UNIT 7: Exploitation

Outline

- Introduction
  - Balance and equilibrium
  - Tendency to oscillate
- A simple model
  - More detailed models
  - Reciprocal control
- Adding details
  - Dynamics
  - Equilibria
- Who controls whom?

Introduction

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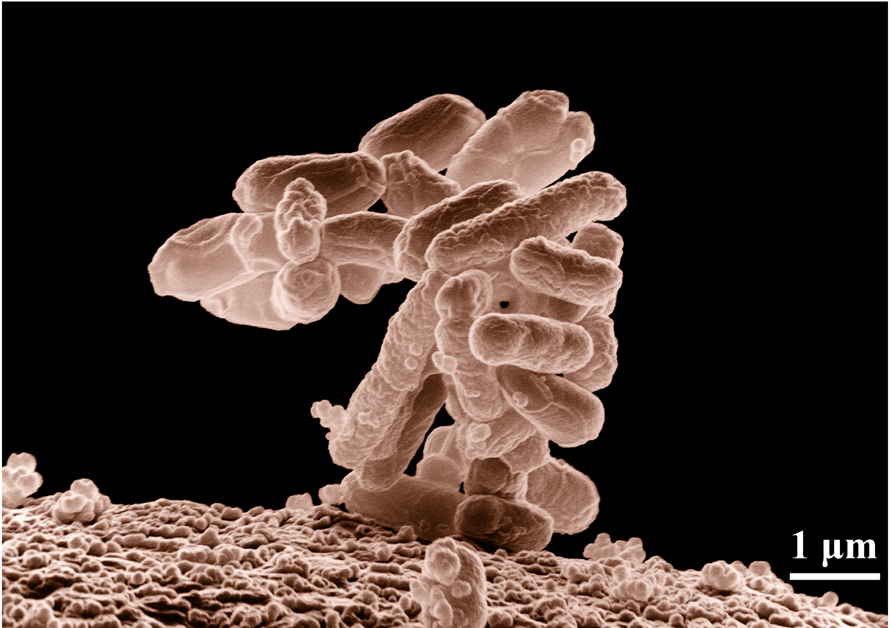

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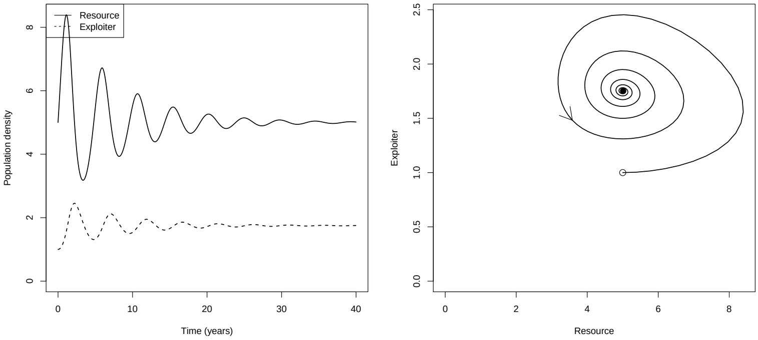
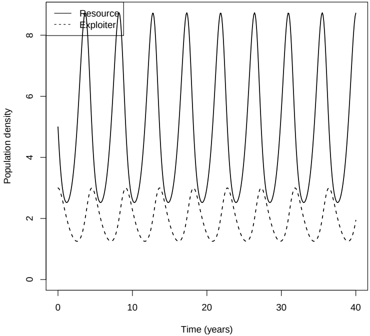
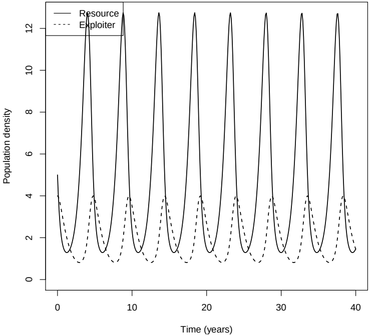


Neutral cycles





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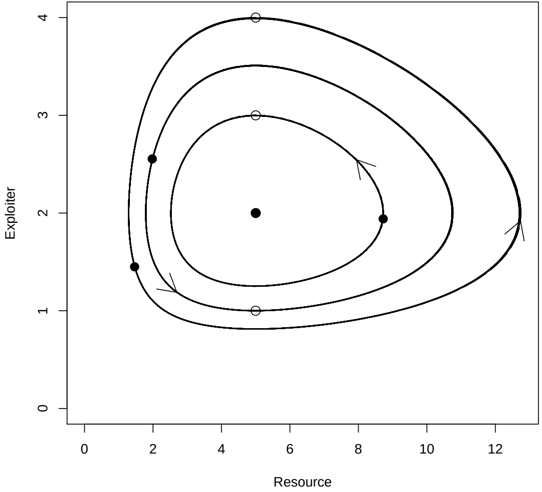

