UNIT 6: Exploitation

Outline

Introduction
- Balance and equilibrium
- Tendency to oscillate

Models
- More detailed models

Equilibrium and balance
- Reciprocal control
- More detailed models
- Who controls whom?

Examples
- Oscillation
- Harvesting examples

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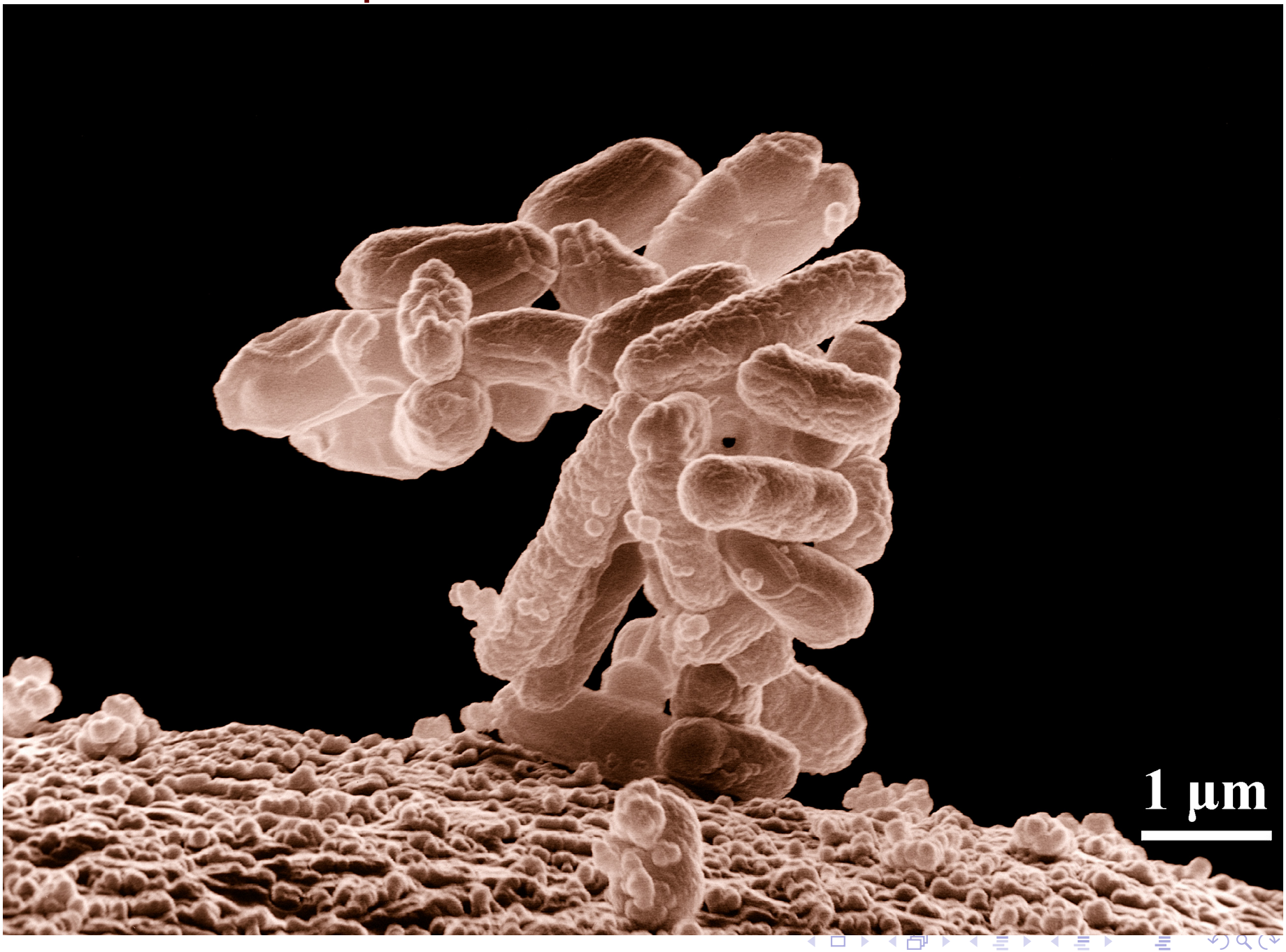

