Resource Economics – Seminar 5

Part I: Economics of Fisheries: We will cover some remaining issues from Seminar 4, with emphasis to approximation of the harvest function and Bionomic Equilibrium concepts.

Part II: Economics of Forestry: Consider the standard model of an even-aged **forest** with constant prices. Denote the standing stock by $x(t)$, and the planting cost by k. The price of the timber at the market per unit of x is denoted by P, similarly the cutting cost by c and the net price by p (I.e. $p = P - c$).

2.1.) *Derive the optimal rotation length T in an infinite horizon model.*

2.2.) *Show and provide intuition for changes in the optimal rotation period due to an increase in: (a) planting cost, (b) cutting cost, (c) the gross price of timber, (d) the discount rate, and finally (e) the productivity of agricultural land.*

2.3) *Demonstrate that a tax τ imposed on each unit of timber felled will increase the optimal rotation length.*

2.4) *Discuss the impact on the rotation length if in addition a subsidy of the same magnitude τ were paid for timber growth.*

a.) Call the net-present value of this program $N(T)$. Is it positive?

b.) Show that the program will lead to a decreased rotation period.