

NMHU Unit Strategic Planning:	AY22/PY24 Report
Unit name:	Natural Resources Management Department
VP / Dean / Chair / Director / Lead:	Jennifer Lindline, Chair
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Unit	Unit / Department Objective	Purpose of Objective	PLAN - Unit Goals / Objectives					Status (New or Ongoing)	Timeframe	Measurable outcomes	DO - Implement Plan			STUDY - Assessment			ACT - Improve
			SP Goal 1	SP Goal 2	SP Goal 3	SP Goal 4	SP Goal 5				Action(s)	Budget implication	Status (Met, Ongoing, Stop)	Outcome(s)	Challenge(s)	Improvement(s)	
NRM	1.1 Provide high quality instruction, maintain a current curriculum, and cover a range of topical proficiencies in natural resources management.	Support NMHU SG1: <i>Teach and mentor students to integrate a broad range of academic skills, a breadth and depth of curricular knowledge, and an interdisciplinary understanding.</i>	X					Ongoing	Fall 2023	1.1 (a) Hire a tenure-track Assistant/Associate Professor of Environmental Geology-GIS by fall 2023. (b) Hire a tenure-track Assistant/Associate Professor of Environmental Geology-Water Resources Science by fall 2023. (c) Employ one half time paleomagnetic-rock magnetic analyst/instructor hired by fall 2022.	1.1 Recruit, retain, and employ a team of faculty that reflects cultural, ethnic, and gender diversity, keeps the curriculum current and in concert with the program's educational goals and objectives, and provides effective academic advisement.	yes	Ongoing	In progress.	Difficult to offer all GEOL courses on a regular basis to ensure timely progress of all Environmental Geology B.S. majors, Geology minors, GIS minors, and GIS certificate program students with small faculty cohort (2 tenured professors and 2 part-time instructors). Unit faculty has campaigned for 3rd tenure-track position. Has support from Dean CAS for full-time Visiting Professorship. Job Description in People Admin; awaiting administrative approval.	NRM faculty is in agreement about program needs and working collaboratively for position replacement.	
	1.2 All NRM Department students will have the opportunity to use cutting-edge analytical instruments in the study of natural resources management.	Support NMHU SG1: <i>Teach and mentor students to integrate a broad range of academic skills, a breadth and depth of curricular knowledge, and an interdisciplinary understanding.</i>	X					Ongoing	Annually	1.2 Outcomes Assessment Reports; 100% of NRM students report the ability to collect and critically analyze scientific data, apply relevant standards, reduce data, and interpret results.	1.2 NRM faculty will integrate mineral, rock, soil, and/or water analysis in their laboratory sections so that students can learn, practice, and master natural resources management analytics (for example, powder x-ray diffractionometry, ion chromatography, AGICO MFK-1A KappaBridg analysis, and total organic carbon analysis).	yes	Ongoing	In progress.	Staff shortage hinders the unit's ability to offer regular training, usage, and mastery of analytical instruments among the NRM student cohort.	Environmental Geology majors do extremely well using and applying various tool and techniques (i.e. total station data; well log data; gravity and magnetic survey data; remote sensing data; calculus, linear algebra, redox reactions, and buffering equations) to complete homework and laboratory exercises. The Environmental Geology Program will continue to use multivariate datasets and instruments from geology and from outside disciplines throughout the curriculum.	
NRM	1.3 Offer a Water Resources Certificate (undergraduate and graduate).	Support NMHU SG1: <i>Teach and mentor students to integrate a broad range of academic skills, a breadth and depth of curricular knowledge, and an interdisciplinary understanding.</i>	X					New	Fall 2023	1.3 Offer Water Resources Science undergraduate and graduate certificate programs by Fall 2023.	1.3 Develop a Water Resources Certificate proposal for admission and review by the NMHU Academic Affairs Committee by November 2021. Advertise program and accept students by AY 2022.	yes	Ongoing	Movement on item stalled by lack of productivity by Visiting Professor in Water Resources Science and completely stopped after individual's abrupt resignation in Fall 2022.	Staff shortage hinders the unit's ability to offer intended slate of Water Resources Science courses.	Student interest remains high and faculty remain committed to furtherance of proposal and program.	
