Homework #5 (answer key)
ECNS 204
Snowmester 2020

1.) Suppose a lake is publicly owned, i.e., a "common property" with "free" fishing for all. The number of fish caught varies with the number of people fishing as follows:

L (i.e., # of people fishing)	Total Product (i.e., number of fish caught	Value of Total Product	Value of Average Product	Value of Marginal Product
1	13	130	130	130
2	23	230	115	100
3	30	300	100	70
4	36	360	90	60
5	40	400	80	40
6	42	420	70	20
7+	42	420	60	0

Assume the market price of these fish is $10 per fish, and this price is unaffected by the total number of fish caught in this lake. Assume all fisherman can earn $100 per day in their next best alternative. Assume for the moment that there is no depletion of the stock of fish in the lake, for any level of fishing.

a.) Under a common property regime, how many fishermen will choose to fish the lake? Explain why common property is socially inefficient and leads to "too much" fishing.
Common property leads to too much fishing because individuals will crowd the lake to fish until the value of the average product equals their alternative employment possibility. The alternative wage of $100 means that these workers could ***produce*** $100 worth of goods somewhere else in the economy, if they do not fish. Three individuals will crowd the lake in this example, where the average product is ten fish at a price of $10 each (= $100). This is where the VAP is equal to their next best alternative. Notice that the VMP associated with the third fisherman is only $70, implying that the third fisherman is costing society $30 in gains.

b.) Instead of common property, suppose the lake is privately owned and the owner decides how much fishing to allow. How many fishermen will fish the lake in this case? Is this a socially efficient outcome?
In the case of common property, the private owner will allow entry to the lake to the point where VMP is equal to $100. Thus, 2 fishermen will fish the lake and this is a Pareto efficient allocation of resources.

2.) When I was in graduate school at the University of Washington, I would come home to Montana frequently to visit my girlfriend at the time (and now my wife). During the winter months, one of my favorite outdoor activities is ice climbing, which there is much more of in MT than WA.

If I was home for a short trip (e.g., a weekend), I would spend all of my time with my girlfriend. If I was home for a medium-length trip, say one week, then I would spend 5-6 days with my girlfriend and the other 1-2 days ice climbing. If I was home for the entire winter break, then I might spend a week or more ice climbing. Give an economic argument, based on the concepts from Chapter 7, that explains my pattern of behavior.

I was simply "equating the margins" between girlfriend-days and ice-climbing-days. At some point, the marginal value of a girlfriend-day diminishes to the extent that ice climbing becomes the more attractive option.