Michelle dela Cruz
Project Management Plan: Southwestern Pond Turtle Conservation

Instructions: You have several options for your final project management plan. You may use your final project for either Restoration Ecology (Dr. Kimball) or Restoration Techniques (Dr. Lulow), you may use the case study from class, or you may use your Capstone Project. Use your general project to complete the first three sections. **Choose only one of your objectives to complete the remaining sections.** Add rows as needed.

1. Project Overview/Purpose
[Overview/Purpose section should include project goal(s), and S.M.A.R.T Objective(s)]

Project SMART Objectives Worksheet

Project Name	Southwestern Pond Turtle Conservation		
Authors	Michelle Cruz, Jessica Rath, Matthew Walsh, Vincent Woolsey	**Date**	4/13/21

PROJECT GOAL	(1) Identify primary conservation areas, (2) assess monitoring and management methods, and (3) increase collaboration across multiple stakeholders.

SPECIFIC: Who? What? Why? Which?	Southwestern pond turtle, primary conservation areas, Dr. X
MEASURABLE: Metrics and milestones? How much? What percentage?	Establish criteria including veg type, ground cover, elevation, slope, precipitation, temperature, habitat threats, aquatic habitat characteristics
ACHIEVABLE: Do you have the skills and tools to accomplish this objective?	Yes; access to databases

RELEVANT: Does it fit with overall organizational objectives?	Yes
TIME-BOUND: Intermediate and final deadline?	April 2021 - September 2021

Objective 1	Establish habitat criteria for the southwestern pond turtle within the initial 6 months using literature review and collaborating with Dr. X (she/her).

SPECIFIC: Who? What? Why? Which?	Agencies and land managers currently managing pond turtles; USFWS
MEASURABLE: Metrics and milestones? How much? What percentage?	6 sites; Presence of turtle populations; list of critical habitats
ACHIEVABLE: Do you have the skills and tools to accomplish this objective?	access to data, ArcGIS, cooperation of managing agency, guidelines
RELEVANT: Does it fit with overall organizational objectives?	yes
TIME-BOUND: Intermediate and final deadline?	September 2021 - December 2021

Objective 2	Using established criteria to delineate 6 Pond Turtle Conservation areas in Orange County between September and December 2021.

SPECIFIC: Who? What? Why? Which?	Dr. X, stakeholders
MEASURABLE: Metrics and milestones? How much? What percentage?	List of conservations areas ranked and prioritized for management and restoration
ACHIEVABLE: Do you have the skills and tools to accomplish this objective?	Yes; based on outcome of objective 2
RELEVANT: Does it fit with overall organizational objectives?	Completes our first goal
TIME-BOUND: Intermediate and final deadline?	January 2022

Objective 3	Rank populations in terms of need for conservation and select 2 priority areas for assessment by January 2022. (Which areas need the most help and which serve as important source populations?)

SPECIFIC: Who? What? Why? Which?	Dr. X, Data collection protocol
MEASURABLE: Metrics and milestones? How much? What percentage?	From at least five scientific sources specific to the species and two specialists specifically familiar with population in OC.
ACHIEVABLE: Do you have the skills and tools to accomplish this objective?	Access to databases

RELEVANT: Does it fit with overall organizational objectives?	Yes
TIME-BOUND: Intermediate and final deadline?	April 2021 - September 2021; concurrent with objective 1

Objective 4	Literature review of methods and collaboration with Dr. X (she/her) to develop a data collection protocol (for initial surveys, experiments, future monitoring)

SPECIFIC: Who? What? Why? Which?	Dr. X, land managers
MEASURABLE: Metrics and milestones? How much? What percentage?	Consensus among stakeholders on adequate monitoring methods for priority sites
ACHIEVABLE: Do you have the skills and tools to accomplish this objective?	Some negotiations of stakeholder priorities
RELEVANT: Does it fit with overall organizational objectives?	yes
TIME-BOUND: Intermediate and final deadline?	September 2021 - December 2021

Objective 5	Create a standardized list of monitoring methods based on literature review (objective 4) and input of stakeholders by December 2021

SPECIFIC: Who? What? Why? Which?	Dr. X,
MEASURABLE: Metrics and milestones? How much? What percentage?	Recommendations specific to the two priority sites for water flow and invasive control
ACHIEVABLE: Do you have the skills and tools to accomplish this objective?	Yes, results from outcome of objective 4.
RELEVANT: Does it fit with overall organizational objectives?	yes
TIME-BOUND: Intermediate and final deadline?	January 2022

Objective 6	Make recommendations for the 2 primary conservation area management by January 2022.