NRM	1.4 Offer a new and improved GIS Program (GIS Minor, Undergraduate GIS Certificate, Graduate GIS Certificate).	Support NMHU SG1: <i>Teach and mentor students to integrate a broad range of academic skills, a breadth and depth of curricular knowledge, and an interdisciplinary understanding.</i>	X					New	Fall 2022	1.4 (a) Implement a signed MOU with Western New Mexico University for collaborative GIS programming. Share instructional resources and cross enroll students to increase collaboration, cooperation, and interaction between the programs. (b) Update the NMHU GIS program to include an Introduction to Geospatial Analysis and GIS Fundamentals course (without Surveying). Develop a proposal for submission and review by the NMHU Academic Affairs Committee by January 2022. Make recommended revisions. Update catalog and web information. Advertise program.	1.4 (a) Develop an MOU with Western New Mexico University for collaborative GIS programming. Share instructional resources and cross enroll students to increase collaboration, cooperation, and interaction between the programs. (b) Update the NMHU GIS program to include an Introduction to Geospatial Analysis and GIS Fundamentals course (without Surveying). Develop a proposal for submission and review by the NMHU Academic Affairs Committee by January 2022. Make recommended revisions. Update catalog and web information. Advertise program.	no	Met	The NRM Department co-developed, in partnership with the Natural Sciences Department at Western New Mexico University, an MOU for shared GIS program offerings. The MOU was formalized between the respective universities in August 2021. The partnership has increased collaboration, cooperation, and interaction among the units, expanded our student peer cohort, and enriched the learning experience. The NRM Department submitted a proposal to the Academic Affairs Committee to add a course to the GIS program (Environmental Geology 8.5, GIS minor, GIS graduate/undergraduate certificate). The proposal was carried by the Academic Affairs Committee and subsequently recommended by the Faculty Senate. Undergraduate and Graduate Catalog changes were updated in Summer 2022 and new course is offered Fall 2022 (14 students).	Limited staff and overworked faculty has stalled efforts to update and advertise the improved GIS programming and WNMU partnership.	NRM Chair drafted MOU in Summer 2021 which was signed and implemented in Fall 2021. Cross enrollment of students in GEOL 4/5180 Remote Sensing launched Fall 2021. NRM Department faculty meets regularly with WNMU GIS Program faculty to discuss program courses and collaboration opportunities. Student interest in GIS subjects, enrollment in GIS courses, and engagement in GIS studies has grown.	
NRM	2.1 Graduate students with globalization skills/understanding of the interconnectedness of people and institutions of the world and stewardship of the earth through inclusive and sustainable development.	Support NMHU SG 2: <i>Inspire students to action through environments that foster scholarship and produce graduates equipped to address regional and global issues.</i>		X				Ongoing	Annually	2.1 Outcomes assessment reports; in the context of their coursework, 95% of NRM students will demonstrate awareness of global issues and understanding of diverse cultures, perceptions, and approaches to world-wide problems.	2.1 (a) Provide opportunities for students to work in international settings. (b) Keep course content abreast with major currents of global changes and issues. (c) Schedule guest speakers (in person and on line) from around the world to speak on projects, experiences, and opportunities.	no	Ongoing	Dr. Petronis took two NRM-Geology students to the Czech Republic in Summer 2022 for 4+ weeks of field work and laboratory engagement. Summer 2024 field campaign in Europe is planned to include and engage students. Dr. Lindline and Dr. Petronis regularly host international guest speakers in GEOL 6500 Graduate Seminar and other outreach activities.	Overworked faculty has complicated efforts to advertise the International Research Experience for Student program, connect students with mentors, and meet regularly with the student cohort pre- and post-field season.	Global competency is a unique and noteworthy outcome of NRM-Environmental Geology Program students.	
