field Visits– 3 Units
National Wildfire Coordinating Group (NWCG) Certificates – Required: Basic-32 (L-180, S-130, S-190)
Choose from: Chainsaw
Use (S-212), Firing Operations (S-219), Followship to Leadership (L-280), etc. – min. 4 units
Internship – Variable Units
Capstone Management Project – 3 Units

Applied Fire Concentration – ALL + one from Ecological Restoration Menu
Advanced Fire Ecology and Fire Effects w/ Lab – 3 Units
Prescribed Fire and Fuels Management w/ Lab – 3 Units
Applied Field Hours on Prescribed Burns and Wildfires (including optional advancement in Federal Firefighter Type I (Squad
Boss) Task Book) – Variable Units

Ecological Restoration Concentration – ALL + one from the Applied Fire Concentration Menu
Advanced Riparian Restoration and Management w/ Lab – 3 Units
Advanced Forest Ecology and Management w/ Lab – 3 Units
Reforestation w/ Lab – 3 Units

In addition, students must complete 6 units of upper division general education and other electives for a minimum of 60 units.
Other Electives Offered Outside Requirements
Introduction to Environmental Studies – CSU Area D

Geographic Information Systems
Introduction to Wildlife – CSU Area B2/B3
Introduction to Fish- CSU Area B2/B3
Physical Geology – CSU Area B1/B3
Physical Geography – CSU Area B1/B3

Sample Eight-Semester Plan

Fall Year One – 14 Units
Seminar in Environmental Studies – 1 Unit
Environmental Science + Lab – 4 Units – CSU Area B1 or B2/B3
Natural Recourses Core Elective – Sierra Nevada Natural History – 3 Units
CSU Breadth A3 – 3 Units
CSU Breadth D3 & US2/US3 – 3 Units

Spring Year One – 16 Units
Geospatial Concepts – 3 units
Biology Elective – 4 Units – CSU Area B2/B3
Natural Recourses Core Elective – Introduction to Forestry – 3 Units
CSU Area A2 – 3 Units
CSU Breadth Area C2 & US1 – 3 Units

Fall Year Two – 15 Units
Professional Development Seminar – 1 Unit
Natural Resources Core Elective – Watershed Protection and Restoration – 3 Units
Statistics – 4 Units – CSU Area B4
CSU Area A1 – 3 Units
CSU Area C1 – 3 Units
Elective – 1 Unit

Spring Year Two – 15 Units
Environmental Policy – 3 Units – CSU Area D8
Physical Science Core – Introduction to Soil Science – 3 Units – CSU Area B1/B3
Natural Resources Core Elective – Introduction to Fire Ecology and Management – 3 Units
CSU Area E – 3 Units
CSU Area F – 3 Units
B.S. Degree in Ecosystem Restoration and Applied Fire Management

Fall Year Three – 14+ Units
The American West – 3 Units – Upper Division General Education
Environmental Monitoring and Analysis – 3 Units
Advanced Forest Ecology and Management (Restoration Concentration) OR Elective – 3 Units
NWCG Certification Options – 1+ Units
Elective – 3 Units
Elective – 2 Units

Spring Year Three – 15+ Units
Restoration Ecology – 3 Units
Environmental Management and Planning – 3 Units
Traditional Ecological Knowledge – 3 Units

Advanced Fire Ecology and Fire Effects (Fire Concentration) OR Elective – 3 Units
NWCG Certification Options – 1+ Units
Elective – 3 Units

Summer Year Three – 1-4 Units
Internship – Variable Units

Fall Year Four – 15+ Units
Technical Writing and Communication – 3 Units – Upper Division General Education
Capstone Management Project – 3 Units
Ecological Disturbance & Health – 3 Units
Reforestation (Restoration Concentration) OR Elective– 3 Units
Advanced Riparian Ecology and Restoration (Restoration Concentration) OR Elective– 3 Units
NWCG Certification Options – 1+ Units

Spring Year Four – Variable Units
Human Dimensions of Natural Resources – 3 Units
Prescribed Fire and Fuels Management (Fire Concentration) OR Elective – 3 Units
Applied Field Hours (Fire Concentration) OR Elective– Variable Units
Elective
Elective

Provide evidence that program learning outcomes are the appropriate level for Baccalaureate Degree.

Students will receive credit for the course work based on the achievement of student learning outcomes that are assessed by the instructor. The student learning outcomes for each baccalaureate course are appropriate to the upper division course level and require competency in program-specific learning outcomes.

