

Hypothetical life table for brook trout				
age x	number n(x)	survival l(x)	ave. no. offspring produced per female m(x)	reproductive rate l(x)Xm(x)
0	10000	1	0	0
1	500	0.05	0	0
2	100	0.01	30	0.3
3	20	0.002	87.5	0.175
4	1	0.0001	137.5	0.01375
5	0	0	0	0
N= 10621			R ₀ = 0.48875	

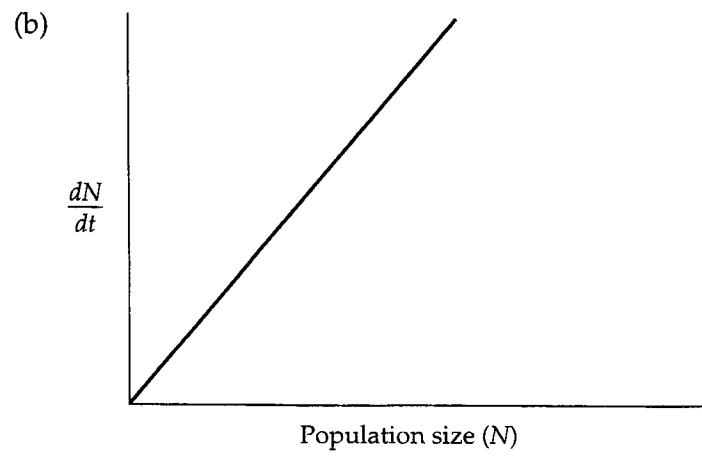
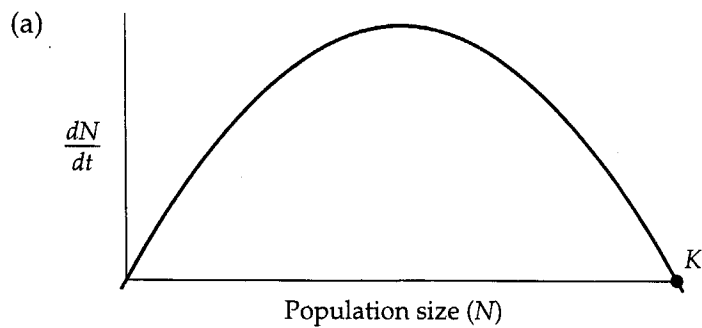
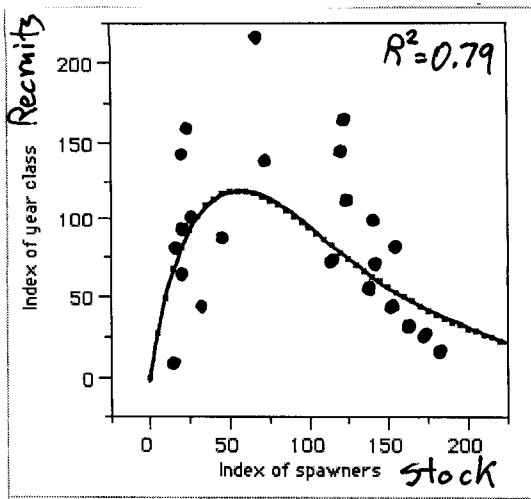


Figure 2.3 Population growth rate (dN/dt) as a function of population size. (a) Logistic growth. (b) Exponential growth.