NRM	2.2 Provide field experiences, internship opportunities, and multi-institutional research for NRM-Geology students.	Support NMHU SG 2: <i>Inspire students to action through environments that foster scholarship and produce graduates equipped to address regional and global issues.</i>		X				Ongoing	Annually	2.2 (a) ≥ 95% NRM-Geology students will participate in field excursions. (b) and (c) ≥ 50% NRM-Geology students will be placed in NRM-related internships and research assistantships with NRM faculty and/or external partners	2.2 (a) Provide field experiences throughout the NRM-Geology curricula. (b) Provide internship opportunities from NRM faculty grants or external networks. (c) Arrange for students to work in external laboratories and field settings.	yes	Ongoing	NRM faculty mentor students in field and laboratory research. Dr. Petronis took two NRM-Geology students to the Czech Republic in Summer 2022 for 4+ weeks of field work and Dr. Lindline mentored two NRM-Geology students for 12+ weeks of water quality monitoring in regional catchments in Summer 2022. Both Lindline and Petronis had multiple students enrolled in GEOL 4990/6920 Independent Research for student-led research engagement. They also mentored multiple work-study students as Laboratory Aides throughout AY2021-2022, and AY2022-2023 during which students learned, practiced, and mastered analytical geology and data regression.	Staff shortage makes the provision of research experiences for every NRM student very difficult. Planning and arranging for student placement is time-consuming. Student hiring process in People Admin is cumbersome. Navigating Chrome River is difficult. Reimbursing students for field travel challenging.	Experiential learning in the field and laboratories and with other students and professionals is a highlight of the NRM Department. The NRM faculty regularly coordinates shared learning experiences with professors from other universities and student placement with external research laboratories.	
NRM	3.1 The NRM Department will expand and enhance collaborative community partnerships with Federal and local agencies to create seamless outreach, address local water concerns, and expand opportunities for students.	Support NMHU SG 3: <i>Engage with and serve our communities for mutually beneficial exchanges of knowledge, services, and resources.</i>			X			Ongoing	Annually	3.1 (a) Inventory of outreach events, sign sheets; ≥ 2000 students annually receive information about NRM programs, internships, and careers. (b) Establishment of Watershed Monitoring Program at NMHU; regular collection, analysis, and tabulation of water quality data. (c) Partnership Internship Agreements, weekly interns time/effort forms, internship satisfaction surveys, supervisor satisfaction surveys.	3.1 (a) Collaborate with partners (HPWA, UPWA, MNWRN) in K-12 outreach activities (Gallinas River Cleanup, Rio Mora STEM Day, Upper Pecos River Cleanup); promote NRM programs, support services, and student internships. (b) Engage students in water quality monitoring of local streams and watersheds. (c) Provide ≥ 2 internships per year in water resources science with local agencies.	no	Ongoing	In progress.	Staff shortage limits the number of partnerships that the NRM Department can meaningfully maintain.	Community partnership is a hallmark of the NRM Department. The NRM faculty is heavily involved with natural resources management agencies and organizations, such as the Upper Pecos Watershed Association, Hermit's Peak Watershed Alliance, New Mexico Environment Department, and the Traditional Communities Collaborative. Shared research projects, aligned goals, and formal partnerships provide opportunities for students to learn, intern, and in many cases achieve permanent employment with these groups.	
NRM	4.1 Develop culturally responsive teaching.	Support NMHU SG 4: <i>Advance excellence in diversity, equity, and inclusion policies and practices.</i>				X		New	Annually	4.1 NRM Department achieves a welcoming and inclusive university environment.	4.1 NRM faculty attends at least one seminar or workshop on diversity, inclusion, and equity (DIE) in higher education. Each member proposes one way to propel DIE as a responsibility and commitment within NRM programs of study. Chair dedicates time at NRM Department meetings on how to improve department professional practice.	no	Ongoing	In progress. Dr. Lindline co-developed "Water Warriors" curriculum, an on-line multimedia set of modules that fosters water resources protection and engages students in water resources study through human rights and Indigenous lenses.	Small department, over-extended faculty leaves limited time for intentional DIE engagement.	Continue to seek additional faculty development opportunities.	