Describe the impact on Student Services (counseling/advising, etc.), Learning Support Services (tutoring, etc.), Library Services, and other activities that will support students.

Feather River College supports student learning and achievement by providing library, instructional resource center, and other learning support services to students and to personnel responsible for student learning and support.

The Feather River College Library and learning center offers a rich collection of information resources in print and online to support Ecosystem Restoration and Applied Fire Management students and faculty. The library supports the College curriculum with a collection of approximately twenty-one thousand books, over one hundred periodical subscriptions, several state, local and national newspapers, and hundreds of videos and DVDs. High quality research can be performed using the scholarly electronic databases accessible to students from the library, learning center, computer labs, as well as from off-campus computers with an Internet connection (a password is required).

As a member of the North State Cooperative Library System, the FRC library has access to the collections of seven other college libraries and thirteen county libraries. Weekly delivery service between these libraries ensures that Feather River College students can promptly obtain almost any library materials they may need. The library is a comfortable and well-lighted area with tables for group study and individual carrels where students may study or read for pleasure in a quiet atmosphere. An audio-visual room with carrels allows students to use the media collection in privacy, without disturbing others.

Feather River College regularly evaluates the quality of student support services and maintains a culture of supporting student academic achievement in alignment with the mission of the College, which emphasizes access and equity in a diverse learning environment, regardless of mode of delivery. Student Services staff regularly engages in conversations and meetings regarding access, success and the effectiveness of its programs. Student learning outcomes data, and data on successful student attainment of their goals provide measurements of student's ability to benefit from FRC's services and programs.

Advising and counseling will be essential to the success of the baccalaureate degree students. The counseling and advising programs offered at FRC will orient the students to ensure they understand the requirements related to the degree program, and receive timely, useful and accurate information about relevant academic requirements. The College adheres to admission policies consistent with its mission. With the guidance of the student services department, the students will understand the qualifications and pathways necessary to complete the degree and achieve student learning outcomes

Standard III: Resources

Please describe the staffing plan to support the proposed program.
Faculty:
Full-Time Faculty i. Bridget Tracy – Bridget has been an instructor at Feather River College in the Environmental Studies and Earth Sciences Programs since 2012. She teaches courses in forestry, environmental science, soil science, earth science, environmental studies, and more. She has a Bachelor of Science in Forestry and Natural Resources from UC Berkeley and a Master of Science in Hydrologic Sciences from UC Davis. Before beginning her faculty position at Feather River College, Bridget worked for the UC Berkeley Wildland Fire Sciences and Forest Ecology and Ecosystem Dynamics Laboratories at UC Berkeley, completing forest, fire and fuels inventories across the Sierra Nevada. She completed graduate work with the UC Davis Watershed Center analyzing carbon budgets in the large, forested watersheds of the Northern Sierra. In addition, she worked monitoring and managing natural resources for Point Reyes National Shore and the Marin Municipal Water District. She has over 15 years of college-level teaching experience at FRC, teaching Sierra Nevada Ecology field courses for UC Berkeley's Department of Environmental Policy and Management, and teaching Water and Society and Environmental Measurements courses for UC Davis's Department of Land Air and Water Resources. Bridget is certified as Wildland Firefighter Type 2. ii. Dana Flett – Dana teaches across the Environmental Studies and Outdoor Recreation Leadership Programs at Feather River College and serves as Program Co-Coordinator of the Environmental Studies Department. She has a Bachelor of Science in Conservation and Resource Studies and a minor in Forestry and Natural Resources from UC Berkeley. She earned a Master of Science in Wetland Ecology and Restoration at Colorado State University and finished all coursework towards a PhD in Restoration Ecology at Colorado State University. Dana has a decade of experience teaching and mentoring a diversity of students at the University of California Berkeley, Colorado State University, and Feather River College. She has worked in the private, public, and non-profit sectors researching ecological processes and managing ecosystems. Prior to faculty appointment at Feather River College, Dana worked as a Project Manager at Plumas Corporation, a local non-profit specializing in largescale watershed restoration throughout the Sierra Nevada. In this role, she served on the steering committee of Sierra Meadows Partnership, a multi-agency group focused on increasing the pace and scale of restoration and protection of riparian ecosystems in the Sierra. Previous professional experience also includes working as an Environmental Consultant at a state-run institution and as a Restoration Ecologist in the private industry. She has conducted research in the local Bucks Lake Wilderness, in Yosemite and Rocky Mountain National Parks, throughout the entirety of the Sierra Nevada region, and across South America. Dana maintains certification as a Firefighter Type (FFT2), regularly attends Prescribed Burn Training Exchanges (TREX) and frequently engages in prescribed burn incidents and continuing education in fire and fuels management. She is an active member of the Plumas Underburn Cooperative, a local prescribed burn association. Fuels and Forest Health Program Coordinator and Associate Faculty iii. Jon Dvorak – Jon Dvorak is the Forest Health and Fuels Program Coordinator at Feather River College. He also serves as an Associate Faculty member in the

