

Overview

Students in RNG 491 prepare a Management Plan in which they apply rangeland ecology scientific principles and management planning processes. The steps in the planning process will include ecological, economic, and social components as students reflect of peer and faculty review in this iterative, adaptive management process. (Course SLO #1)

Learning activities including reading, lecture, discussion with peers and the Instructor guide students through a process which mimics what a rangeland management planner, in the public or private sectors, would do. Specific ecology concepts, management processes and communication tools are applied as students compose letters, management philosophies, tables, action plans, timelines and budgets related to solve a management challenge. (Course SLO #2)

The multi-step Management Plan is prepared in stages, with peer and Instructor feedback, and requires citation of scientific literature as well as management and communication practices (Course SLO#3).

Components & Timing of the Management Plan:

Week 4: Proposal (250 words)	15 pts.	
Week 5: Problem Identification, Objectives & Goals, Inventory & Needs (750 words)	40 pts.	
Week 6 & 7: Business letters- recruitment of & response to peer (2 @ 300 = 600 words)	2 @ 25 pts. = 50 pts.	
Week 8: Peer Evaluation of Classmate's Management Plan: Implementation (200 words)	15 pts.	
Week 9: Plan Implementation- Activities & Timeline, Materials, Personnel, Budget, Anticipated Outcomes (2,000 words)	75 pts.	
Week 10: Self-evaluation of Management Plan: Implementation (200 words)	15 pts.	
Final Week: Executive Summary (300 words)	40 pts.	
		250 pts.

Proposal 15 pts.

After selecting your topic, prepare a proposal which convinces your clients(s) that what you intend to do is essential to solve the rangeland management problem. Compose a summary statement of approximately 250 words in which you convince your client/audience that you have the skills to address the challenge and can enact an effective plan.

1) Place your business name, from your Professional Bio, in the title/header of your plan. 2 pts.

2) Write a description of the work to be conducted to address the challenge by defining the physical scope (acreage, watershed boundary, county or other political/ownership boundary), ecological issue and stakeholders to be involved or with an interest in outcome. 3 pts.

- 3) Identify your skills (drawing on your Professional Bio) and those of at least one other professional you will collaborate with such as a botanist, hydrologist, tribal elder, county commissioner, conservation planner (associated with SWCD, state or federal entity). 3 pts.
[Later in the term, you will recruit this person via the Recruiting Consulting Team Business Letter.]
- 4) Name the stakeholders and summarize the perspective and relationship of each to the management problem. 3 pts.
[Later in the term you will plan to how to involve them in the process.]
- 5) References. Include at least 3 sources, REM citation format. 4 pts.

Abbreviated example, related to the Mason Dam restoration project in Baker County, OR. Note that the scope and timeframe are clearly indicated. This is a small-scale project in both space and time.

ECOLOGICAL AND AGRICULTURAL CONSULTING

Claudia Ingham, PhD, of Ecological and Agricultural Consulting, proposes to manage community input and volunteer activities related to the Re-vegetation and Noxious Weed Management Plan (Baker County, 2011) at Mason Dam.

All parties have recognized the need to ensure the establishment and persistence of native and desired plant species. Because the need to monitor vegetation involves an area of fewer than 5 acres, The Ecological and Agricultural Consulting team, under Dr. Ingham's direction, will train volunteers in plant identification, data collection and methods to prevent introduction and spread of noxious or other undesirable plant species.

On-site inventories will be conducted in Spring (April or May) and Fall (September or October), from 2012-2016, to develop a complete inventory of plant species present and to determine trend in the plant community. These data will be compiled and submitted to the Baker County Weed Department in January of each of the five years of this contract. It is understood that the Baker County Weed Department will utilize the data to implement weed control measures and promote growth of desired plant species through efforts with other collaborators.

Public participation will be sought via outreach through the OSU Extension Service-Baker County Master Woodland Manager program (OSU, 2020), the Baker Valley SWCD (Baker Valley SWCD, 2020), the Confederated Tribes of the Umatilla (CTUIR, 2020) and other interested parties. Details of the training, timing and list of participants will be presented within 90 days of acceptance of the proposal presented herein.

References

Baker County, 2011. Re-vegetation and noxious weed management plan (Appendix E). https://www.bakercounty.org/mason_dam/docs/Licensing/Appendix%20E_pg746_856.pdf (Links to an external site.) (accessed 15 December 2019).