Ricker curve fitted to Norwegian cod 1937-1960

$$R = \alpha S e^{-BS} \quad \alpha = 5.919 \quad B = 0.018$$

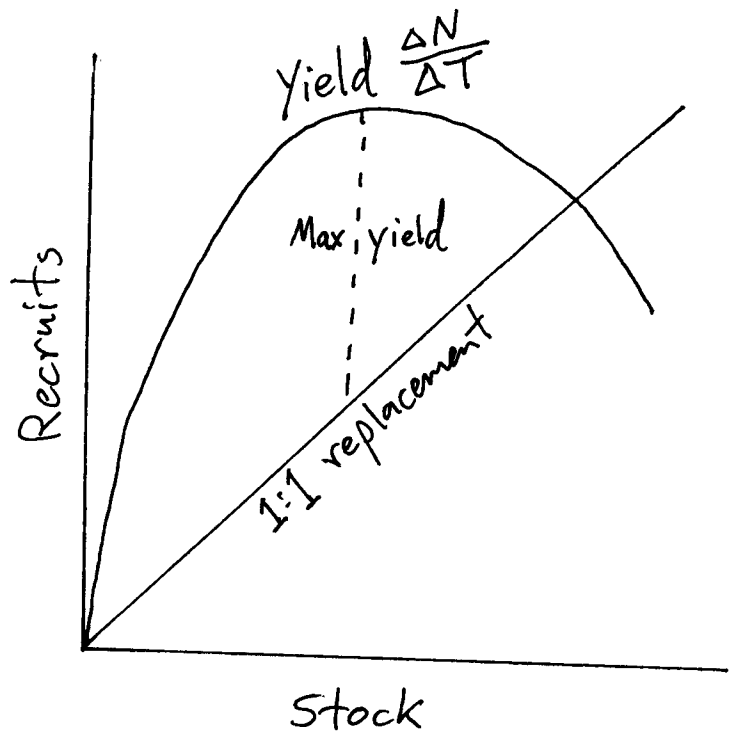


Table 2. Life table (mean values) for the six studied populations of *A. ubidiai*, including age-specific fecundity rates and survival probabilities.

Age	Adjacent basins						Imbakucha watershed					
	El Batán		Pataquí		S. Eduardo		Proaño		Gallopogyo		Quinde	
	Fecundity	Survival	Fecundity	Survival	Fecundity	Survival	Fecundity	Survival	Fecundity	Survival	Fecundity	Survival
0	0		0		0		0		0		0	
1	0	0.17	0	0.18	0	0.19	0	0.18	0	0.19	0	0.14
2	15.99	0.37	11.92	0.36	16.97	0.62	13.14	0.41	11.46	0.46	12.02	0.37
3	21.50	0.37	14.71	0.35	20.51	0.52	16.96	0.38	14.35	0.45	16.06	0.43
4	26.41	0.34	17.02	0.35	22.40	0.37	21.01	0.37	16.24	0.39	19.54	0.45
5	22.39	0.22	17.65	0.26	18.19	0.15	26.03	0.43	18.26	0.31	21.38	0.38
6		0	15.05	0.04		0	19.87	0.20	14.13	0.19	17.12	0.16

Six-year-old fish were not captured in the populations of El Batán and San Eduardo.

Table 3. Population growth rate (λ) and standard error (SE) for the study populations of *Astroblepus ubidiai* in the Imbakucha watershed and adjacent drainages.

Population	λ	SE
S. Eduardo	1.4614	0.124
Batán	1.1672	0.067
Gallopogyo	1.1852	0.112
Proaño	1.1647	0.132
Pataquí	1.0751	0.118
Quinde	1.0674	0.188

A λ value of 1.4614 in the San Eduardo population represents an annual abundance increase of 46.14%.

Table 5. Elasticities of representative vital rates survival probability S and fecundity E for the six studied populations of *Astroblepus ubidiai*.

Vital rate	Population					
	Batán	Pataquí	S. Eduardo	Proaño	Gallopogyo	Quinde
S_1	0.2859	0.284	0.2899	0.2771	0.2789	0.2661
S_2	0.2859	0.284	0.2899	0.2771	0.2789	0.2661
S_3	0.1067	0.1065	0.1043	0.1112	0.115	0.129
S_4	0.0314	0.0342	0.0242	0.0417	0.0378	0.0545
S_5	0.0043	0.0071	0.0018	0.0142	0.0093	0.0164
S_6	-	0.0002	-	0.0016	0.001	0.0018
E_3	0.1792	0.1775	0.1856	0.1659	0.1639	0.1371
E_4	0.0753	0.0723	0.0801	0.0695	0.0773	0.0745
E_5	0.0271	0.0271	0.0224	0.0275	0.0285	0.0381
E_6	0.0043	0.0068	0.0018	0.0126	0.0083	0.0147
E_7	-	0.0002	-	0.0016	0.001	0.0018