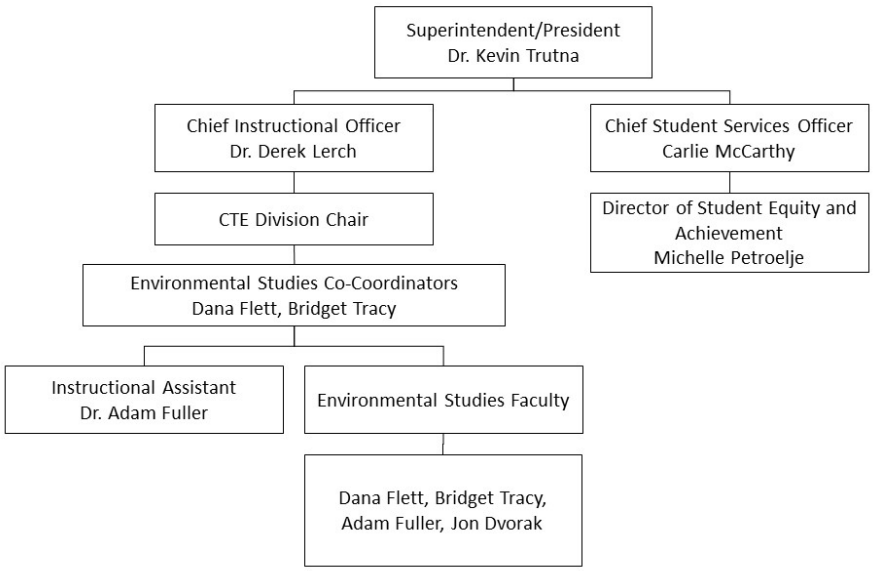
Environmental Studies Department, focusing on applied fire and fuels management. Jon began his career in natural resources on the Los Padres National Forest working on seasonal wildland fire and natural resources crews. After several years of working as a wildland firefighter, Jon returned to gain a Bachelor of Science in Forestry and Natural Resources Management at UC Berkeley, where he worked for the Wildland Fire Sciences Laboratory both as a student and after graduating. Soon after finishing his degree, he began working for the USFS Pacific Northwest Research Station's Fire and Environmental Research Applications Team (FERA) as a forester, helping to coordinate and implement large scale fuels treatments and prescribed fire projects across the United States. He moved back to California in 2012 and worked for UC Berkeley Forests managing their forests, educational and research facilities in Plumas County before coming to Feather River College.

iv. Don Fregulia- Don serves as Associate Faculty member teaching National Wildfire Coordinating Group Certification courses at Feather River College, while maintaining his career with the Plumas National Forest (PNF). Don started his career with the USDA Forest Service in 1997 and 1999. He was accepted to the Lassen National Forest (LNF) Hotshots and spent the next years on that crew. In 2007, he began a permanent appointment as a Fire Engine Operator on the PNF and was soon promoted to Assistant District Fire Management Officer, with an emphasis in Prescribed Fire and Fuels Management. In this position, he prepared NEPA documents as well as implemented 2,000-4,000 acres per year of prescribed fire. In 2013, he was promoted to his current position as the District Fire Management Officer at the Beckwourth Ranger District on the Plumas National Forest. In his current role, he runs the fire program for ~400,000 acres of public land and supervises five engines, one Hotshot Crew, one Fire Dozer, four Battalion Chiefs, four Prevention Technicians, and a temporary workforce of over 60 individuals. He also serves on a federal Incident Management Team as an Operations Section Chief. Don joined Feather River College's associate faculty in 2015 and has taught National Wildfire Coordinating Group (NWCG) certification courses at Feather River since that time.

