HP Training Exercises

22 May 2014

RIOS

Exercise 1 – Objectives: Nathpa Jhakri

- 2 Groups:
  1. One Objective (Erosion control)
  2. One Objective (Baseflow)
- Clumping factor = 0
- Activity budgets at 15%

	Energy plantation	Enrich-ment	Fodder develpmt	Protec-tion	Contour trench	Hedge fencing
Activity Budget 15%	365,000,000	7,600,000	117,000,000	2,337	954,000	137,000

- To Discuss:
  - How do the portfolios change when only one objective is considered?
  - Can you identify differences in the score maps for Erosion and Baseflow that would cause this change?

Exercise 2 – Floating Budget: NJ

- Two objectives (same as baseline)
- Clumping factor = 0
- Floating budget = 491,000,000

	Energy plantation	Enrich-ment	Fodder develpmt	Protec-tion	Contour trench	Hedge fencing
Activity Budget	0	0	0	0	0	0

- To Discuss:
  - How do the portfolios change from the baseline with the same budget allocated only based on ROI (floating budget)?
  - Why?

Exercise 3 – Beneficiaries: NJ

- Run RIOS for two cases:
  1) Without considering beneficiaries (weight = 0 for all the objectives)
  2) Beneficiaries have a large weight for all objectives (weight = 4)
- Clumping factor = 0

	Energy plantation	Enrich-ment	Fodder develpmt	Protec-tion	Contour trench	Hedge fencing
Activity Budget 15%	365,000,000	7,600,000	117,000,000	2,337	954,000	137,000

- How do the portfolios change without beneficiaries?

InVEST Sediment Retention

Exercise 1 – Degraded Forest

- Assume that all forest is degraded
- Change parameters in the biophysical table to reflect that, save as a new table
  - Copy parameters for Degraded Forest, replace original parameters for Evergreen/Semi-green Forest
- Run sediment model with new biophysical table
- How does the sediment export change for NJ if all the forest is degraded?
- Why might this have a relatively small impact in this particular watershed? In which study area might you see most impact of forest degradation?

Exercise 2 – RIOS Portfolios: NJ

- Run sediment model for RIOS 5% and 45% portfolios
- Change Land Use input
- Look for files \India_HP_data\RIOS_output_HP\LULC_portfolios\

  Output\portfolio_protected_NJ5_1.tif

  and portfolio_protected_NJ45_1.tif
- Calculate the change in sediment export from baseline (15% portfolio) to the new portfolios
- BONUS: Use Excel to create a graph of the change in water yield with 3 different portfolios

InVEST Water Yield

Exercise 1 – How much water comes from forest?

- Run InVEST water yield model for baseline (no activities)
- Use Zonal Statistics (ArcGIS Spatial Analyst) to determine the total amount of water contributed from the Forest LULC class.
- Use Zonal Statistics as Table function to look at the sum and average of water yield by LULC class.
- Which LULC class contributes the most water in NJ? Which contributes the least?

Exercise 2 – Input Parameters

- Discuss root_depth and Kc parameters
- Change root_depth parameters based on expert opinion from participants (make new biophysical table)
- Run InVEST water yield model with new input table
- Change Kc parameters based on expert opinion from participants (make new biophysical table)
- Run InVEST sediment model with new input tabel
- Calculate the % change in sediment export from baseline (original parameters) to the new parameters
- BONUS: Use Zonal Statistics to compare how the new parameters impact the average amount of water yield from each LULC class.