

RESTORATION ECOLOGY MIDTERM – Fall 2007

General instructions - Please read questions carefully, and put your name on each page. Please note that if you answer all questions only the first questions (up to the number required) will be graded.

Definitions – Fill in the blanks in the sentences below with the appropriate term. Answer 9 of the following 10 questions (2 points each)

A _____ is a set of geographically isolated subpopulations that are connected by gene flow and colonization.

For seeds that have thick seeds coats to survive passing through the digestive system of animals, it may be necessary to _____ the seeds to increase their germination rate.

_____ are fungi that form mutualistic associations with plants. They help the plants with nutrient and water uptake.

A _____ is when animals are transported from a capture site or captive breeding site and introduced to their new habitat without any prior conditioning.

_____ are continually inundated wetlands that are acidic and have soil with extremely high organic matter.

Because of the lack of oxygen in wetlands, heavy metals, such as iron, are in their _____ form.

_____ is covering areas with a clear plastic tarp to create high temperatures to kill the seed bank prior to planting.

The best to way to predict whether a species will be invasive in a certain location is _____.

_____ is the return a damage ecosystem to a productive and socially acceptable condition short of restoration.

_____ is the natural ability of an ecosystem to recover from disturbance.

Short answer questions - Answer 5 of the following 6 questions (6 points each)

List three habitat/landscape characteristics that need to be restored to provide suitable conditions for a specific faunal group of your choice. Faunal group:_____.

List three methods used for cleaning up hazardous wastes in terrestrial systems with a brief description of each of the terms.

List three beneficial effects of increasing organic matter in soil.

List three potential negative effects of fertilizing plants as part of restoration projects.

List the three criteria used to delineate wetlands.

List three invasive species in Hawaii that have had strong negative impacts on native species.

	Possible points	Points received
Definitions	18	_____
Short answer	30	_____
Short essays	28	_____
Long essays	24	_____
TOTAL	100	_____

Short essays - Answer 2 of the following 3 questions (14 points each) on lined paper. Please put your name on each sheet and staple the sheets to this portion of the exam.

1. As has been discussed in both the class and readings, there are pros and cons to using exotic plant species in restoration efforts. Discuss two arguments for using exotic plants species in some restoration projects, and two concerns about using exotic plant species for restoration. Finally, discuss two precautions that could be taken to minimize the concerns discussed.
2. Discuss the classic view of succession. Briefly discuss two criticisms of this view and why each is relevant to restoring damaged ecosystems.
3. Increasingly design of restoration projects will have to consider climate change. Pick a specific ecosystem type and briefly discuss three ways in which the ecosystem might be affected by climate change. Then discuss three ways to design the restoration project to incorporate a consideration of these changes.

Long essay - Answer the following question (24 points) on lined paper.

2. You are hired by CalTrans (California Dept. of Transportation) as a consultant on the routing of a new freeway corridor between two cities. One route cuts through important mountain lion habitat effectively splitting the population into two populations that may be too small to reproduce. The alternate route would destroy one of the few remaining endangered Santa Cruz tarplant (*Holocarpha macradenia*) populations. Suggest proposals to mitigate for each of these routes. For each proposal discuss at least three problems/considerations. Then chose one of these alternatives, justifying your decision.