

# Aquaculture Model

2018-11-15

**Objective:** Step through optimal aggregate harvest in an open access fishery.

Gordon-Schaefer Model / INAPESCA 2018

Add a formalized reference.

Walk through system of equations with salient outputs.

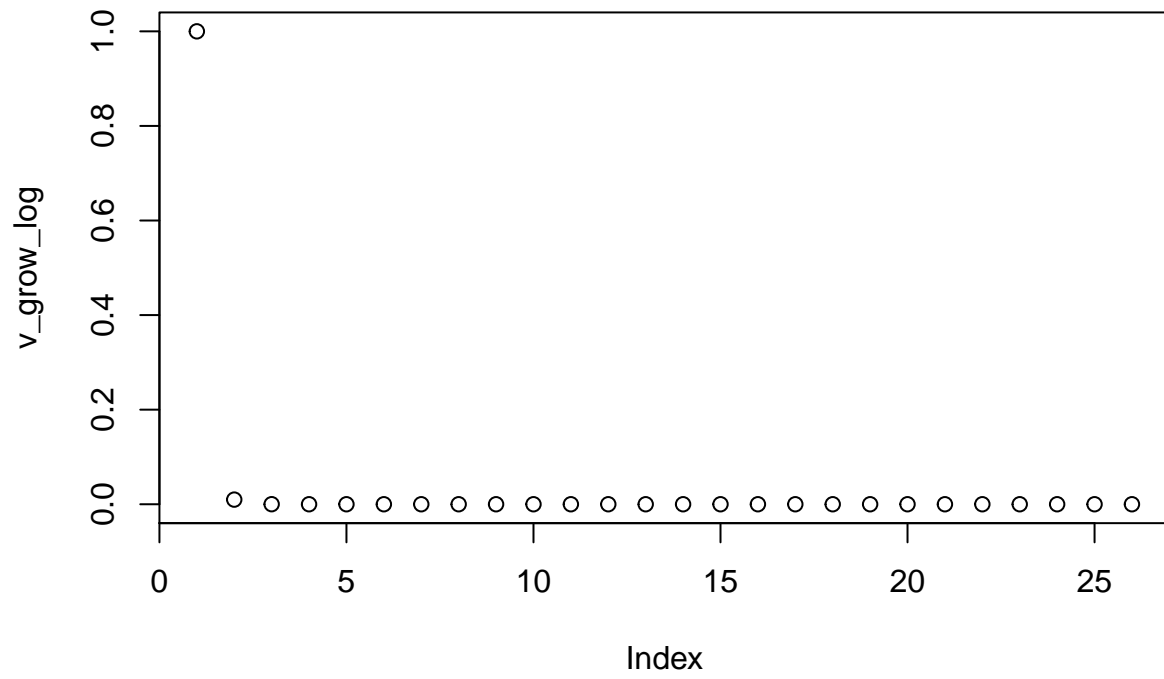
## 1. Deterministic Logistic Growth Demo

$$N_t = N_t + rN_t(1 - N_t/K)$$

```
# Growth references growth instead of stock. Merp.
grow_log = function(r, K, n0, start, end){
  v_n = as.numeric(vector(length=(end - start)))
  v_n[1] = n0
  t = length(seq(start, end))
  for (i in 2:t){v_n[i] = r * v_n[i - 1] * (1 - v_n[i - 1] / K)}
  return(v_n)}

v_grow_log = grow_log(0.01, 50, 1, 2000, 2025)
```

```
plot(v_grow_log)
```



Appendix: LaTeX Demo

$$d_i = \alpha_{0,i} - \alpha_{1,i} * x_{emissions} + u_i$$