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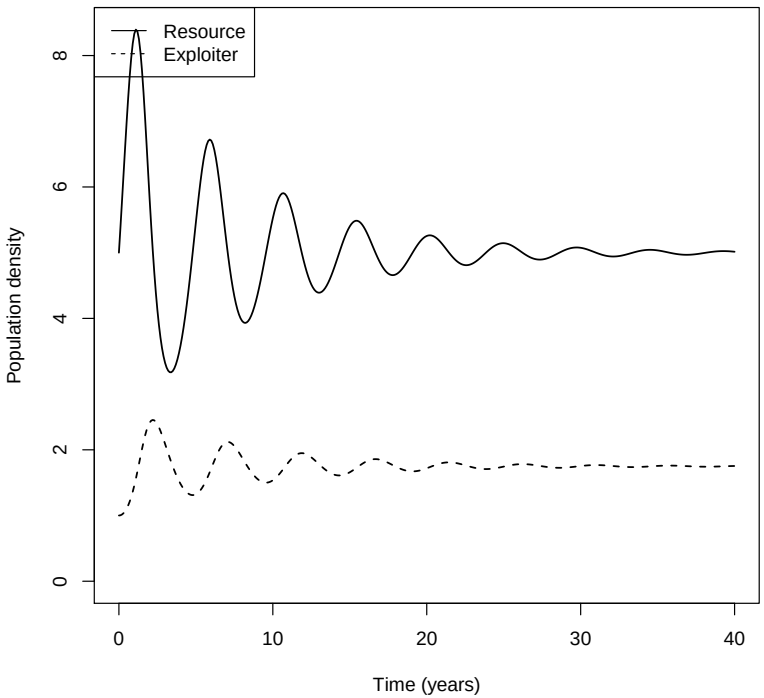