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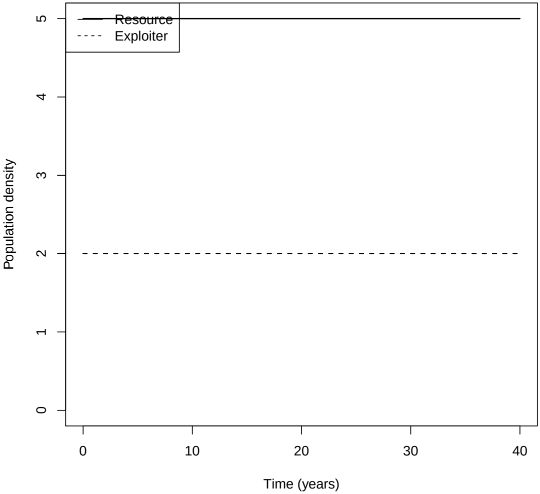
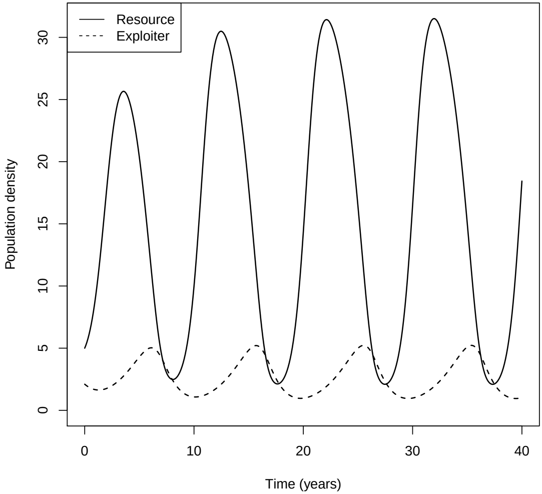


Limit cycles



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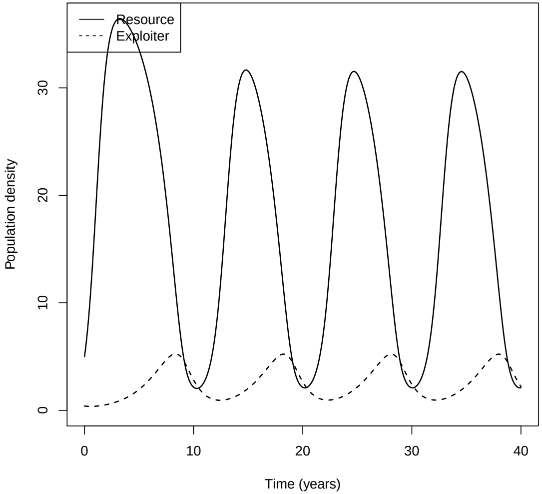

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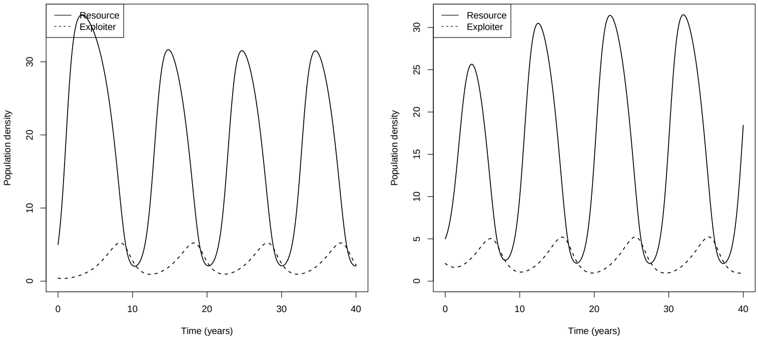

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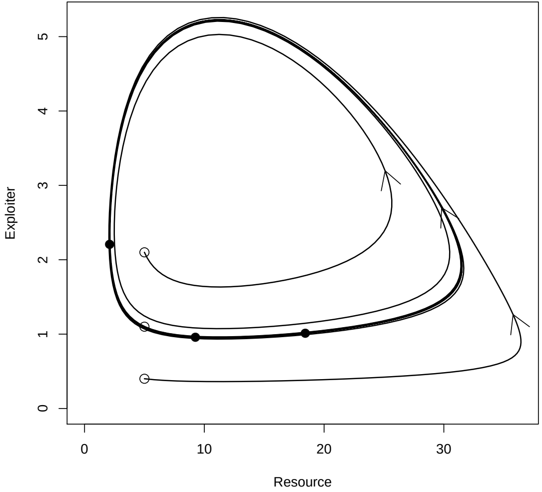