v. Adam Fuller - Adam is director of the Feather River College trout hatchery and also serves as an Associate Faculty member, teaching courses on fish biology, aquaculture, and Geographic Information Systems (GIS). He has a Bachelor of Science in Ecology and Evolutionary Biology from the University of Tennessee, a Master of Science in Marine Biology from the Northeastern University, and a PhD in Biology from the University of Alabama. He has more than ten years of experience teaching courses at Northeastern University, the University of Alabama, and Feather River College. As Hatchery Director at Feather River College for the past six years, Adam has worked with the California Department of Fish and Wildlife, Trout Unlimited, and the Almanor Fishing Association to raise and stock fish in local lakes and waterways.

vi. Additional Faculty - Various other past associate faculty with expertise in fire, forest management and restoration have expressed interest in teaching in the bachelor's degree program outlined here, when implementation begins.

Staff:
Baccalaureate students will be closely monitored by the student services staff at Feather River College. Students will be assigned an individual advisor throughout their duration at Feather River College. This advisor will be specifically assigned the task of ensuring that student's successful academic path and educational plan will result in his or her admission into the baccalaureate degree and graduation from the program. Feather River College will utilize its current resources, including advising, financial aid, Disabled Student Programs and Services, online technology, and the learning center to assist students pursuing a four-year degree. The program will maintain its academic integrity by following the same Title 5 regulations enforced by the California Community College Chancellor's Office (CCCCO) and supported by Feather River College.
Administration:
Feather River College is fully accredited by the Accrediting Commission for Community and Junior Colleges (ACCJC), including the existing bachelor's degree in Equine and Ranch Management. FRC underwent its last comprehensive site visit in spring 2018 and had its accreditation reaffirmed without sanction by the ACCJC at the June 2018 Commission meeting. The College had its midterm report accepted in 2022 and is currently completing its ISER as part of the scheduled comprehensive accreditation visit in spring 2025. As the College has successfully launched and sustained a bachelor's degree as part of the initial Bachelor's Degree Pilot (BDP) that was initiated in 2015, the College has developed policies and practices since that time to support and award bachelor's degrees. The College's successful initiation and management of the existing bachelor's degree makes the development of a second degree entirely tractable and familiar. The College has successfully recruited, retained, and advanced students in the existing bachelor's degree program over the last seven years and is fully prepared to add an additional bachelor's degree to its offerings. The Environmental Studies program has been developing the foundation for this bachelor's degree program for the past several years in anticipation of this opportunity. The program has worked with the administration to explore the benefits and needs of this new program. The organizational structure of the relevant portions of the College that would interact regularly with this program are shown below:



Provide faculty qualifications.

Noted above under Faculty Description.

Explain the impact on the following resources:

Physical Resources

The Feather River College campus is a 450-acre parcel containing forests, meadows, and streams. Our campus abuts the Plumas National Forest that expands our outdoor laboratory space to 1.2 million acres.

Feather River College has worked with many agencies, tribes, non-profits, and other local and regional partners to procure grants to implement forest and watershed improvement on our campus. In the past decade, FRC has partnered with the Natural Resource Conservation Service (NRCS) and the local Greenville Rancheria to attain a Tribal Environmental Quality Incentives Program (EQIP) grant for forest management work and training. Most recently, Feather River College received a $300,000 Sierra Nevada Conservancy grant to improve forest and ecosystem health and mitigate fire risk on our campus. To support the college's mission to improve forest health and provide appropriate training to students in this space, FRC hired a Forest Health and Fuels Program Coordinator in 2020. The Program Coordinator works to manage these forest and watershed management grants by completing fuels reduction work, building regional partnerships to support education and training for fuels management and applied fire, managing student workers, and working with students in current Environmental Studies courses. The ongoing forest and fuels management, which is within view of our indoor classrooms, provides incredible and unique opportunities for student learning and engagement across our campus.

Our outdoor campus laboratory allows students to gain applied skills in forest measurements, prescribed and pile burning techniques, measuring pre and post treatment fuel loading, wildland chainsaw safety and use, etc. as part of everyday coursework. Spanish Creek, the headwaters of the California State Water Project, flows through the Feather River College campus. Students learning about watershed protection and restoration frequently visit this section of our campus laboratory to learn important hydrologic monitoring techniques and actively engage in critical theory and practice regarding stream and riparian restoration.