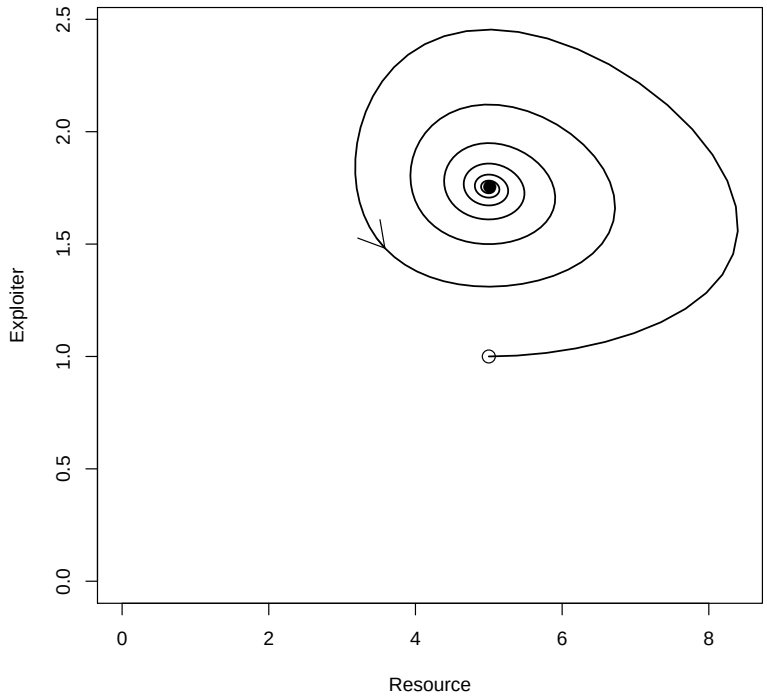

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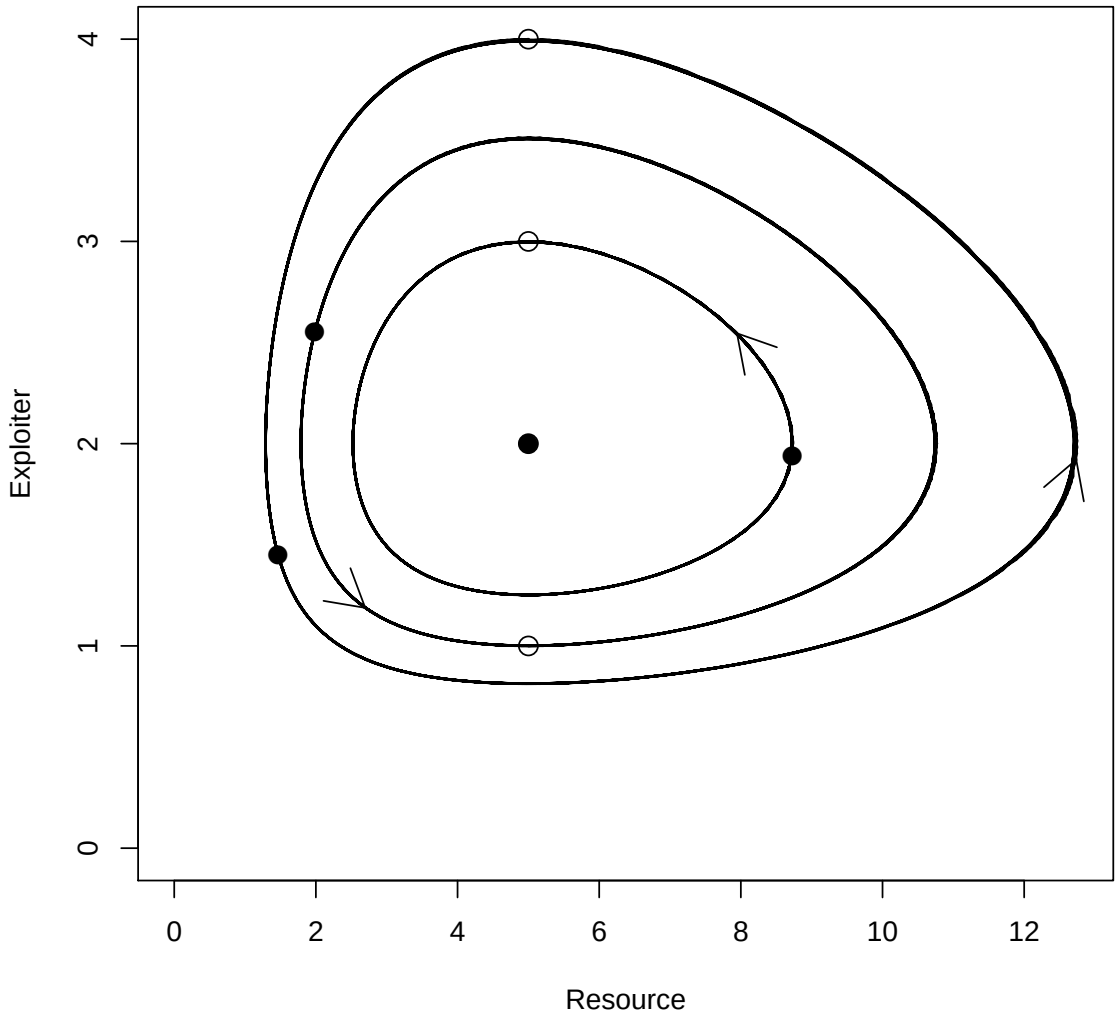

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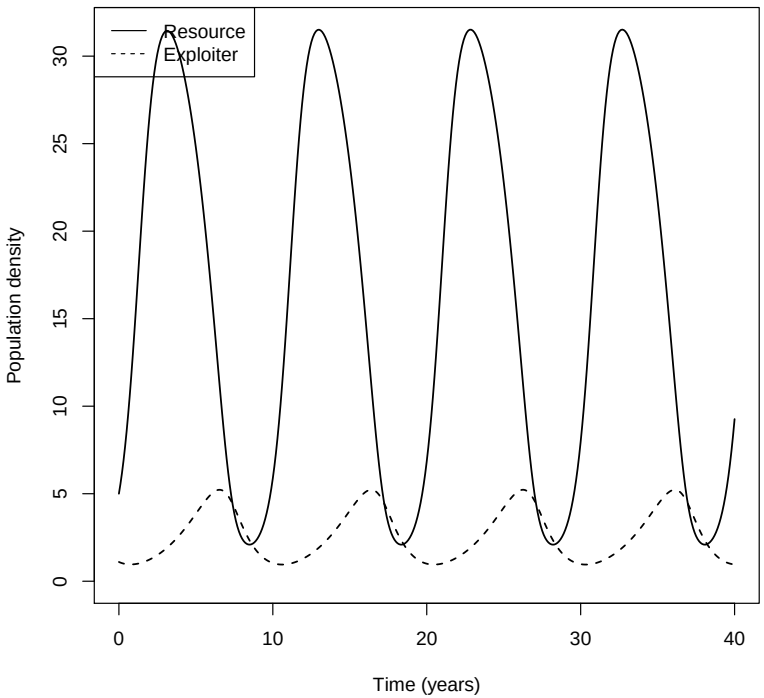