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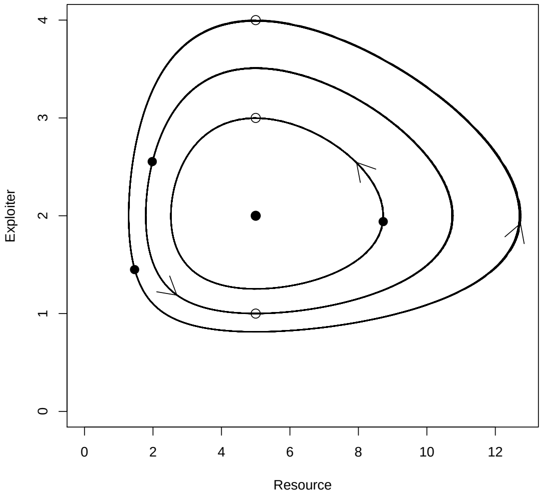

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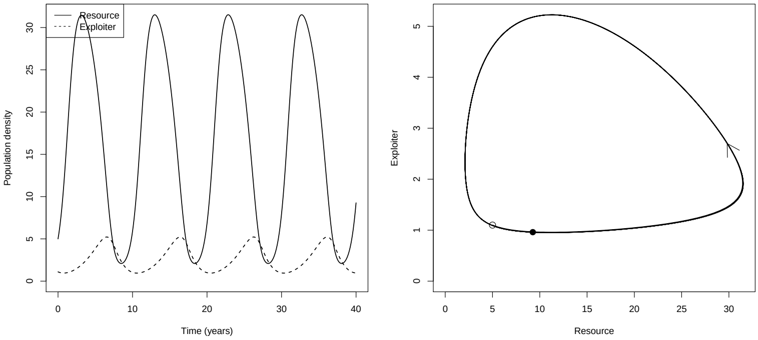
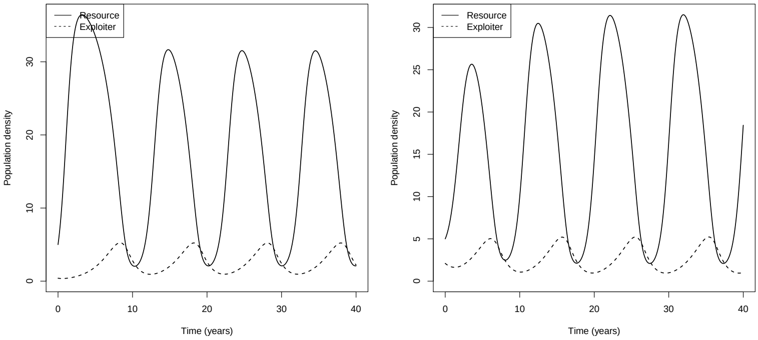


Limit cycles (repeat)



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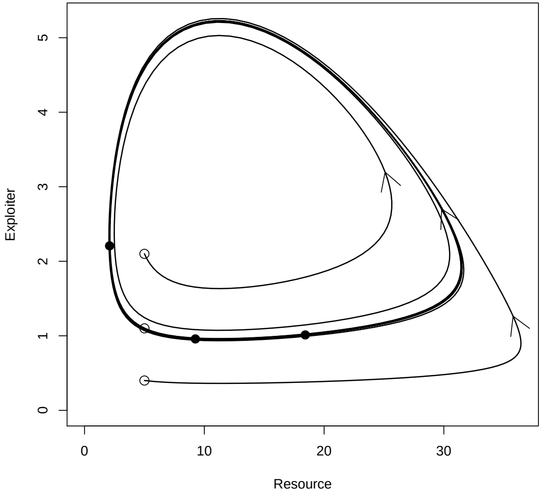

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- Balance and equilibrium
- Tendency to oscillate

A simple model
- More detailed models
- Reciprocal control

Adding details
- Dynamics
- Equilibria

Who controls whom?

How do populations affect their own growth rates?