SPECIFIC: Who? What? Why? Which?	Major stakeholders, public and private sector
MEASURABLE: Metrics and milestones? How much? What percentage?	At least 5 different organizations/agencies
ACHIEVABLE: Do you have the skills and tools to accomplish this objective?	yes

RELEVANT: Does it fit with overall organizational objectives?	Yes, Goal 3
TIME-BOUND: Intermediate and final deadline?	3 months

Objective 7	Identify at least 5 major stakeholders for southwestern pond turtle conservation by June 2021.

SPECIFIC: Who? What? Why? Which?	Dr. X, Orange County Water District, Irvine Ranch Water District (etc.),
MEASURABLE: Metrics and milestones? How much? What percentage?	Host a meeting every 3 months on Zoom
ACHIEVABLE: Do you have the skills and tools to accomplish this objective?	Yes
RELEVANT: Does it fit with overall organizational objectives?	Yes, Goal 3
TIME-BOUND: Intermediate and final deadline?	Starting in September 2021

Objective 8	Host stakeholder meetings on Zoom every 3 months (quarterly) starting in September 2021.

2. Project Scope

[Project Scope section should include descriptions of the deliverables, a list of exclusions, and a list of the project milestones.
- o Deliverables – The unique and verifiable product, result, or capacity to perform a service that you are producing to complete the project.
- o Exclusions – Products, results, or projects excluded from this project
- o Milestones – Provide high-level estimated schedule information.]

Deliverables	Description
<Name of Deliverable>	<Description of the Deliverable>
Habitat Guidelines	Criteria for determining suitable Southwestern Pond Turtle habitat within Orange County
List of Priority Habitats	Ranking habitats and identify which need the most help and which are the most important
Literature Review	A summary of findings from scientific literature sources
Protocol assessment	Assessments of and recommendations for monitoring and management procedures

Exclusions
<Name of Exclusion>
Not capturing turtles (no capture and release, tagging)
No assessing habitats outside Orange County boundary; only focus on populations within the county
Exclude populations with no protections or for which data does not exist.
Not restoring habitat or creating connectivity between life cycle habitats that are in proximity but might need restoration

Project Milestones and/or Phases	Estimated Completion Date
<Start of Project>	
Conduct Habitat Assessment	June 2022
Identify Six Potential Sites	December 2021

Host Stakeholder Initial Meetings	June 2021
Establish Survey Methods	April 2022
Conduct Site Surveys	January 2022
Choose Two Priority Sites	July 2022
Deliver Monitoring Protocols	September 2022
<End of Project>	

3. Stakeholders & Stakeholder Analysis

[List the name and title, organization, role, and contact information. Include information from your Stakeholder analysis, including level of impact on the project (high, medium, low), level of attitude toward the project (high, medium, low), stakeholder strategy (Engage & Employ (HH), Woo & Win (HL), Inform & Coach (LH), Monitor & Out Vote (LL), and contact information of each of the stakeholders. Add lines if necessary.]

Stakeholder Name	Organization	Project Role	Contact Information
Dr. X	UCI	Sponsor/Director of San Joaquin Marsh	DrX@uci.edu
Ranger J	CA DFW	Expert	Email
Susan Sheakley	Sea and Sage Audubon	Non-profit volunteer org. for community members	seaandsage@sbcglobal.net 949-552-5974
Richard Zembal, Natural Resources Director Bonnie Johnson, Principal Environmental Specialist	OC Water District	Prado SWPT habitat manager	https://www.ocwd.com/contact-us/student-contact-form/ 714-378-3200 Main Switchboard
Karen McLaughlin, Board + Env. Scientist	Irvine Ranch Water District (member agency of OC Water District)	Advisor on watershed and interactions with IRWD	boardmail@irwd.com