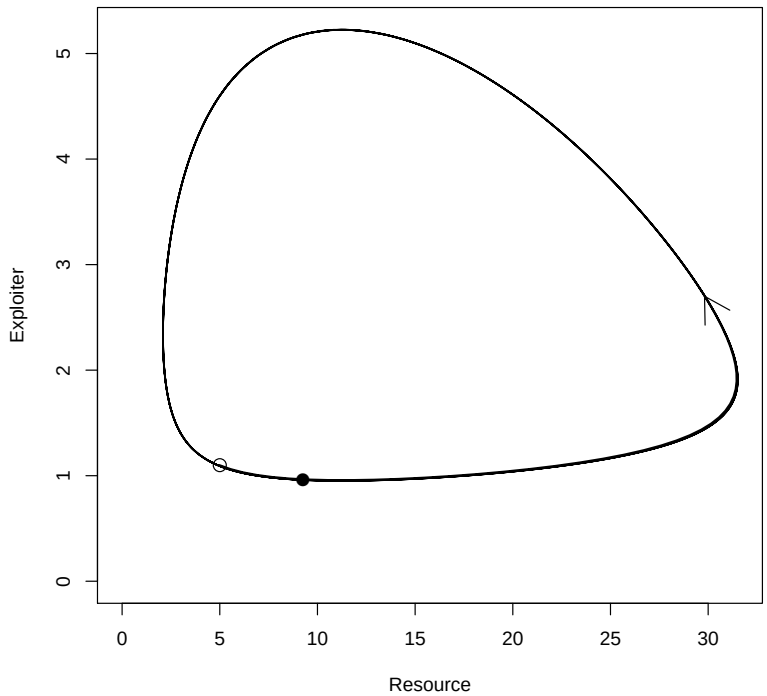

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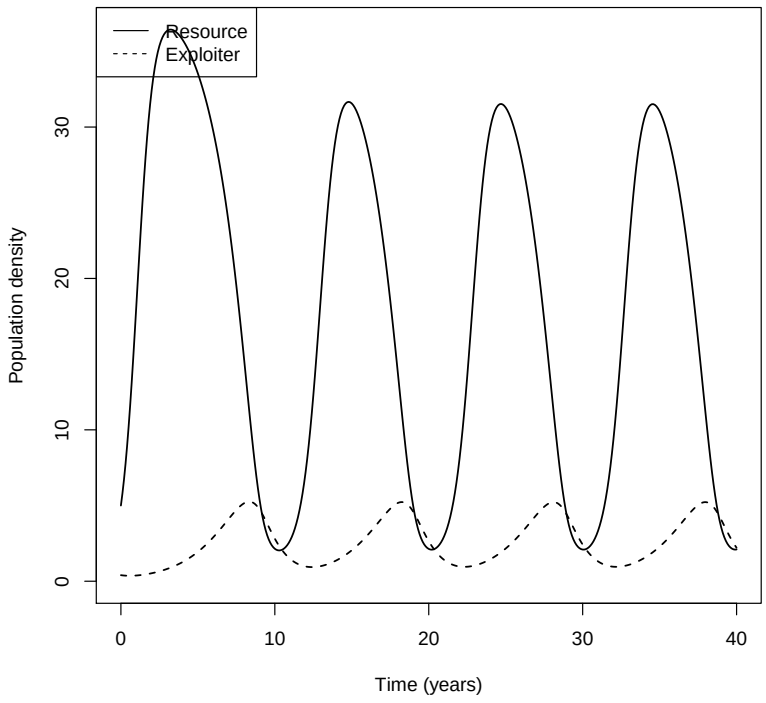