NRM	4.2 Increase online offerings to reach an intellectually, socially, culturally, and geographically diverse student cohort.	Support NMHU SG 4: <i>Advance excellence in diversity, equity, and inclusion policies and practices.</i>			X		Ongoing	Annually	4.2 At least 4 NRM-Geology online courses are offered each academic year.	4.2 (a) Faculty will participate in Center for Teaching Excellence instructional technology training to develop on-line course modalities. (b) Faculty will write proposal(s) to develop on-line mode of delivery for new and/or existing NRM-Geology courses for submission to and consideration by the NMHU Administration (CBA 12.12).	no	Ongoing	In progress. Offered 6 online courses in AY2021-2022 and AY2022-2023, including: GEOL 1110 Physical Geology (3 sections); GEOL 1125 The Planets; GEOL 2330 Intro to Geospatial Analysis (2 sections); GEOL 4/5120 Geol Resources, Las & Env Policy; GEOL 4/5150 Remote Sensing; and GEOL 5940 GIS Capstone.	Over-extended faculty members have little time for professional development and proposal writing.	NRM faculty is working intentionally to respond to on-line professional learner schedules and support on-ground student needs.
NRM	5.1 Grow total number Environmental Geology B.S. students to NRM undergraduate majors to 30 (~15% annual growth) by fall 2025.	Support NMHU SG5: <i>Be a comprehensive educational provider for all students including traditional, non-traditional, online, distance, community, and lifelong learners.</i>			X	Ongoing	Annually	5.1 Achieve 30 Environmental Geology undergraduate majors by fall 2025 from fall 2020 baseline of 15.	5.1 (a) Develop new marketing materials and website content; disseminate to regional high schools and community colleges. (b) Participate in regional recruitment events (Luna CC, UNM-Taos, CNM, SFCC).	yes	Ongoing	In progress. Maintained moderately strong enrollment in Natural Resources Management disciplines, despite an 8% enrollment decline in undergraduate students at NMHU. Lower-division classes (1000- and 2000-level) were at or near enrollment capacity during AY2022-23, while upper-division classes (3000- and 4000-level) were strong at 10 or more students per class. NRM faculty shared information about NRM programs, internships, and careers to a 400 middle school, high school, and community college students in AY2022-23. Activities included: o Gave NMHU Homecoming Presentations – The W/CC Wildfire Complex’s Impact on Water Quality and Quantity in Regional Watersheds. o Participated in NMHU STEM Showdown at Storrie Lake (Fall 2022) reaching > 200 students from 12 schools across 5 northern New Mexico counties. o Gave talk to l’Université Clermont Auvergne class – Geoheritage for Resilience – on the 2022 Hermit’s Peak/Calif Canyon forest fires, watershed impacts, and community recovery (12/15/22). o Attended tour of fire impacted Gallinas Watershed and City of Las Vegas water infrastructure (01/27/23). o Co-led field trip (part of 8th annual Rio Chama Congreso) for regional water managers, Bureau of Reclamation specialists, and others to the fire-impacted Gallinas Watershed and City of Las Vegas water infrastructure. (02/24/23). o Served	Staff shortage limits the number of outreach/extension activities in which NRM Department faculty can participate. Its members do take full advantage of campus and community openings to schedule extension activities and promote program offerings. Note, too, that COVID-19 campus closures and travel restrictions in AY 2021-22 limited outreach activities and negatively impacted the number of incoming students interested in the NRM Department degree offerings.	Requesting 25% release time for new Visiting Professor of Environmental Geology position specifically for participating in outreach events and growing NRM student enrollment.	