Stakeholder Analysis

Stakeholder Name	Project Role	Stake in Project (H, M, L)	Impact on Project (H, M, L)	Strategy

Dr. X	Sponsor	H	H	Engage & Employ: Check in with progress at milestones
Ranger J	Expert	M	H	Engage on current SWPT management procedures, what works for them, what doesn't
Susan Sheakley	Volunteers and Users	L	L	Inform & Coach: Listen and compile perspectives. Educate when appropriate and incorporate useful feedback
Richard Zembal	Prado SWPT habitat manager	H	M	Engage, woo, and win. Gather thoughts on their criteria for relocating SWPTs
Karen McLaughlin	Irvine Water Board Liaison	M	L	Inform & Coach. Engage early. Learn history of area and concerns regarding water in San Joaquin watershed. See if upcoming water infrastructure projects that would interfere with habitat site choice.
Bonnie Johnson	Principal environmental specialist	M	M	Inform & Coach. Inform early on, educate, ask for best survey methods

Instructions: Choose one of the objectives you have listed above to complete the remaining sections.

4. Work Breakdown Structure & Gantt Chart

[Provide a detailed breakdown of the work. At a minimum, include project tasks arranged in a logical order, the time it will take to complete the tasks, and the person responsible for task completion. You may submit a spreadsheet that includes the WBS and the Project Schedule.]

PROJECT TITLE	Southwestern Pond Turtle Conservation		COMPANY NAME	Environmental Solutions
PROJECT MANAGER(S)	Michelle dela Cruz, Jessica Rath, Matthew Walsh, Vincent Woolsey		DATE	4/30/2021

WBS NUMBER	TASK TITLE	TASK OWNER	START DATE	DUE DATE	DURATION	PCT OF TASK COMPLETE
1	**Goal 1: Identify primary conservation areas**		4/1/2021	1/1/2022	9 months	
1.1	**Objective 1: Establish habitat criteria**	–	4/1/2021	9/30/2021	6 months	**0%**
1.1.1	ID reliable sources (UCI published + unpublished)	Michelle, Vince, Matthew, Jessica	4/1/2021	5/1/2021	1 month	**0%**

1.1.2	Lit source review	–	4/14/2021	6/14/2021	3 months	**0%**
1.1.2.1	Habitat + ecology	Michelle	4/14/2021	6/14/2021	3 months	**0%**
1.1.2.2	Land use history + management	Vince	4/14/2021	6/14/2021	3 months	**0%**
1.1.2.3	Life cycle + species	Matthew	4/14/2021	6/14/2021	3 months	**0%**
1.1.3	Initial Zoom meetings with Dr. X	Jessica	4/14/2021	5/1/2021	2 weeks	**0%**
1.1.4	ID gaps in knowledge	Michelle	6/15/2021	6/30/2021	2 weeks	**0%**
1.1.5	ID + Contact SWPT experts/managers	Jessica	5/1/2021	5/15/2021	2 weeks	**0%**
1.1.6	Schedule stakeholder meeting on Zoom - Habitat History	Jessica	5/15/2021	5/30/2021	2 weeks	**0%**
1.1.7	Assess permit requirements	Matthew	5/1/2021	6/1/2021	1 month	**0%**
1.1.8	Contact experts from lit review	Michelle	7/1/2021	7/15/2021	1 week	**0%**
1.1.9	Schedule + conduct lit review experts interviews	Jessica	8/1/2021	9/30/2021	2 months	**0%**
1.1.10	Site Visits with Dr. X at San Joaquin Marsh	Jessica	8/1/2021	9/30/2021	2 months	**0%**
1.2	**Objective 2: Delineate 6 Pond Turtle Conservation areas**	–	9/1/2021	1/2/2022	4 months	**0%**
1.2.1	ID established conservation areas + successful populations	Vince	9/1/2021	9/14/2021	2 weeks	**0%**
1.2.2	Map potential areas	Matthew	9/14/2021	10/14/2021	4 weeks	**0%**
1.2.3	ID criteria of degraded areas	Vince	10/14/2021	10/31/2021	2 weeks	**0%**
1.2.4	ID six potential sites	Vince	11/1/2021	12/1/2021	4 weeks	**0%**
1.2.5	Perform site visits	Matthew	12/1/2021	1/1/2022	4 weeks	**0%**
2	**Goal 2: Assess monitoring and management methods**					
2.1						**0%**
2.2						**0%**
3	**Goal 3: Increase collaboration across multiple stakeholders**					
3.1						**0%**
3.2						**0%**