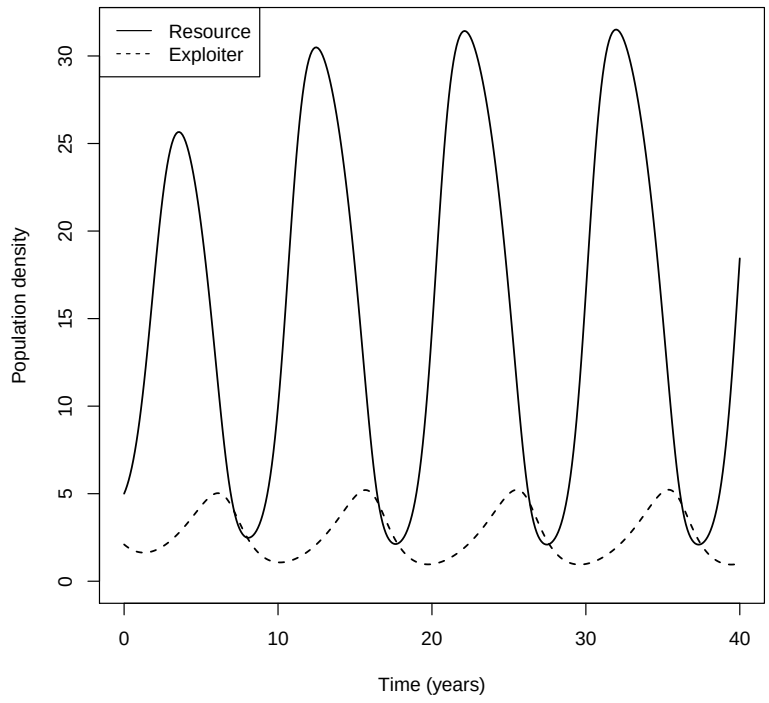

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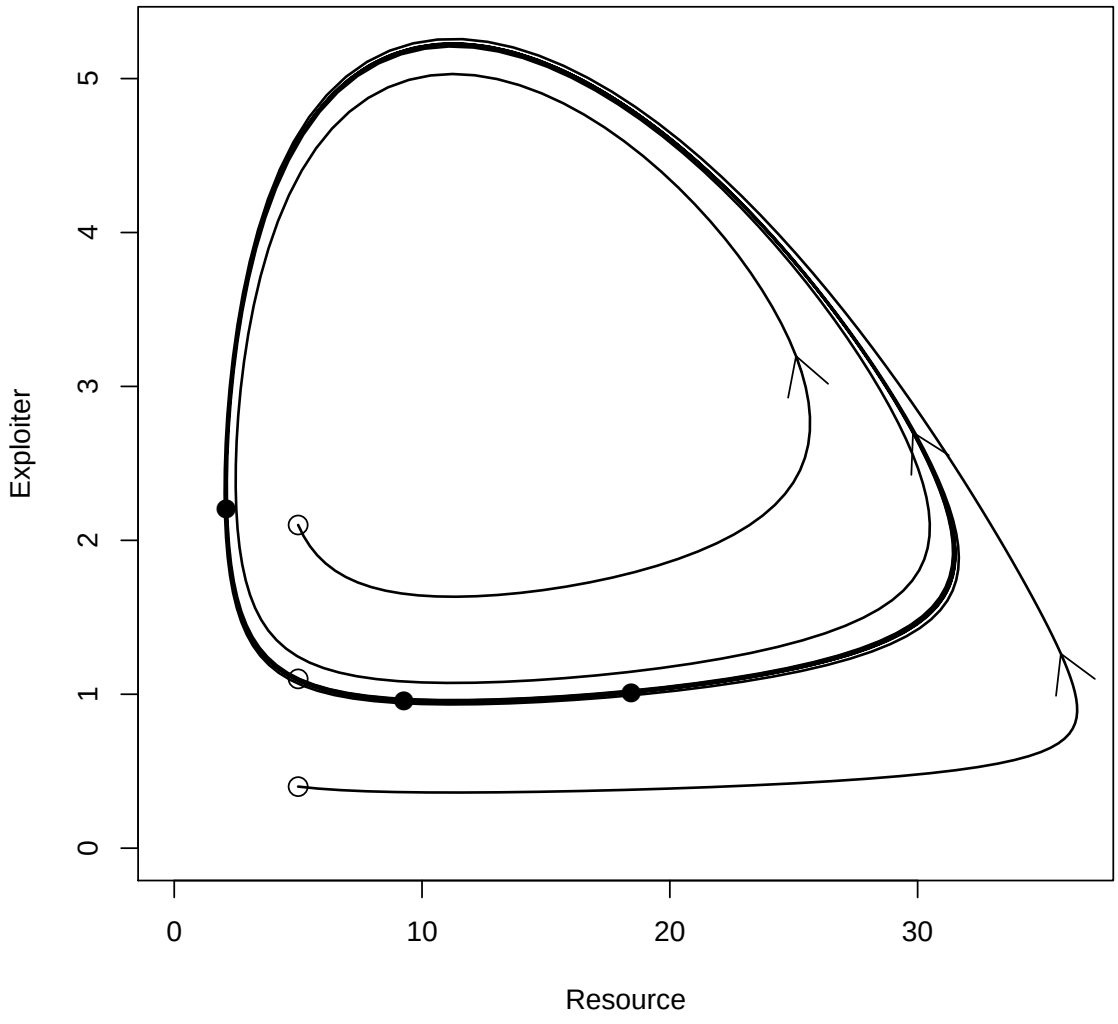

