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1. Calculate and graph the hydroperiod of this 10,000 square meter wetland area located in Louisiana. What kind of wetland is it? Why? Show your calculations (not necessary to type). (20 points)

The wetland has the following characteristics:

Forested watershed area = 20,000 square meters

Soil Permeability at a depth of one meter = $0.006\text{cm/sec} \times 10^{-5}$ (consider zero) Hydrologic Response Coefficient = 0.10

Outflow cross-section = 2m^2

Existing water level on January 1 = 0.4 meters

	Gross	Interception	Outflow	Groundwater	Evapotrans .
Months	Precip. (m)**	Rate*	Velocity (m)**	Inflow (m^3)	Rate (m)**
Jan- Feb	0.06	0.05	60	50	0.06
Mar-Apr	0.10	0.10	60	50	0.12
May-Jun	0.20	0.25	120	40	0.18
Jul-Aug	0.32	0.20	225	20	0.25
Sep-Oct	0.28	0.25	200	20	0.23
Nov-Dec	0.08	0.10	100	40	0.08
* Interception Rate is percent (0.05 = 5%)					
** Rates are totals for the two-month periods					

2. A developer would like to purchase a specific fifty-acre tract of land located in Clark County, WA and build 100 homes. The tract is adjacent to a ditch and appears to be partially in agricultural use (~33 acres), with the remaining in forest (~17 acres). What advice would you give to the developer concerning wetlands, necessary permits and timing of construction? The developer would like to start construction by September 15, 2008, if possible .

Your answer should be in the form of a letter to the developer and should include specific advice, citing the appropriate regulations, and explain the prudent steps the developer should take. (20 points)

3. Choose two animal species and describe how they can affect a wetland ecosystem. Explain in detail how the actions affect the wetland, describing the original conditions (hydrology, soils and vegetation) and how the wetland conditions would change. (20 points)

4. In your opinion, which is the most significant portion of the most significant regulation designed to protect wetlands (be specific, for example do not just say the Clean Water Act)? Explain your rationale in detail. (20 points)
5. In your opinion, which is the most serious flaw in that regulation? Explain your rationale and how you would fix it. What opposition would you expect concerning your “fix”? (20 points)



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