Baker Valley SWCD, 2020. Oregon conservation and education assistance network. <https://oceanconnect.org/districts.php?did=1> (Links to an external site.) (accessed 9 January 2020).

CTUIR, 2020. Natural resources, Confederated Tribes of the Umatilla Indian Reservation. <https://ctuir.org/tribal-services/department-natural-resources> (Links to an external site.) (accessed 16 November 2019).

OSU Extension Service, 2020. What we do. <https://extension.oregonstate.edu/county/baker/what-we-do> (Links to an external site.) (accessed 5 January 2020).

Problem Identification, Objectives & Goals, Inventory & Needs 40 pts.

Congratulations, your Proposal has been accepted by your clients! Now you must take the next steps to present details of what you will do, and resources needed. Include all the items in the table below. Be thorough and present this in a format which is understandable for all parties involved. It will be shared with those you recruit to work with you, any agencies, private landowners and others you identified in your Proposal.

Cite your sources per the *Rangeland Ecology and Management* journal format.

This is a 400-level Rangeland Sciences course and thus you are expected to be able to use ESDs (Ecological Site Descriptions), the USDA Web Soil Survey and USDA Plants Database, especially if your management problem is related to soil health and plant community composition. These resource data sets are linked in the Resources Module. Seek advice via Discussion Q&A, as needed.

This portion of your Management Plan will be about 750 words.

Component	What to include	Points
Problem Identification (200 words)	Summarize the ecological, economic and, or social aspects of the problem State the spatial scale (acres, watershed, etc.) & temporal scale (season of work, repetition, numbers of years) of work to be undertaken Include a map (no larger than one page) of the site with labels including scale	10
Objective & Goals (150 words)	State one over-all objective (i.e. reduction of woody plant abundance to stimulate under story growth) & list at least 3 related goals (i.e. 50% of trees will be felled, 25% of slash will be burned, before & after plant inventory). - what action will be undertaken & when - what will be measured & when - when progress will be evaluated - who will conduct evaluation - conditions under which continued work will be acceptable	10

<p>Inventory (200 words)</p>	<p>Describe relevant soil and landform information, using the Web Soil Survey. This might be topography, aspect, soil texture, or contaminants due to historic use. Include items with relevance to your project.</p> <p>Describe the expected vegetation (species or type and % cover) using the appropriate ESD. If it is likely to be altered, describe the inventory process you will use to determine actual site conditions, i.e. a vegetation inventory along transects or the use of an available inventory you have located as part of problem identification. Time of year for any plant inventory must be stated and justified based on the climate of the region and plant phenology.</p> <p>If your problem has more social & economic goals, include relevant & credible data.</p> <p>Summarize or list other resources present as related to your proposal-wildlife species & their numbers, cultural resources, infrastructure</p>	<p>10</p>
<p>Needs (200 words)</p>	<p>List things needed, with annotation</p> <ul style="list-style-type: none"> - Equipment, fencing, vehicles, permits - Skilled people (horse wranglers, anthropologists, licensed herbicide applicators, lawyers, soil scientists, etc.) 	<p>5</p>
<p>References (not included in total word count)</p>	<p>Cite the author(s) and year(s) in the body for items which require it, provide a References section per REM format</p>	<p>5</p>

Business Letters

2 @ 25 pts. each

Recruitment Letter

You are planning to implement a project but cannot fill all roles yourself. You have considered what additional personnel you need to join you in implementing your plan. AFTER reading the posts of the classmates in your DISC group, decide who among them you might recruit to join your team and compose a letter. Alternately, return to earlier discussions especially in Week 2, and select someone with skills to assist you.

Read the content related to Business Letters at this Purdue Online Writing Lab

https://owl.purdue.edu/owl/subject_specific_writing/professional_technical_writing/basic_business_letters/index.html (Links to an external site.)

Compose a letter in which you recruit an individual to your team. Use the Rubric to guide the format & content.