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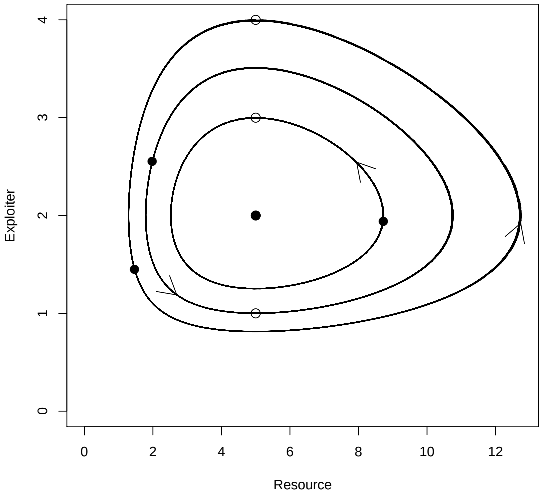

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People and the ocean

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- Tendency to oscillate

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- More detailed models
- Reciprocal control

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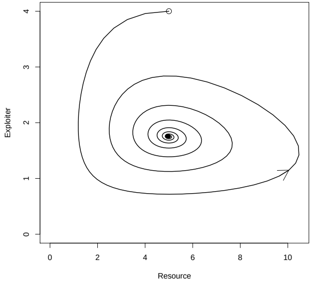

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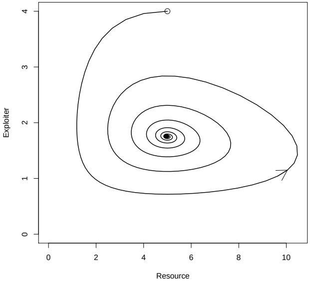

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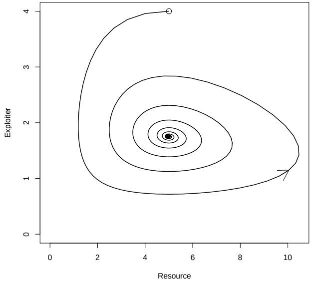

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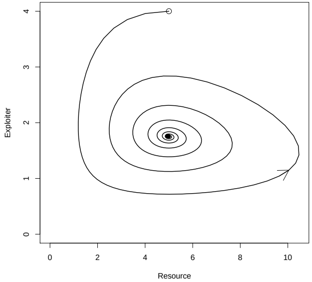

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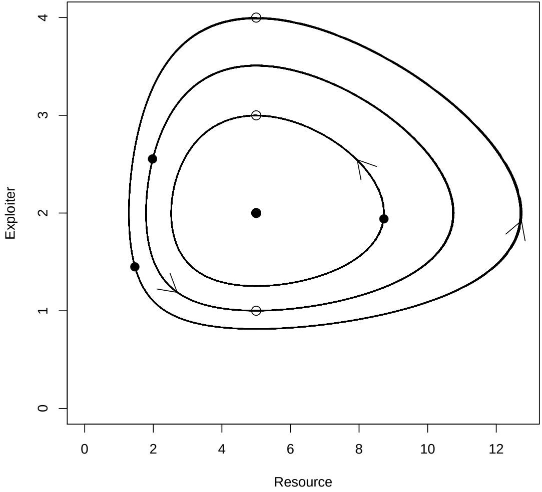

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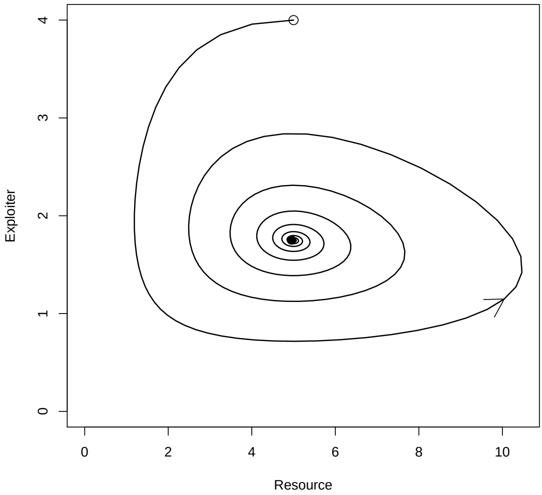

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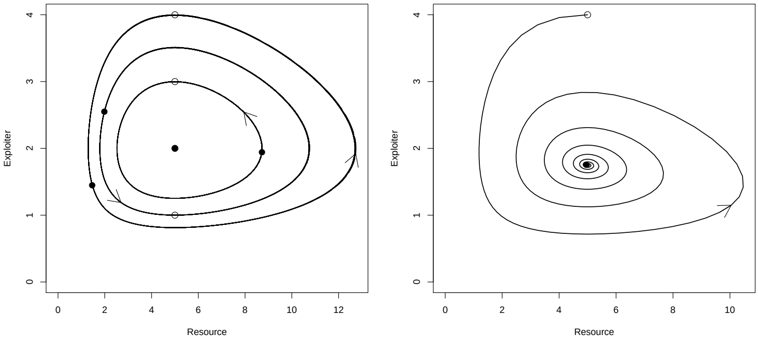