Technology

In addition to the program's existing budget, significant investments in relevant technology that aids student learning have been made possible by leveraging categorical and grant funds from sources such as Perkins, Strong Workforce, and IELM. The College will continue to prioritize investments as necessary to ensure a high-quality learning environment for students.

Equipment

Applied Fire Investments

Our college has long boasted a robust inventory of forestry and forest management tools for training students. In the last two years, Feather River College has significantly increased its fire tools and safety equipment. Our campus has invested in several large portable water tanks as well as a utility terrain vehicle (UTV) with a slip-in water tank, pump, and hose reel system. These resources serve an important safety role during on campus pile and broadcast burns. The campus has procured many drip torches, chainsaws, and other tools that facilitate training in, and implementation of, fuels and forestry work through the use of prescribed fire and other methods. Additionally, our campus has attained significant personal protective equipment that is standard in wildland fire environments, such as Nomex (flame resistant apparel), certified wildland fire packs, fire shelters, head, eye, ear, and hand protection, etc.

In the last two years, FRC has been part of several successful grant partnerships that have allowed use to secure funding to purchase additional forestry and fire equipment, purchase a Type 6 fire engine, bring on support staff, pay students to gain work-exercise by working on regional prescribed fires, develop integrated curriculum with other schools and tribal groups across the north-state, etc. These grant awards including, Sierra Nevada Conservancy grants, CAL FIRE grants, and Federal EDA Good Jobs grants, illustrate the important need for the type of training that our new degree will offer and ensured that we have adequate equipment to provide the best training and education to our students.

Our campus has a current burn plan registered with CAL FIRE and the Northern Sierra Air Quality Management District. This allows staff, in collaboration with our students and local partners, to conduct broadcast and other prescribed fires on campus during class lab hours, student employment hours, and as needed. Growth in our campus equipment arsenal and permitting efforts have been rapid and are fully supported and encouraged by campus administration and our District Board of Governors. This unified support further highlights the importance Feather River College and its constituents place on advancing scholastic innovation in student learning opportunities, meeting local and regional workforce needs, and enhancing the safety of our campus and the surrounding community.

Other Ecosystem Restoration Investments
Our college boasts one of the only production fish hatcheries at an educational institution in the State of California. Our system is a 10,000-gallon recirculating aquaculture system and includes everything needed to raise trout through their entire life cycle, from egg hatching to adult. This provides students with hands-on experience rearing salmonids, one of the most important and widely cultured groups of fishes in California waterways. Our three grow-out ponds not only contribute to trout aquaculture, but they also provide a convenient site for students to practice techniques for collecting water samples, animals, and plants. The hatchery fish room contains aquariums that house a wide variety of aquatic species. This allows students to learn about aquatic life by direct observation in a lab setting and provides them with the resources they need to perform their own small-scale experiments. To further supplement hatchery resources, students in hatchery classes frequently visit Spanish Creek, the on-campus riparian ecosystem. Hatchery and riparian resources are important in training students about stream and river restoration and management.

Explain the impact on financial resources.
Provide a budget showing evidence the institution has the capacity to start and maintain the proposed program.

Fiscally, Feather River Community College District provides for conservatively sound financial management which is reflected in one of the strongest reserve balances in California; continually exceeding the 50% law requirement, and limited exposure for increasing expenses that are managed by the District and funded annually. In its financial audits from the past three fiscal years, the District received only three deficiencies and no material weaknesses, documenting the effectiveness of the District's business and fiscal management.

Throughout the evolution of the Environmental Studies Program, FRC has consistently provided sufficient funding to deliver high-quality, safe, and student-centered. This program has spanned over four decades and helps to define the College and its service to the surrounding region. Going forward, FRC will continue to fund this flagship program as one of the school's important programs for enrollment and student achievement. Environmental Studies faculty plan on

offering approximately fifteen new upper-division courses to support the proposed bachelor's degree. Dependent upon demand, the courses will either be offered on a two-year rotation or annually. Based on interest expressed by current students and the program's historical ability to recruit new students, faculty leaders estimate that 20 students will enter the upper-division coursework in fall 2024. New operational expenses, especially one-time investments, will be further supported by the grant and categorical funding (e.g., Strong Workforce funding) that the College receives and will additionally be supported be recent grant awards.