Component	Poor	Average	Excellent
Business name and address	-first or last name only -address incomplete or nonexistent town 0-1	-your name or business name -incomplete mailing address 2	-your name & business name -complete mailing address 3
Date	0-1 of day, month year 0	2 of 3, day, month, year 1	day, month & year 2
Recipient address	-first or last name only -address incomplete or nonexistent town 0-1	-your name or business name -incomplete mailing address 2	-your name & business name -complete mailing address 3
Salutation	Missing, too casual, i.e. hey 0	Greeting & full name 1	Greeting, full name & title 2
Body	1-2 paragraphs -0-2 items included: -why contact, skills they possess, -project objectives, spatial & temporal scale -request for reply 0-9	2 or >4 paragraphs -3 included: why contact, skills they possess, -project objectives, spatial & temporal scale -request for reply 10-12	3-4 paragraphs all included: why contact, skills they possess, -project objectives, spatial & temporal scale -request for reply 13-14
Closing & your name/signature	-missing or casual - name missing 0	-casual syntax -first or last name 0	-professional syntax -your first & last name 1
			Total = 25 points

Second Business Letter

compose a **second business letter** which does one of the following things. Recognize that *flexibility is allowed* because each of you has varied levels of skill and experiences AND your choices of management topic for the Term Project vary greatly.

1) Reply to an associate (classmate) and ask for further clarification in response to a letter written to you. State how your skills suit the work proposed and ask for clarification of details so you can decide if you really can accomplish the proposed work. Do you wish to engage further with the person/entity soliciting your services? Including a rate sheet or table in the letter is *optional*.

OR

2) Reflect on your own chosen project and identify the specific skills you need most to further your goals. (You included this in Management Plan- Problem Identification). Locate a service provider, via web search that can provide service in the geographic area of your management effort. Do you need an aquatic biologist, tree-feller and hauler, licensed applicator for weed control, vegetation survey team, NRCS field office expert, wildlife biologist or professional facilitator?

Is this person an independent contractor, part of a land trust or employee of a State, Federal or Tribal agency? Write a letter to recruit that party as you did in the previous business letter, be specific about the skills you require, entice the person you are recruiting.

Use same rubric as for first business letter.

Plan Implementation- Activities & Timeline, Materials, Personnel, Budget, Anticipated Outcomes (2,000 words) 75 pts.

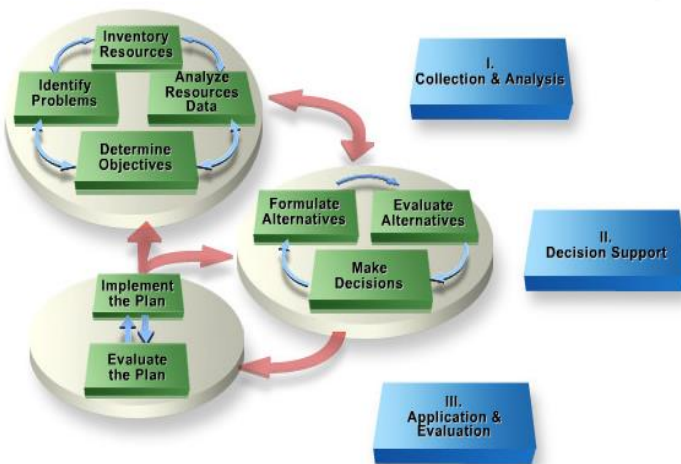
Verbiage for students (via Modules in Canvas or in person for on campus sections):

In previous steps of formulating a management plan you:

- 1- submitted a topic proposal
- 2- identified the problem including ecological, social & economic components, wrote an objective with related goals, made an inventory of current resources available, and listed some needs (equipment or personnel)
- 3- recruited professionals and replied to professional peers via business letters

Because this is a learning exercise, you will naturally need to return to earlier steps, consider the feedback from your Instructor and classmates, and then revise so you can work. Plan for implementation on spatial and temporal scales that are realistic and likely to have positive outcomes.

Again, consider the schema that NRCS uses. The arrows show a return to earlier stages as parties clarify goals related to the objective, analyze what resources (material, personnel & money) are available and then decide on implementation actions.



In the next steps of your Management Plan, you will choose 3 of the goals you identified earlier in the term and prepare for implementation of the project. You will also compose a budget of expected costs. Recognize that you are refining your understanding and it is correct to re-state things in more specific terms even if they were partly addressed in earlier parts of your Term Project.

