

Ecological Pyramids

2.1.4 *Explain the principles of pyramids of numbers, pyramids of biomass, and pyramids of productivity, and construct such pyramids from given data*

2.1.5 *Discuss how the pyramid structure affects the functioning of an ecosystem*

Create pyramids for following data. Label the pyramids appropriately (number pyramid, pyramid of productivity, pyramid of biomass)

	A	B	C
	Number Pyramid	Biomass Pyramid (kJ m^{-2})	Productivity Pyramid (kJ^{-2}/yr)
Primary Producers	100,000	2,500	500
Primary Consumers	10,000	200	50
Secondary Consumers	2,000	15	5
Tertiary Consumers	500	1	--

	D	E	F	G
	Number Pyramid	Number Pyramid	Biomass Pyramid (g m^{-2})	Biomass Pyramid (g m^{-2})
Primary Producers	1,500,000	1	807	4.0
Primary Consumers	200,000	2,000	37	21.0
Secondary Consumers	9,000	90	11	--
Tertiary Consumers	1	1	1.5	--

Things to look at in Ecological Pyramids:

- The concentration of toxic substances in food chains
- The vulnerability of top carnivores
- The limited length of food chains

Type of Pyramid	Units	Description	Pros and Cons
Pyramid of Numbers	a number		Pros: Cons:
Biomass Pyramid	g m ⁻² (land) g m ⁻³ (liquids) J (energy content)		Pros: Cons:
Pyramid of Productivity	Jm ⁻² /yr		Pros: Cons:

