Integrative Conservation Minor

The world is experiencing its sixth mass extinction—threatening all life on the planet. In order to generate effective solutions that slow this loss of biodiversity, we need to take integrative approaches that balance the conservation and preservation of wildlife and their ecosystems with human wellbeing and in co-design with local communities. By wellbeing we refer to the health, livelihoods, and economic and development opportunities of peoples who are directly and indirectly connected to conservation action. Our approach to co-design with communities helps to preserve human cultural diversity while also addressing the needs of local peoples and helps to incorporate their ways of knowing and learning into the conception, design, and implementation of conservation projects.

This minor in Integrative Conservation prepares students to bridge disciplines and knowledge systems to address complex global conservation challenges and includes a required capstone project that students will complete in collaboration with an external conservation partner. These collaborative projects are coordinated and organized by the Institute for Integrative Conservation (IIC). Students in the minor will apply for and be matched to these opportunities by the IIC. This minor is designed for students who would like to explore career opportunities related to the conservation and maintenance of cultural- and bio-diversity. 21 credits required.

[Annotations below help to explain what courses are intending to be listed in the next year. Some are in review at EPC, others are in progress.]

Introduction to integrative conservation (3 credits)

- CONS 201 Introduction to Integrative Conservation (3 credits)

Biodiversity and ecosystems (5 credits)

Must take at least one course form each grouping, A and B.

A. Conservation science

- BIOL 318 Conservation Biology (3 credits; BIOL 204 prereq)
- BIOL 458 Conservation Biology Laboratory (1 credit; BIOL 318 prereq/coreq)
- BIOL 461 Marine Ecology and Conservation (3 credits; BIOL 204 and BIOL 302 prereqs)
- CONS 460/BIOL 460 Conservation Behavior (3 credits; CONS 201 or BIOL 204 prereq)
- CONS 462 Conservation Planning (3 credits; CONS 201 and one of BIOL 445 or CONS 210 or GIS 201) [New course, to be submitted to EPC in spring 2021]
- MSCI 401F Fundamentals of Marine Fisheries (3 credits; BIOL 204 and one of BIOL 330, MSCI 330, or GEOL 330 prereqs)
- Or other approved course

B. Geospatial science

- BIOL 445 GIS for Biologists (3 credits; BIOL 203 and BIOL 204 pre-reqs)
- CONS 210 Introduction to Conservation GIS (3 credits) [In review at EPC]
- CONS 420 Conservation GIS (3 credits; CONS 210 or GIS 201 prereq)

- CONS 440 Introduction to Remote Sensing for Conservation (3 credits) [Will become a different and unique course number in a future year]
- Or other approved course

Human wellbeing and nature (5 credits)

- BUAD 453 Sustainability Inspired Innovation and Design (3 credits; BUAD 311 or BUAD 340 prereq)
- ECON 322 Environmental and Natural Resource Economics (3 credits; ECON 101 prereq)
- CONS 440 One Health (3 credits) [In review at EPC for listing as new CONS number]
- GOVT 322 Global Environmental Governance (3 credits; ENSP 101 or GOVT 204 prereq)
- KINE 325 Environmental Issues in Public Health (3 credits; KINE 280 prereq)
- KINE 415 Public Health: Health Equity, Sustainability, and Well-Being in a Global Age (3 credits; course offered through DC program)
- SOCL 440 Political Ecology of Health & Disease (3 credits) [Will become a different and unique course number in a future year]
- Or other approved course

Communities, voices, and conservation (5 credits)

- ANTH 250 Introduction to Native Studies (3 credits)
- ANTH 315 Environmental Archaeology (3 credits)
- ANTH 338 Native Cultures of Latin America (3 credits)
- ANTH 351 Peoples and Culture of Polynesia (3 credits)
- CONS 440 Environmental Justice (3 credits; CONS 201 or ENSP 101 prereq) [Will become a different and unique course number in a future year]
- CONS 440 Environmental Ethics and Conservation (3 credits; CONS 201 or ENSP 101 prereq) [Will become a different and unique course number in a future year]
- HIST 226 The American West since 1890 (3 credits)
- HIST 238 American Indian History since 1763 (3 credits)
- SOCL 308 Environmental Sociology (3 credits)
- Or other approved course

Capstone Integrative Conservation project (3 credits)

- CONS 490 Conservation Practicum (1-3 credits)
- CONS 491 International Conservation Practicum (1-3 credits)
- CONS 492 Capstone Conservation Practicum (1-3 credits)
- CONS 496 Honors (3 credits) [New course, will be submitted to EPC in spring 2021 once this minor is approved]
- Or other approved research or independent study course on an applied conservation topic that is in collaboration with an external conservation partner organization.

FAQs

Have we talked to instructors, departments, and programs about the structure of this minor and the listing of particular courses?
The institute for Integrative Conservation (IIC) has received input in the design of this minor from a working group that consisted of 14 faculty members from across A&S, VIMS, Business, and Law. We have also received input and approval from the Committee on Honors and Interdisciplinary Studies, chaired by Dean Teresa Longo. For all courses listed, we have reached out to the instructor and/or Chair/Director to get approval to list the course. As we expect approximately 5-10 students to complete this minor per year, we will not be putting undue enrollment pressure on any one course outside of the CONS prefix.

Why 21 credits needed for this minor? This is the maximum in A&S.
We feel that the topic of integrative conservation is inherently multi- and transdisciplinary and for the work to be meaningful for students we need both a grounding in each of our distributional areas (biodiversity, livelihoods, communities) and ways in which those areas are connected and woven together (through the introductory CONS 201 course and the required capstone research experience). We feel that if we reduced any of those areas we would not be meeting our educational goals.