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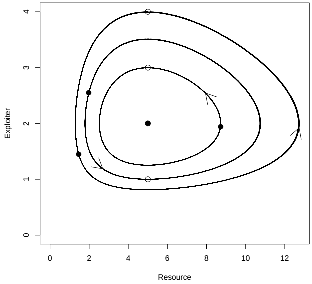

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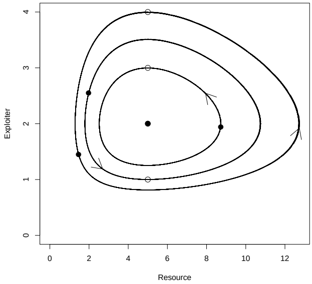
- 

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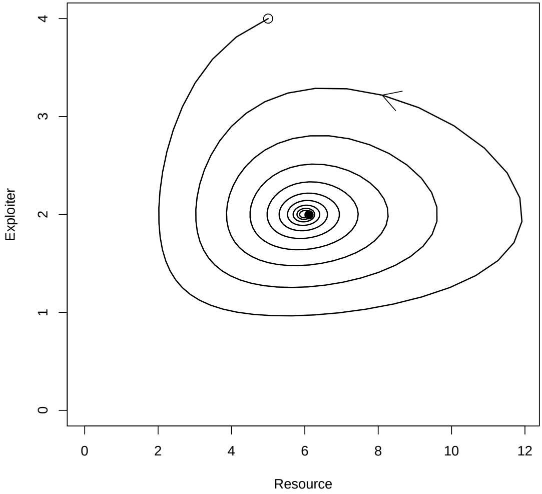

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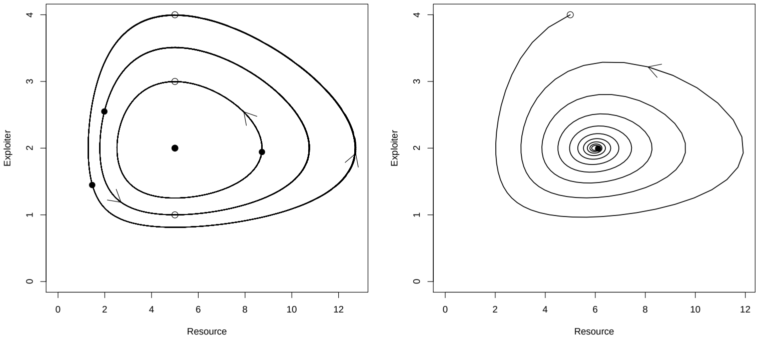

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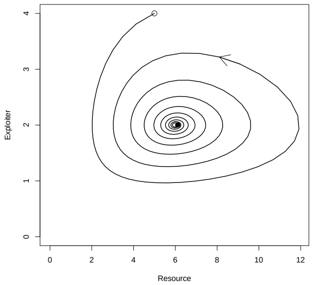

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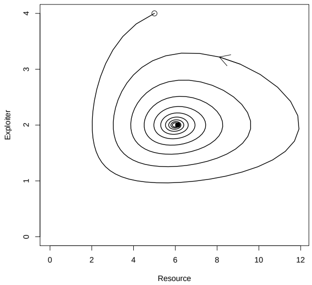

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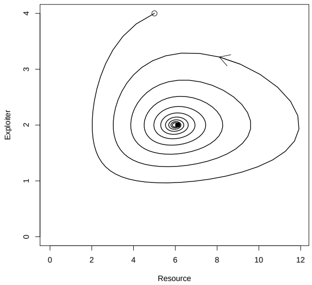

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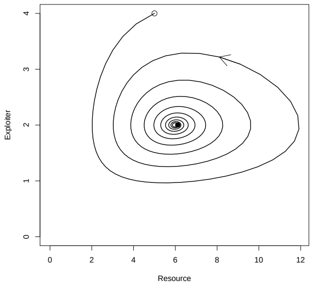

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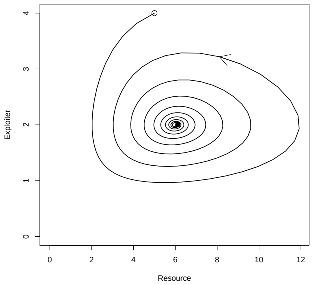

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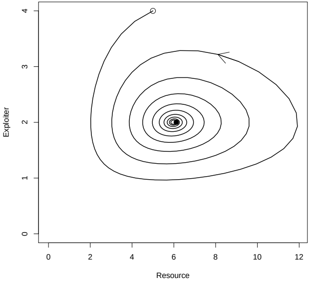