Gantt chart — Project schedule (Apr 2021 – Dec 2021)

WBS NUMBER	TASK TITLE	Apr W1	Apr W2	Apr W3	Apr W4	May W1	May W2	May W3	May W4	Jun W1	Jun W2	Jun W3	Jun W4	Jul W1	Jul W2	Jul W3	Jul W4	Aug W1	Aug W2	Aug W3	Aug W4	Sept W1	Sept W2	Sept W3	Sept W4	Oct W1	Oct W2	Oct W3	Oct W4	Nov W1	Nov W2	Nov W3	Nov W4	Dec W1	Dec W2	Dec W3	Dec W4
1	**Goal 1: Identify primary conservation areas**																																				
1.1	**Objective 1: Establish habitat criteria**	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓												
1.1.1	ID reliable sources (UCI published + unpublished)	P	P	P	P	L	L	L	L									O	O	O	O																
1.1.2	Lit source review			▓		▓	▓	▓	▓	▓	▓																										
1.1.2.1	Habitat + ecology			G	G	G	G	G	G	G	G																										
1.1.2.2	Land use history + management				U	U	U	U	U	U	U																										
1.1.2.3	Life cycle + species				R	R	R	R	R	R	R																										
1.1.3	Initial Zoom meetings with Dr. X		Y	Y		L	L	L	L																												
1.1.4	ID gaps in knowledge											G	G																								
1.1.5	ID + Contact SWPT experts/managers					Y	Y	L	L																												
1.1.6	Schedule stakeholder meeting on Zoom - Habitat History					L	L	Y	Y																												
1.1.7	Assess permit requirements					R	R	R	R																												

Legend: ▓ = dark gray bar; P = purple; L = light blue; O = orange; G = green; U = blue; R = red; Y = yellow.

A faint vertical light-orange highlight band runs through Aug 2021 (W1–W4) across the task rows, and a faint light-blue highlight band runs through May 2021 (W1–W4).

1.1.8	Contact experts from lit review																																							
1.1.9	Schedule + conduct lit review experts interviews																																							
1.1.10	Site Visits with Dr. X at San Joaquin Marsh																																							
1.2	**Objective 2: Delineate 6 Pond Turtle Conservation areas**																																							
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1.2.4	ID six potential sites																																							
1.2.5	Perform site visits																																							
2	**Goal 2: Assess monitoring and management methods**																																							
3	**Goal 3: Increase collaboration across multiple stakeholders**																																							

5. Human Resources Requirements and Linear Responsibility Chart (LRC)

[List the people from within the organization who will be assigned to the project and note any training needs. Complete an LRC.]

TASKS	Michelle de la Cruz	Jessica Rath	Matthew Walsh	Vincent Woolsey	Sarah Kimball Capstone Advisor	Science Advisor	Priscilla Field Technician, (ADD columns for Community Advisor, CEB Interns)
			RESOURCES (PEOPLE)				
ID reliable sources	🔺🟧	🟧	🔵	🟧		⭐	
Lit source review	🔺🔵	🟧	🔺🟧	🟧	⭐		
Initial Zoom meetings with Dr. X	🟧	🔺🟧	🟧	🟧	⭐		
ID gaps in knowledge	🟧	🟧	🔺🟧	🟧		🔵⭐	
Schedule stakeholder meetings on zoom - Habitat History	🔺	🟧					
ID + Contact SWPT experts/managers		🔺🟧⭐					
Assess permit requirements			🟧	🔺	⭐		🔵
Contact experts from lit review	🟧	🔺⭐					

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Schedule + conduct lit review experts interviews	🟧	🔺 🟧			⭐		
Site Visits with Dr. X at San Joaquin Marsh			🟧	🔺 🟧	⭐		