Why five credits in each of the distributional areas?
The five credits is a way to ensure that students take at least two different courses in each of the distributional areas: biodiversity, livelihoods, and communities. As most courses will be three credits, we recognize that this means that students will often attain six credits in each area and five of those will apply to this minor. We are OK about asking for this level of rigor and commitment from students and recognize that this makes the minor relatively more difficult to complete that some other minor programs in A&S. We are not aiming for this to be a large minor (and eventually major) program (see below).

How many students do you expect in this program?
We do not expect this to be a large minor program, with perhaps 5-10 students graduating per year. One of the biggest limitations on the number of students in the program will be our ability to support and mentor students in the capstone research experiences where they work in collaboration with both W&M mentors and external partner organization mentors. We (the IIC) will establish and maintain those external relationships and students will apply to and be matched to the opportunities we can offer. The relatively small size of the minor program also means that we will put minimal enrollment pressures on non-CONS courses that satisfy the degree requirements.

Why do you have "or other approved course" in every distributional category?
For every distributional area of the proposed minor we have added "or other approved course". This is important to us as the IIC will be hiring at least five new faculty (from new private funds) over the next 4-5 years and each of them will be offering new courses that contribute to this minor—hence the number of CONS prefix courses in each of the categories will grow over the

next 4-5 years. We do not yet know the name and number of those courses but will want them to count for students. Also, this structure allows departments and programs in A&S to offer one-off topics courses and seminars that might be eligible to count toward this minor. This is quite likely to occur, so we feel this approach gives the IIC, A&S partners, and students more flexibility to meet the requirements for this minor.

Are you planning on offering a major in Integrative Conservation at some point?
Yes. In the longer term, 2-3 years down the line and once more faculty are hired into the IIC, we intend to apply for a major in Integrative Conservation. This minor is an important first step down that path.

Why is there no quantitative requirement for this minor?
Within the IIC we debated adding a quantitative requirement for this minor, as quantitative approaches are often important for effective conservation action. However, we are at the edge of maximum possible credit requirements and it is likely that many students will complete a relevant quantitative course as part of their primary major. We intend to advise students to enroll in a relevant quantitative course while completing this minor.

How much overlap is there with the Environmental Science and Policy program?
We have designed this major to be complimentary to the ENSP program rather than to compete with it. Many members of the ENSP faculty have contributed to the design of this proposed minor in Integrative Conservation. As an example of our approach to harmonizing with ENSP, the first IIC faculty hire will offer courses in environmental justice and in environmental ethics, which will be cross-listed with ENSP and help that program deliver its major and minor. In recent years, ENSP has struggled to offer their ethics/justice requirement without hiring adjuncts and temporary instructors. The IIC will help to shore-up that element of the ENSP curriculum.

Catalog listing

Integrative Conservation Minor

The world is experiencing its sixth mass extinction—threatening all life on the planet. In order to generate effective solutions that slow this loss of biodiversity, we need to take integrative approaches that balance the conservation and preservation of wildlife and their ecosystems with human wellbeing and in co-design with local communities. By wellbeing we refer to the health, livelihoods, and economic and development opportunities of peoples who are directly and indirectly connected to conservation action. Our approach to co-design with communities helps to preserve human cultural diversity while also addressing the needs of local peoples and helps to incorporate their ways of knowing and learning into the conception, design, and implementation of conservation projects.

This minor in Integrative Conservation prepares students to bridge disciplines and knowledge systems to address complex global conservation challenges and includes a required capstone project that students will complete in collaboration with an external conservation partner. These collaborative projects are coordinated and organized by the Institute for Integrative Conservation (IIC). Students in the minor will apply for and be matched to these opportunities by the IIC. This minor is designed for students who would like to explore career opportunities related to the conservation and maintenance of cultural- and bio-diversity. 21 credits required.

Introduction to integrative conservation (3 credits)

- CONS 201 Introduction to Integrative Conservation

Biodiversity and ecosystems (5 credits)

Must take at least one course form each grouping, A and B.

<u>A. Conservation science</u>

- BIOL 318 Conservation Biology
- BIOL 458 Conservation Biology Laboratory
- BIOL 461 Marine Ecology and Conservation
- CONS 460/BIOL 460 Conservation Behavior
- CONS 462 Conservation Planning
- MSCI 401F Fundamentals of Marine Fisheries
- Or other approved course

<u>B. Geospatial science</u>

- BIOL 445 GIS for Biologists
- CONS 210 Introduction to Conservation GIS
- CONS 420 Conservation GIS
- CONS 440 Introduction to Remote Sensing for Conservation
- Or other approved course

Human wellbeing and nature (5 credits)

- BUAD 453 Sustainability Inspired Innovation and Design
- ECON 322 Environmental and Natural Resource Economics
- CONS 440 One Health
- GOVT 322 Global Environmental Governance
- KINE 325 Environmental Issues in Public Health
- KINE 415 Public Health: Health Equity, Sustainability, and Well-Being in a Global Age
- SOCL 440 Political Ecology of Health & Disease
- Or other approved course

Communities, voices, and conservation (5 credits)

- ANTH 250 Introduction to Native Studies
- ANTH 315 Environmental Archaeology
- ANTH 338 Native Cultures of Latin America
- ANTH 351 Peoples and Culture of Polynesia
- CONS 440 Environmental Justice
- CONS 440 Environmental Ethics and Conservation
- HIST 226 The American West since 1890
- HIST 238 American Indian History since 1763
- SOCL 308 Environmental Sociology
- Or other approved course

Capstone Integrative Conservation project (3 credits)

- CONS 490 Conservation Practicum
- CONS 491 International Conservation Practicum
- CONS 492 Capstone Conservation Practicum
- CONS 496 Honors
- Or other approved research or independent study course on an applied conservation topic that is in collaboration with an external conservation partner organization.