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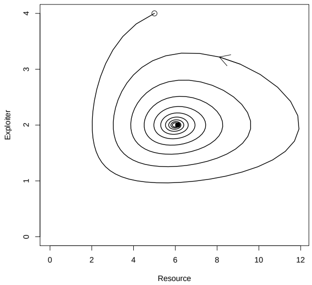

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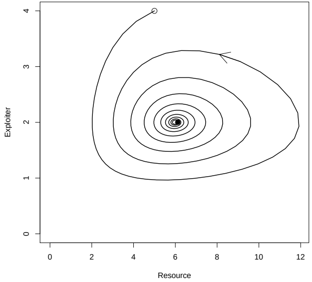

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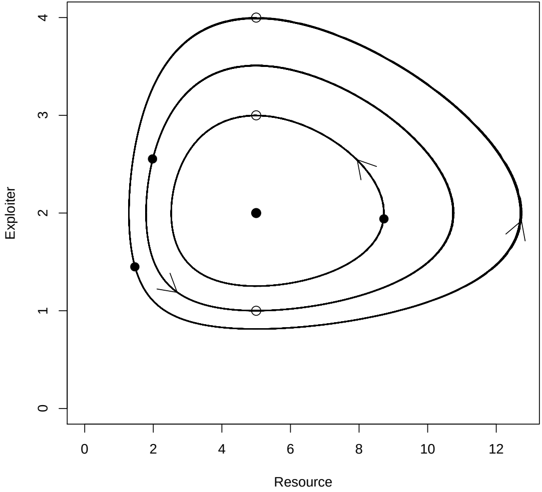

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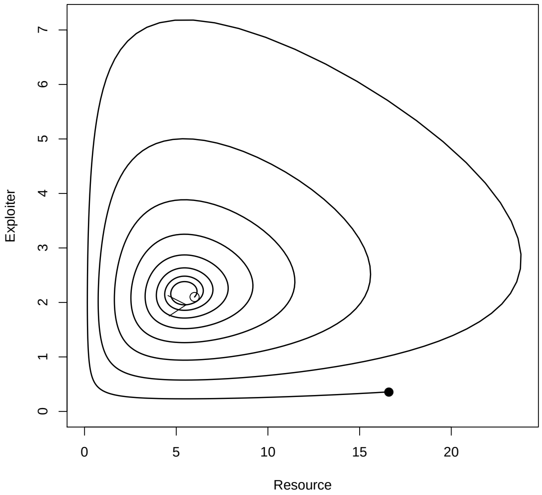

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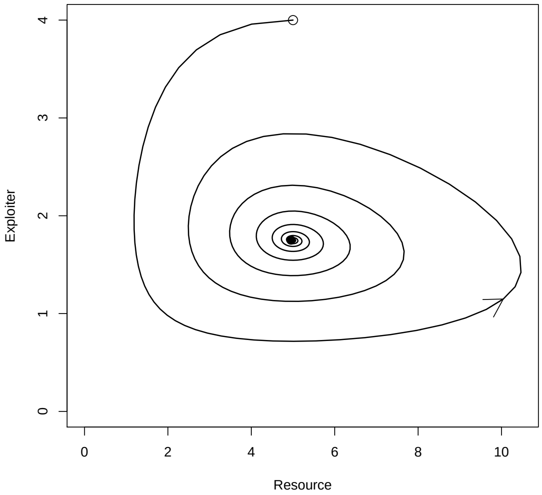

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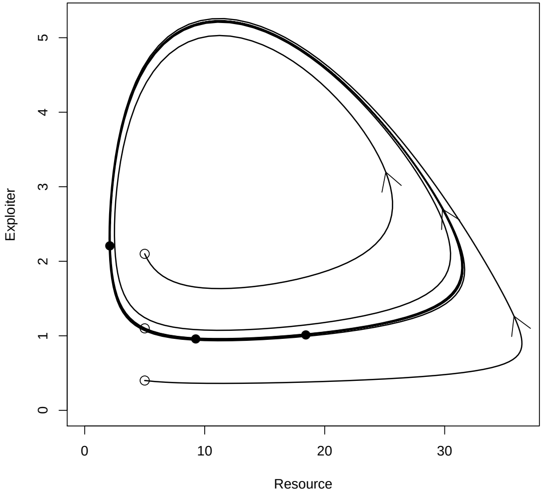

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Oscillations in a complex system

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- It often takes a long time for damped oscillations to die out, or for stable oscillations to converge
- Other stuff is going on at the same time
  - Other interactions
  - Environmental perturbations – weather, fire, people

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Outline

Introduction
- Balance and equilibrium
- Tendency to oscillate

A simple model
- More detailed models
- Reciprocal control

Adding details
- Dynamics
- Equilibria

Who controls whom?