TASKS	RESOURCES (PEOPLE)						
	Michelle de la Cruz	Jessica Rath	Matthew Walsh	Vincent Woolsey	Sarah Kimball Capstone Advisor	Science Advisor	Priscilla Field Technician, (ADD columns for Community Advisor, CEB Interns)
ID reliable sources	🟧	🔺	⭐	🟧		🔵	
Lit source review	🟧	🔺	🟧	⭐		🔵	
Initial Zoom meetings with Dr. X	🔺	🟧	⭐	🟧	🔵		
ID gaps in knowledge	🟧	⭐	🟧	🔺	🔵		
Schedule stakeholder meetings on zoom - Habitat Hisotry	⭐	🟧	🔺	🟧			🔵

Task							
ID + Contact SWPT experts/managers	🟧 Do Work	⭐ Sign Off	🟧 Do Work	🔺 Supervisor		🔵 Expert	
Assess permit requirements	⭐ Sign Off	🟧 Do Work	🔺 Supervisor	🟧 Do Work			🔵 Expert
Contact experts from lit review	🔺 Supervisor	🟧 Do Work	⭐ Sign Off	🟧 Do Work		🔵 Expert	
Schedule + conduct lit review experts interviews	🟧 Do Work	⭐ Sign Off	🟧 Do Work	🔺 Supervisor			🔵 Expert
Site Visits with Dr. X at San Joaquin Marsh	🔺 Supervisor	🟧 Do Work	🟧 Do Work	⭐ Sign Off	🔵 Expert		

Legend

Supervisor	🔺	Expert	🔵
Do Work	🟧	Sign Off	⭐

6. Procurements

[List the known resources (e.g., field equipment, software, consultations, permits, training) that must be procured.]

Description	Source	Estimated Cost
State Park Site Permits – application fees	CA Dept. of Fish and Wildlife	$150
ArcGIS software	UC Irvine – Office of Information Technology	Free?
Safety Training	UC Irvine – Environmental Health and Safety	Free?
Zoom subscription upgrade	Zoom website	$150

7. Cost Management Plan: Estimated Budget (You may submit a separate with your budget.)

Project Budget			
Ecosystem Restoration			
A. PERSONNEL SERVICES *(Ensure that all personnel are described in the project)*			
Project Role	Hours	Rate	Amount
Masters Students	160 x 4 students = 620	$20/hour	$12,400
Dr. X expert consultation	80	$40/hour	$3,200
Subtotal Personnel Services			$ 15,600 -
Staff Benefits		43.00%	$1,376
SUBTOTAL A: PERSONNEL SERVICES			$ 16,976 -
B. OPERATING EXPENSES: GENERAL			
Research articles	Up to 3	$40/paper	$120
CA DFW permits	3 applications	$150/application	$450
Zoom subscription	3 years	$150/year	$450
SUBTOTAL B: OPERATING EXPENSES: GENERAL			$ 1,020 -

C. INDIRECT CHARGES (Maximum Indirect Rate 20%)			
Costs incurred for common or joint objectives and therefore not identified readily and specifically with a particular project or any other institutional activity.		Indirect Rate (Max 20%)	
Indirect Charges = (Subtotal A + Subtotal B) * (Indirect Rate)		19%	$3,500
	SUBTOTAL C: INDIRECT CHARGES		$3,500
D. OPERATING EXPENSES: SUBCONTRACTORS			
-- none --			
	SUBTOTAL D: OPERATING EXPENSES: SUBCONTRACTORS		$ 0 -
E. OPERATING EXPENSES: EQUIPMENT			
-- none --			$ -
	SUBTOTAL E: OPERATING EXPENSES: EQUIPMENT		$ 0 -
	F. GRAND TOTAL (A + B + C + D + E)		$ 21,496 -

- Cost Control Plan

[This section defines the cost control activities which will be used throughout the project to monitor cost control. The documentation will address how the following activities will be performed:

- o Monitoring cost performance (actual vs budget) to detect variances.
- o Identifying and documenting changes and adjusting the budget as required.
- o Implementing only approved changes and preventing unauthorized changes to scope and cost baseline.]

8. Risk Assessment

[Analyze risks and provide a table that includes risk probability, risk impact, risk level, and risk strategy.]