Standard IV: Leadership and Governance

Describe the leadership and governance structure that will ensure academic quality and institutional effectiveness are sustained and maintained.
Effective leadership at Feather River College is evident at all levels. The College is fundamentally committed to education as an ideal, and to the empowerment and fulfillment of all learners. The College leadership creates and encourages innovation that leads to institutional excellence and milestones at the College such as the development of this baccalaureate program. The program will rely on broad institutional support for sustainability and leadership. The program will report to the Academic Senate, the VP of Instruction, the College President and the Environmental Studies Department faculty. The VP of Instruction oversees all academic programs and divisions including the baccalaureate degree, and the Environmental Studies faculty report to the VP of Instruction. Feather River College has followed all the College's written policies and procedures in the development of the previously approved bachelor's degree in Equine and Ranch Management including curriculum development, program development, hiring, and faculty evaluation. The same adherence to established policy and inclusive decision making will occur with this new degree in Ecosystem Restoration and Applied Fire Management.
Describe the internal approval process.
Congruent with its mission statement (BP 1200), the approval process for the bachelor's degree in Ecosystem Restoration and Applied Fire Management will follow established local policy consistent with ACCJC Standards and the laws and regulations governing the California Community College system. The curricular composition of all degrees and certificates posted to student transcripts have been reviewed and approved by FRC's Curriculum Committee, the Academic Senate, the Board of Trustees, and the California Community College Chancellor's Office. The College's suite of degrees and certificates includes locally-developed associate degrees, "Transfer" degrees (ADTs), and a range of low and high-unit certificates in career and technical education (CTE) fields. For CTE certificates and degrees, all have been presented and supported by the CTE regional approval organization: North Far-North. Of significance, the College developed an initial bachelor's degree in agriculture that necessitated the Board of Trustees approve an update to the College mission statement, expanding the mission to include the bachelor's degree offering. This degree was approved by the ACCJC through the Substantive Change process. This new bachelor's degree proposal in Ecosystem Restoration and Applied Fire Management follows on this work to support the institution's goal of student learning and student achievement in the field of natural resources and caters to a student population that may not have otherwise continued their education beyond the associate degree level. All programs and the courses that comprise them are approved and reviewed through the College's established and rigorous curriculum approval process. These programs and courses include student learning outcomes developed by faculty and approved by the Curriculum Committee, which are assessed regularly by both full-time and part-time faculty who teach within a program. Student attainment of established learning outcomes is central to the program review process for all instructional programs. Here, annual and comprehensive program reviews are completed by faculty to ensure quality and appropriate updates to meet industry, transfer, and student needs. These program reviews include assessment of program-level and college-level student learning outcomes.

All courses are reviewed and approved through the curriculum process established and governed by the Curriculum Committee, then forwarded to the Academic Senate for approval before being forwarded to the FRC Board of Trustees. This process applies to additions, deletions, and both substantive and technical course revisions. No separate course outlines exist to differentiate between courses offered in distance education and those taught in an in-person traditional manner. This ensures that all sections of courses taught at FRC, regardless of delivery modality, maintain the same goals, objectives, student learning outcomes, and academic rigor.

Describe the external approval process (state/federal approvals, etc.).

When California Governor Gavin Newsom signed AB 927 in 2022, it opened an opportunity for additional California Community Colleges to offer bachelor's degrees. At this time, Feather River College staff and leadership had a series of focused meetings to discuss the possibility of applying for the program to add an additional bachelor's degree to the already existing one in Equine Science and Ranch Management. They submitted the application to The California Chancellor's Office in January 2022 and in March 2023 the Chancellor's Office announced approval of the College's second bachelor's degree.

Evidence

Please include documentation that will help the Committee understand the process by which the change was developed, such as former and proposed mission and/or objectives, summary of discussions and approvals with campus constituents, (Board of Trustees, Academic Senate, students, community members), strategic plans, financial plans, copies of Board minutes, as appropriate, copies of draft legal documents regarding the new location, copies of draft legal documents dealing with matters of facilities and other institutional property, as appropriate. Please include documentation of all state and/or federal approvals, as appropriate.

1) Center of Excellence Labor Analysis (19 pages)
2) Little Hoover Commission Forest Management Analysis (87 pages)
3) US Forest Service Workforce Study (11 pages)
4) Appendix of Letters of Support – Industry (19 pages)
5) Appendix of Letters of Support – Education (8 pages)
6) Application for B.S. to Chancellor's Office, with local approval signatures (12 pages)
7) Approval letter from Chancellor's Office (1 page)