- PROJECT NAME:** include geographic location & type of project 3 pts.
- OBJECTIVE:** Re-state the over-all objective in one sentence 1 pt.
- GOALS:** List three goals you feel are most achievable, include spatial & temporal scale 6 pts.

Example:

Project title: Mason Dam Re-vegetation Plan, Baker County, OR

Objective: Inventory plant species presence, and conduct biannual monitoring to inform re-vegetation and weed management efforts

Goals:

- 1) train volunteers to be highly-skilled at plant identification
- 2) record accurate lists of plant species present and their locations within a 5-acre area
- 3) prepare maps which are useable by crews which conduct chemical or mechanical weed treatment
- 4) prevent noxious weeds introduction to or dispersal from the work site

Complete an Activities Table for communicating with stakeholders, regulators and potential funders of your project. **(20 pts.)** Itemize what will be done to achieve goals, when, by whom and with what resources.

abbreviated example:

ACTIVITES	Timing: days, during which month(s), in what year(s)	Providers: equipment, materials, permits, services
Spread gravel to stabilize access	April or May of first year	Britt Corporation, Baker City, OR
On-site vegetation inventory	April or May, year 1	Ecological & Agricultural Consulting, team of volunteers
On-site monitoring	April/May & October , yrs 2-5	Ecological & Agricultural Consulting, team of volunteers
Reporting of species presence, location, need for noxious weed treatment	June & Nov, years 1-5	Ecological & Agricultural Consulting

BUDGET TABLE- use an Excel spreadsheet and submit along with the final management plan (20 pts.)

abbreviated example with categories

Budget Item	quantity	per unit cost	Total (= qty x unit cost)
Plant id field guides	10	\$15	\$150
Lunch for volunteers	10/day x 3 days= 30	\$10	\$300
¾ inch minus rock to harden paths	2 loads (13 cubic yards/load)	\$300	\$600
Water truck w/wash station prevent spread of seeds & other plant propagules onto or away from site	1/day x 3 days = 3	\$125 incl. insurance	\$375
Management Fee (volunteer training, coordination with dam operator & adjacent landowners, database management & report preparation)	1	\$3,500	\$3,500
Grand total =			\$ 4,925

Note: After the first year, the total per annum cost will be reduced by \$750 which represents the cost of consumables (field guides & ¾ in minus rock) which will not be purchased in years 2 through 5 of this monitoring effort.

Budget Narrative (150 words) 5 pts.

Explain the rationale for all items and quantities contained in the budget.

Example: The budget presented is for the vegetation inventory & monitoring work at the site. The need for chemical treatment or mechanical treatment of unwanted vegetation will be determined by the independent contractor but this work will be done by another party at the discretion of the hiring agent.

Costs will be reviewed by the independent contractor and hiring agent on an annual basis and an annual commitment letter with budget presented 60 days prior to the anticipated start of work.

Anticipated Outcomes (250 words) 10 pts.

After discussion with classmates (Ecampus- Canvas Discussion or on campus in class), decide what you think the greatest strength and weakness of your plan is. Imagine yourself being interviewed by a newspaper, blog writer or stakeholder who is influential in the community. Write an interview dialog or press release in which you professionally and accurately describe these identified strengths and weaknesses.

References 10 pts.

Include all scientific literature, technical bulletins and suppliers. Use the Rangeland Ecology and Management (REM) journal format. If web sources have no date of posting to the web, the accessed date is used as the publication date. N.D. for 'no date' is not used in scientific writing.

Examples below include peer-reviewed scientific paper, technical bulletin and a supplier:

Rangelands West, 2020. Rangeland monitoring: How to monitor.

<https://globalrangelands.org/topics/maintaining-and-improving-rangelands/rangeland-monitoring>
(accessed 14 February 2020).

Triple Redi-Mix Inc., 2020. Gravel and sand-delivered price list. Baker City, OR. 541-523-6648. (accessed 14 February 2020).