Risk	Risk Probability	Risk Impact	Risk Level	Risk Strategy/Tactic
Data loss	Low	Medium	3	Reduce likelihood: regularly back up on cloud (daily) and external hard drive (weekly)
Onsite injury	Low	Low	2	Reduce likelihood: safety training for personnel Reduce impact: require first aid training for personnel Contingency plan: worker compensation agreement?
No access to site	Low	Low	2	Reduce likelihood: communicate with site managers early
Denied/permit delays	Medium	Medium	4	Reduce likelihood: gather permit requirement information early, apply early
Sick leave/mental health days	High	Medium	5	Reduce impact: buffer schedule with expected sick/mental leave Reduce likelihood: Regularly check in with personnel about stress/work load, assign tasks in teams for back up
Stakeholder conflict	High	Medium	5	Reduce impact: research history of conflict in the area, gain understanding of internal stakeholder conflicts Reduce likelihood: engage stakeholder meetings, problems early on
Critical gap in knowledge	Low	Medium	3	Reduce likelihood: have multiple people/resources work on literature review Accept: proceed with project with knowledge gap in mind

[*Risk Strategies* could include specific actions that fall in one or more of these general strategies.

1. Remove the risk
2. Reduce the likelihood of the risk
3. Reduce the impact of the risk
4. Have a contingency plan
5. Transfer the risk to someone else
6. Accept the risk

9. Communications Plan

[Include the communications matrix.]

Vehicle	Target	Description/ Purpose	Frequency	Owner	Distribution Vehicle	Internal/ External	Comments
<status report>	<all stakeholders>	<one page communication of project progress and deliverable status>	<monthly>	<NAME>	<email>	<internal/ external>	
Project Status Report	Dr. X	Update her on status of project	Bi-weekly	Michelle	Memo	Internal	Include responses to comments and questions
Site Visit	Dr. X	Observe pond turtle monitoring procedures at San Joaquin Marsh	As needed during active season	Matthew	Scheduled, email	Internal	Annotate procedure, discuss successes and challenges
News Letter	Public	Inform public about status of the project and offer educational outlets	Monthly	Jessica, Michelle, Matthew, Vince	Monthly email	External	Allows public to offer comments/suggestions and gives transparency to project

Meeting*	Description/ Purpose*	Frequency	Owner	Internal/External	Participants
<meeting type>	<risk management status>	<every two weeks>	<NAME>	<internal>	<project team>
Stakeholder outreach	Establish current management strategies and challenges for SWPT	Every 3 months	Jessica	External	Stakeholders: SWPT experts, site managers, Dr. X (UCI Nature, San Joaquin Marsh), Ranger J (CADFW), Richard Zembal (OCWD), Susan Sheakley (Sea and Sage), Irvine Ranch Water Dist
Team Planning	Review collected information to assess progress in project tasks	Every 3 months	Vince	Internal	Core Project Team

Expert interview	Interview SWPT experts to identify key information on the species	Scheduled when available	Michelle	External	Michelle and experts, sometimes Jessica

*Information exchange (status meeting); Brainstorming; Option Evaluation; Design; Decision making

10. Quality Control Plan
[Include information on how quality will be managed.]

- Research based on Peer-Reviewed literature
- Document comments, questions, concerns from all stakeholders
- Regular correspondence with Dr. X on new information
- Confirm understandings with expert consultants

11. Completion Criteria
[Include what must occur before the project is considered complete.]

- Literature Review Completed
- 8 stakeholder meetings
- 6 site visits
- 2 recommendations for SWPT habitat sites in Orange County
- Final Draft of Habitat Assessment and Monitoring Protocol Completed

12. Assumptions & Constraints
[List project assumptions—factors in the planning process that are considered to be true without proof or demonstration, and list the project constraints—limiting factors that affect the execution of the project.]

Assumptions
-
Constraints
- Limited SWPT populations

13. Project Manager
Michelle dela Cruz, mldelac1@uci.edu

14. <u>Project Authorization</u>

By initialing each page and signing below, I _____, the Project Sponsor, approve the project described herein and authorize it to begin.

By: _____   _____   _____By:___

   (Signature of Project Sponsor)   (Name of Organization)   (Date)

_____

   (Printed Name of Project Sponsor)