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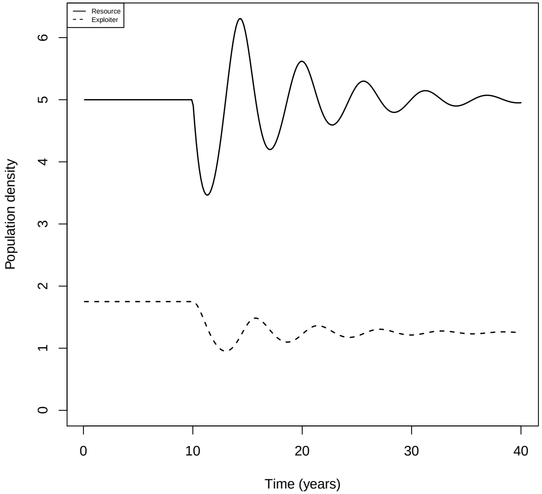

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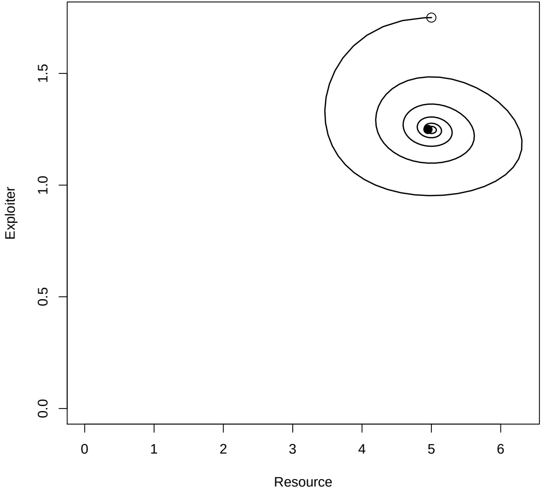

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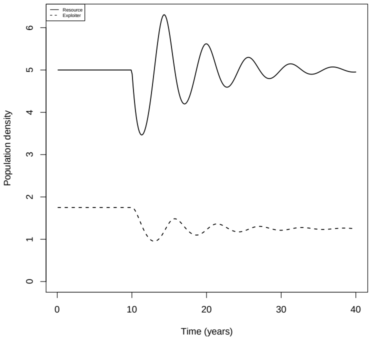

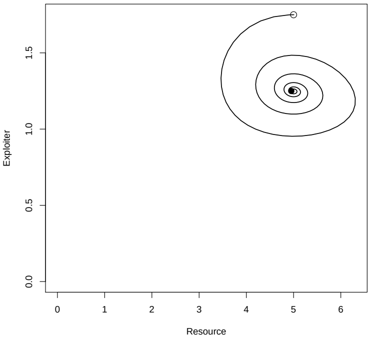

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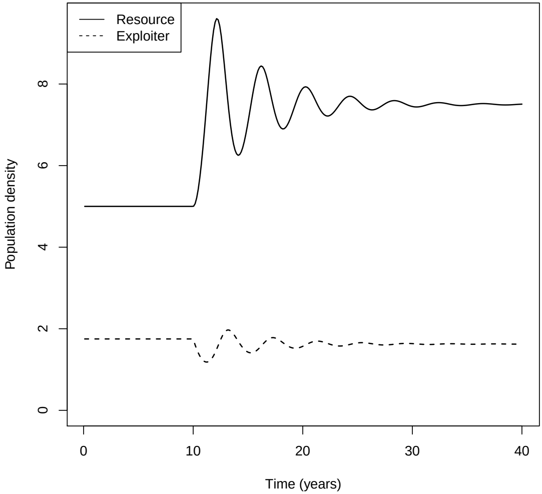

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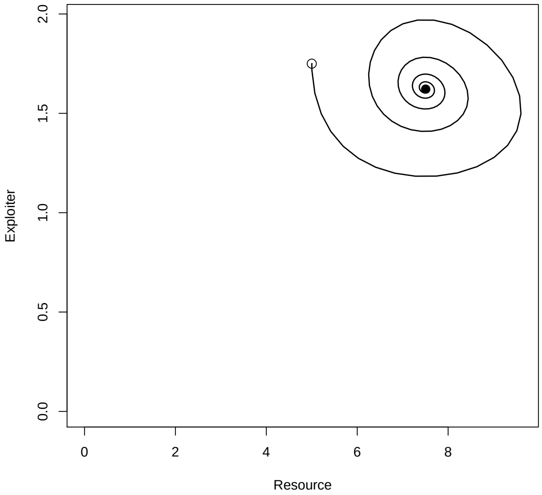

