

INBio Notes

General

- " humid = Caribbean, dry = Guanacaste, central valley forest
- " 850 species of birds in CR, 72 in InBio
- " 12,000 plant species in CR, 2,000 in InBio
- " 350,000 est. insect species in CR
- " 10,000 specimens in InBio

Humid Forest

- " evergreens, mushrooms and microorganisms decompose, bright colors
- " Poison Dart Frogs - only the adult is poisonous
- " espejito = butterfly
- " Bullet ant = biggest ant
 - " all fertilized eggs=100% female
 - " unfertilized eggs=male
 - " some with wings=queens (they lose their wings after mating)
 - " queen mates in mid-air, only once in her life
- " fungi, mollusks, nematodes

Purposes of INBio

1. Inventory (taxonomy)
2. Bioprospecting
3. Conservation
4. Information Management
5. Social Outreach

Parataxonomy

- " identify and collect specimens
- " world shares info
- " GPS helps
- " parataxonomists stay in the field for 24 days at a time, with 6 days off
 - " are trained and payed to find new species
- " when species are collected, they get a number
- " capture specimen in net, trap and use formaldehyde
- " pin and mount specimen, then dry in oven
- " use microscope to examine
- " put in plastic bag - need altitude and location of specimen
- " many species collected

Bioprospecting

- " researching new species
- " partnership - 10% of profit goes to conservation, 90% goes to training
- " many possibilities for new products - start with about 20,000 - takes a huge amount of \$ to narrow it down to one

- " for a new medicine, can cost \$360 million and take 20 years
 - " first product by InBio = nematocide
 - " comes from loncho carpus, a tree with felipei, a chemical that kills nematodes
 - " CR spends \$18 million on drug production each year
 - " InBio s chemical is more organic for farmers
- " Merck and INBio
 - " INBio gives Merck chemical extracts of organisms for drug screening
 - " Merck gives INBio a budget of over \$1 million as well as royalties
 - " first contract of its kind
 - " 10% of budget, 50% of royalties go to CR s National Parks Fund
 - " Biodiversity is an important asset

Costa Rica s Biodiversity

- " Biodiversity - the collection of all living things and all interactions among them and their surroundings; the living wealth on which we depend
- " CR has .03% of the world s land area, but 4% of its total species
- " Biodiversity provides: food, clothing, construction materials, fuel, medicine, perfumes, recreation, research and education, clean air and water, protection of water and coastal areas, production and conservation of soils, decomposing and waste recycling, climatic regulation, space for development of spiritual and religious values

Some Ecology Terms

- " cell
- " individual = one or more cell
- " species = organisms that can reproduce together
- " ecosystem = collection of different species that interact with each other and their world
- " biome = extensive geographical regions determined by environmental factors (temperature, elevation, rainfall, etc.)
- " biosphere = combination of all living organisms and the place that gives them what they need to survive.