

Calculating Gross and Net Productivity Worksheet

Name:

Period:

For this worksheet you will fill in the missing information in the following charts. The equations you will use are the following: $NPP = GPP - R$ $GSP = \text{food eaten} - \text{fecal loss}$ $NSP = GSP - R$
 Where NPP is net primary productivity GPP is Gross Primary Productivity R is Respiratory Loss NSP is Net Secondary Productivity and GSP is Gross Secondary Productivity

Producer	GPP ($\text{g m}^{-2} \text{Yr}^{-1}$)	R ($\text{g m}^{-2} \text{Yr}^{-1}$)	NPP ($\text{g m}^{-2} \text{Yr}^{-1}$)
Algae	15	5	
Grass	25	7	
Sunflower	28	8	
Thistle	35	7	
Herb	42	13	
Shrub	48	17	
Bush	55	38	
Hedge	73	59	
Apple Tree	157	86	
Oak Tree	594	346	

Producer	GPP ($\text{g m}^{-2} \text{Yr}^{-1}$)	R ($\text{g m}^{-2} \text{Yr}^{-1}$)	NPP ($\text{g m}^{-2} \text{Yr}^{-1}$)
Bacteria		3	8
Dandelion		5	15
Rose		8	14
Cabbage		13	26
Pumpkin		22	42
Tomato		35	65
Raspberries		18	87
Potato		59	73
Carrot		85	106
Redwood		1300	15000

Consumer	Food Eaten	Fecal Loss	GSP ($\text{g m}^{-2} \text{Yr}^{-1}$)	R ($\text{g m}^{-2} \text{Yr}^{-1}$)	NSP ($\text{g m}^{-2} \text{Yr}^{-1}$)
Mite	15	4		3	
Tick	25	7		4	
Spider	45	25		10	
Mouse	59	23		15	
Rat	68	31		19	
Cat	84	49		30	
Dog	105	55		35	
Wolf	186	63		46	
Cow	568	346		125	
Elephant	1589	1064		323	

Consumer	Food Eaten	Fecal Loss	GSP ($\text{g m}^{-2} \text{Yr}^{-1}$)	R ($\text{g m}^{-2} \text{Yr}^{-1}$)	NSP ($\text{g m}^{-2} \text{Yr}^{-1}$)
Flea		6		2	10
Beetle		9		5	12
Scorpion		12		7	19
Hare		17		10	25
Lynx		22		11	36
Cheetah		48		14	47
Hyena		67		35	34
Lion		95		52	67
Tiger		107		43	85
Bear		755		545	426