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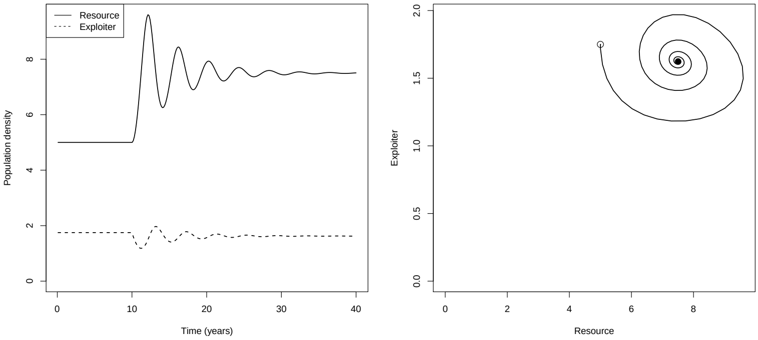

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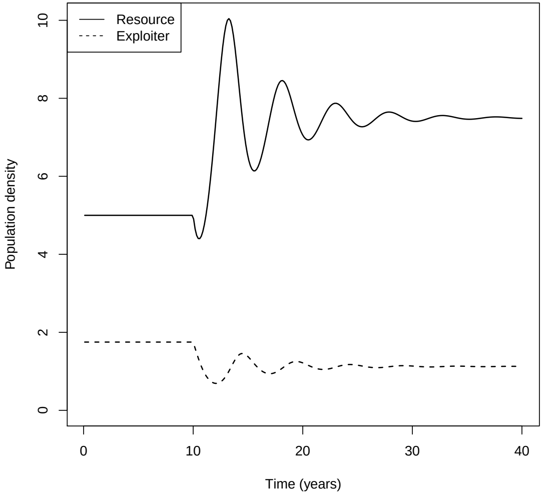

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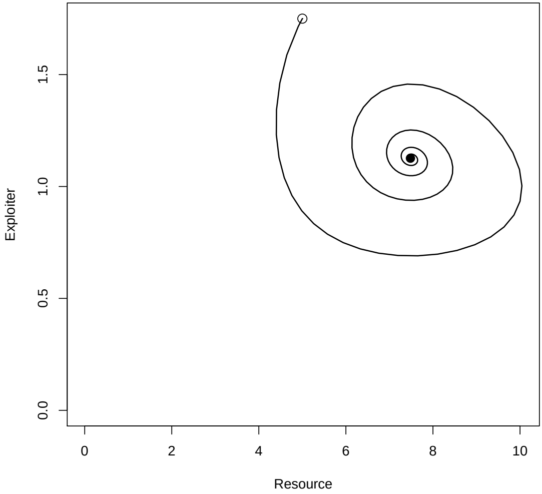

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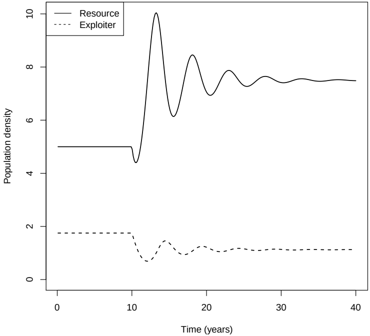

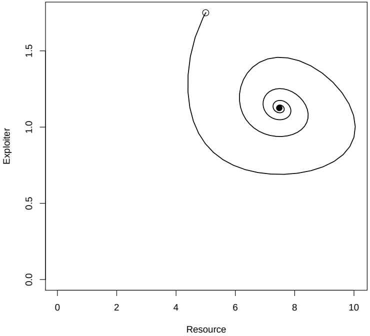

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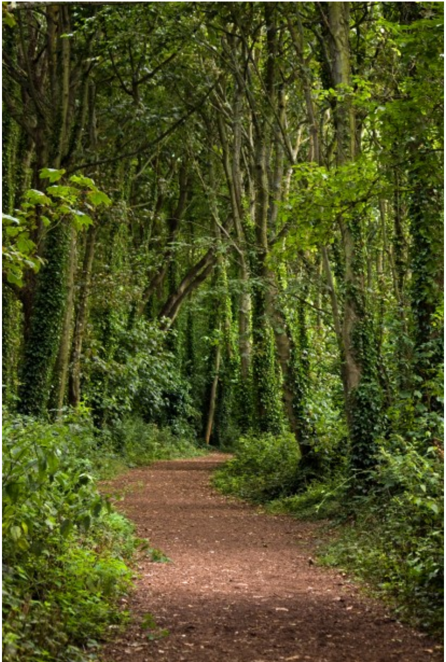

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