



What I shall Cover:

- What is Rural Environmental Science?
- My Educational Background
- My Concerns Before Coming to Reading
- My First Year in Reading
- My Present Situation & Future
- Conclusion



What is Rural Environmental Science?

- **Rural Environmental Science:**

- Agriculture
- Soil Science
- Landscape Management
- Plant Science
- Forestry & Woodlands
- Conservation & Environment



- **Modular (Core & Optional)**
- **Practical work & Visits**
- **Course work & Exams**



My Educational Background



- **Bennett Memorial – Tunbridge Wells**
- **11 GCSE's**
- **3 A-Levels (Biology, Chemistry & Geography), 1 AS-Level (Music)**

- Teaching & Learning:

- Classroom lesson
 - Spoken word
 - Videos
 - Exercise Questions
 - Taught from board
 - Practicals & Field trips

- Homework
 - Reading
 - Exercise Questions
 - Self taught syllabus
 - Coursework
 - Exams
- } Marks Didn't count



My Educational Background



<u>Subject Information</u>		<u>The predominate teaching technique</u>
<u>Biology</u>	<ul style="list-style-type: none">- 3 teachers- Modular	<ul style="list-style-type: none">- Spoken word- Taught from board
<u>Geography</u>	<ul style="list-style-type: none">- 3 teachers	<ul style="list-style-type: none">- Videos- Exercise Questions
<u>Chemistry</u>	<ul style="list-style-type: none">- 2 teachers- Modular	<ul style="list-style-type: none">- Taught from board- Spoken word



Concerns:

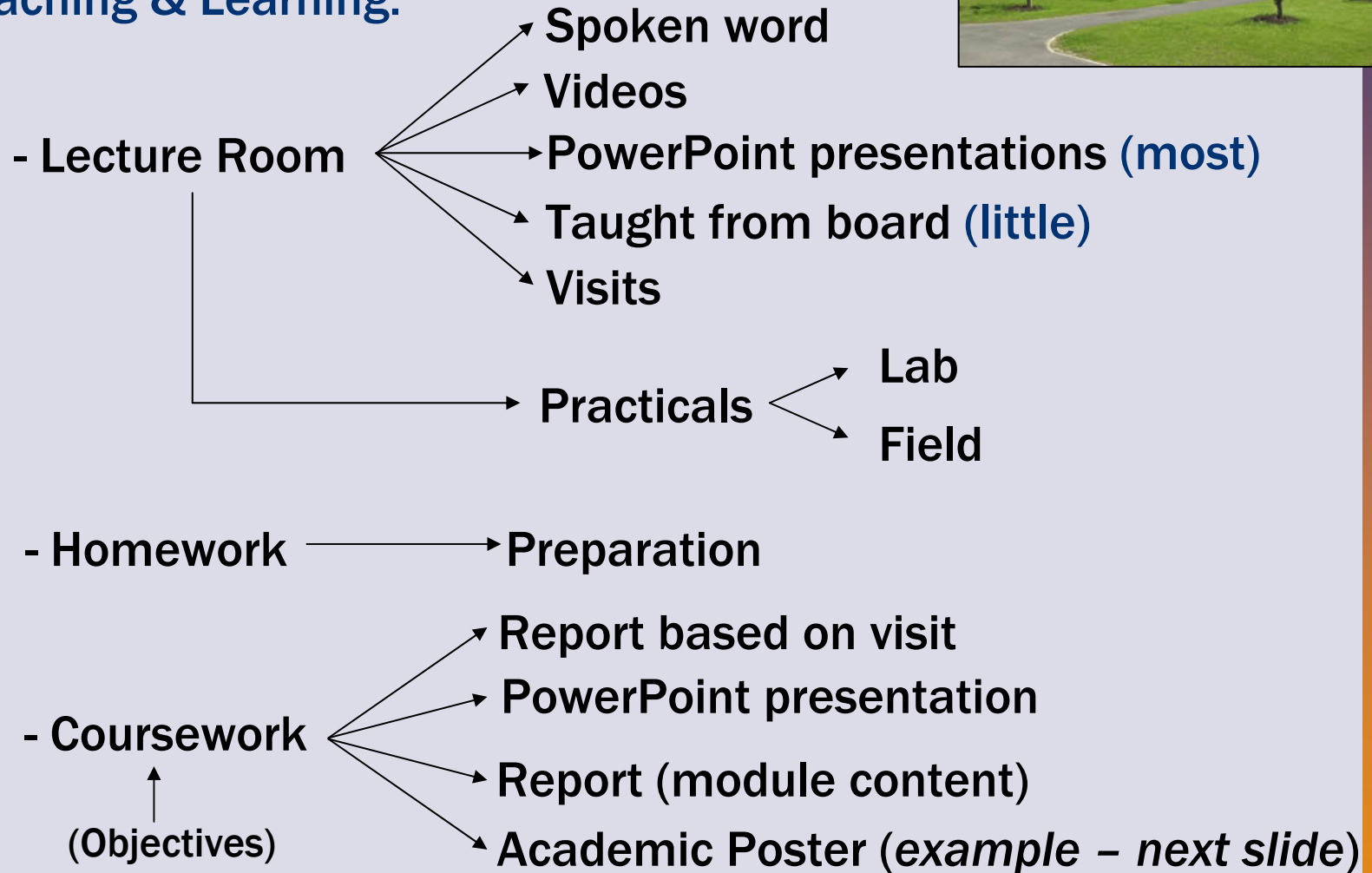
- Teacher support
- How long lectures were
- Writing lecture notes
- Expectations of how to use non-lecture time
- Self teaching
- Family support
- How do I write a long essay
- Work Load

Hopes:

- New life-style
- Enjoy course
- Get on well with course mates



- **Teaching & Learning:**



Problems Of Soil Erosion & How They Are Overcome

Definition of Soil Erosion:
"The removal of surface material by wind or water"



Problems Soil Erosion Can Cause



An example of severe soil erosion in the South Downs

- Loss of top soil
- Loss of fertility
- Finer seed beds
- Water contamination
- Exposed soil due to agricultural management
- Reduced yield & higher input costs

The Processes Of Erosion

Rill Erosion

- If rainfall exceeds infiltration
- A surface film of water forms

Hill Slumping

- The weight of the surface material on the slope exceeds the restraining ability of that material

Sheet Erosion

- Rain splash
- Water run-off

Gully Erosion

- Removal of topsoil & subsoil by fast-flowing water
- Formation of channels



Methods To Address The Problems

- Planting of hedgerows
- Contour cultivations (across slope)
- Spring sowing to reduce soil exposure
- Planting trees/bushes for wind protection
- Maintaining vegetative cover throughout the winter (cover crops, stubble, under-sowing)
- Direct drilling/minimum tillage instead of ploughing



Examples of Practical and Lab Work Soil Seed Bank Investigation





Examples of Practical and Lab Work Tillage & Decomposition





Examples of Practical and Lab Work Soil Science Field Studies





Places We've Visited

Alice Holt



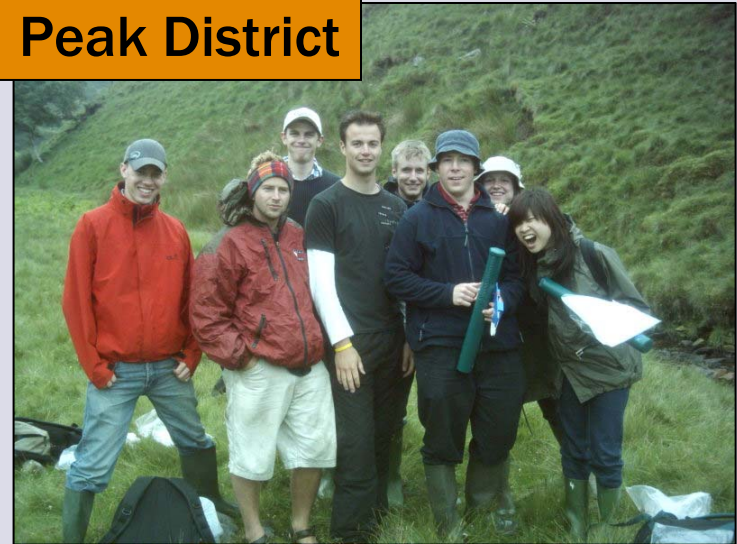
Greenham Common



Madejski Stadium



Peak District





Concerns:

- Teacher support ✓ YES
- How long lectures were ✓ Not too long! (breaks)
- Writing lecture notes ✓ Developed (Handouts are helpful)
- Expectations of how to use non-lecture time Unsure
- Self teaching ✓ Not much
- Family support ✓ YES...also course friends help out
- How do I write a long essay ✓ Reports...easier to structure
- Work Load ✓ Fine...Some congestion at end of term

Hopes:

- New life-style ✓ Good...more relaxed than A-levels
- Enjoy course ✓ YES
- Get on well with course mates ✓ YES...takes time



- Entering Year 3 of degree
- Currently undertaking an UROP, (Undergraduate Research Opportunity Programme), funded by CETL (Centre of Excellence in Teaching and Learning)

- Beginning my dissertation:

“Germination of arable weed seeds by smoke water – possible applications in an organic farming system”

- Beginning to think of careers:
 - Farm experience...either in UK or New Zealand
 - Farm consultancy
 - Estate work/management
 - Supermarket consultancy (marketing/selling)



- **Herbicide restrictions for organic farmers**
- **Weeds can effect organic yields up to 20% (Nilsen *et al.* 1993)**
- **Observations after natural fires have shown an increase in seed germination of native plants (Keeley *et al.* 1998)**
- **Studies have identified the active compound in smoke which promotes seed germination in over 170 plant species**
- **Increasing the germination of arable weed seeds in a stale seed bed could potentially increase the yield of an organic crop without the use of herbicide**

Ref: - Nilsen, A. L., Mikkelsen, G. & Ersbøll, A. (1993). Weed recordings – studies at organic farms and organic research areas. *Nordiske Jordbrugsforskeres Forening Udredning* 85, 103-107
- Keeley, J.E., & Fotheringham, C.J. (1998). Smoke-induced seed germination of California chaparral. *Ecology* 79 (7), 2320-2336



- Material burnt: straw, grass cuttings, green plant waste





Profile

0cm
2cm
5cm

Surface germinating seeds

Surface germinating seeds
(Different Conditions)

Conditions:

- Light
- Temperature
- Moisture

Will smoke water cause germination of seeds
in conditions that are not naturally possible?



- **My preferred teaching style:**
 - PowerPoint presentations
 - Some interaction (questions)
 - Visits
 - Visual diagrams
 - Clear objectives for coursework
 - PowerPoint handout to annotate
- **Preferred assessment method:**
 - Coursework
- **Skills I have developed:**
 - Presentation style
 - Report writing



- **Transition improvements:**
 - Library & info searching
 - Consistent assessment
 - Report writing
 - Referencing at school
 - Statistics
 - Better use of 'BlackBoard'

Thankyou For Listening!