West, N., 2003. Theoretical underpinnings of rangeland monitoring. *Arid Land Res. and Manage.* 17, 333-346. <https://doi.org/10.1080/713936112>

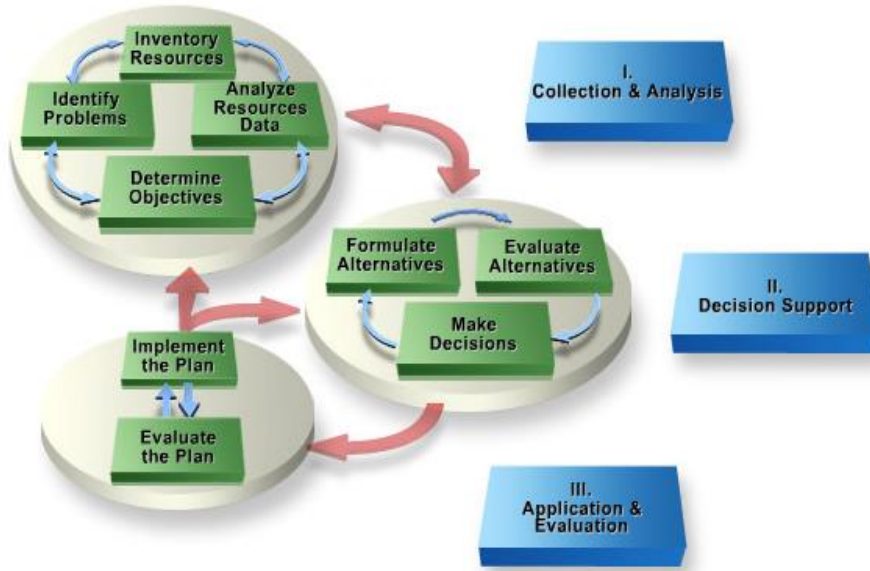
Peer Evaluation of Classmate's Management Plan: Implementation 15 pts.

Now that you have completed your own **Implementation** components, you will review the work of a classmate. Read very carefully and consider the various components presented and assign scores based on an objective assessment of how the student's work meets the criteria.

Note the individual items within a component and assign a score based on completeness, and accuracy where it can be checked, i.e. budget calculations. Complement work which is well done. If unclear or incomplete, your comments should be posed as questions or constructive critique. Consider that your classmate might be one of your clients and any communication skills, developed through reading & discussion this term, and should be applied here as well.

Component	criteria	Points possible
Title	-Site name & town (or region) and state included	/2
Objective & Goals	-One over-all goal for the site -Three specific, measurable goals including spatial & temporal scales	/4
Activities table	-Actions to be taken, timing, providers (eqpt. or services)	/4
Budget table	-Excel spreadsheet with clear list of qty, per unit cost & total cost for equipment, materials & services, accurate grand total -spreadsheet attached as separate document	/4
Budget narrative	-Clear purpose for each item in budget, aligned w/obj. & goals	/1
general comments		/15

Consider how Peer Review fits with the NRCS schema:



Self-Evaluation of One’s Own Management Plan

as for peer evaluation above

Executive Summary

40 pts.

Consider all that you have learned and actions you have planned to take this term and return to this overview: https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs141p2_028845.pdf

Although an Executive Summary may be the first part of a management plan, it is written last because that is when you are wisest (knowledgeable & able to communicate well). In 300 words or fewer, inform your stakeholders of the following:

Component	Poor (pts.)	Average (pts)	Excellent (pts._
Introductory paragraph	-vague or incomplete -spatial or temporal scale missing -location vague	>1 paragraph -problem described generally -spatial & temporal scale -location	-1 paragraph overview -problem described explicitly -ecological & economic or social component -spatial & temporal scale exact 9-10
Actions to be taken & parties involved	-unclear -unrealistic or confused outcome	-clear action	-clear & necessary

		-parties named (professional & stakeholder) -expected outcome	- parties named & role described (professional & stakeholder) -communication tools & timing -expected outcome
	0-6	7-8	9-10
Budget -in Excel spreadsheet	inaccurate calculation, material or service missing 0-6	-accurate total cost -largest cost items explained 7-8	-total cost accurate -descriptive summary -- all materials & services 9-10
Evaluation protocol	time or parties missing 0-3	-time (year & month) -most parties 4	-time (year & month) -parties -method 5
Conventions: grammar, syntax, paragraph structure, etc.	≥3 types of errors ≤ 250 or ≥ 350 words -inappropriate/slang 0-3	1-2 types of errors ≤ 275 or ≥ 325 words -casual tone 4	no or 1 type of error - 275-325 words -professional tone 5