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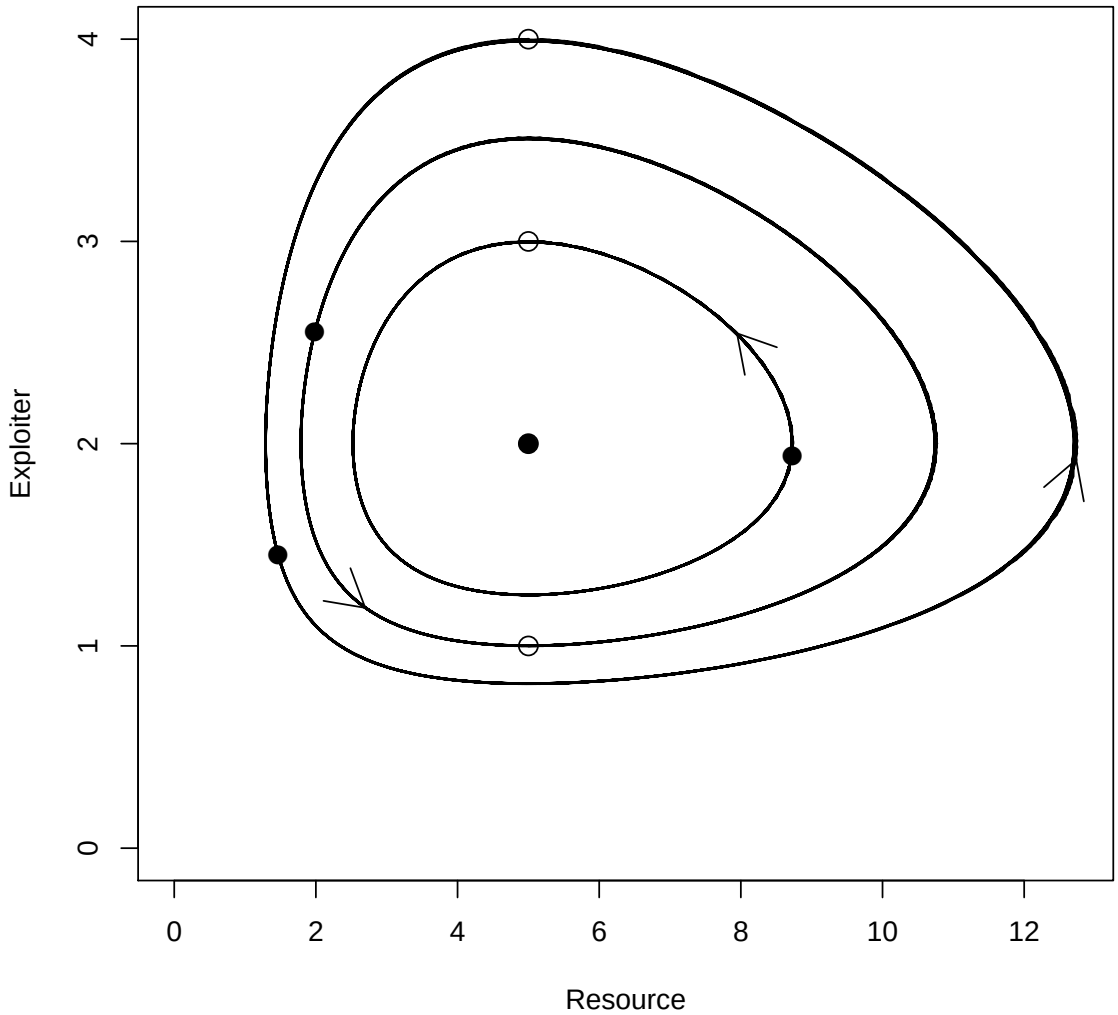

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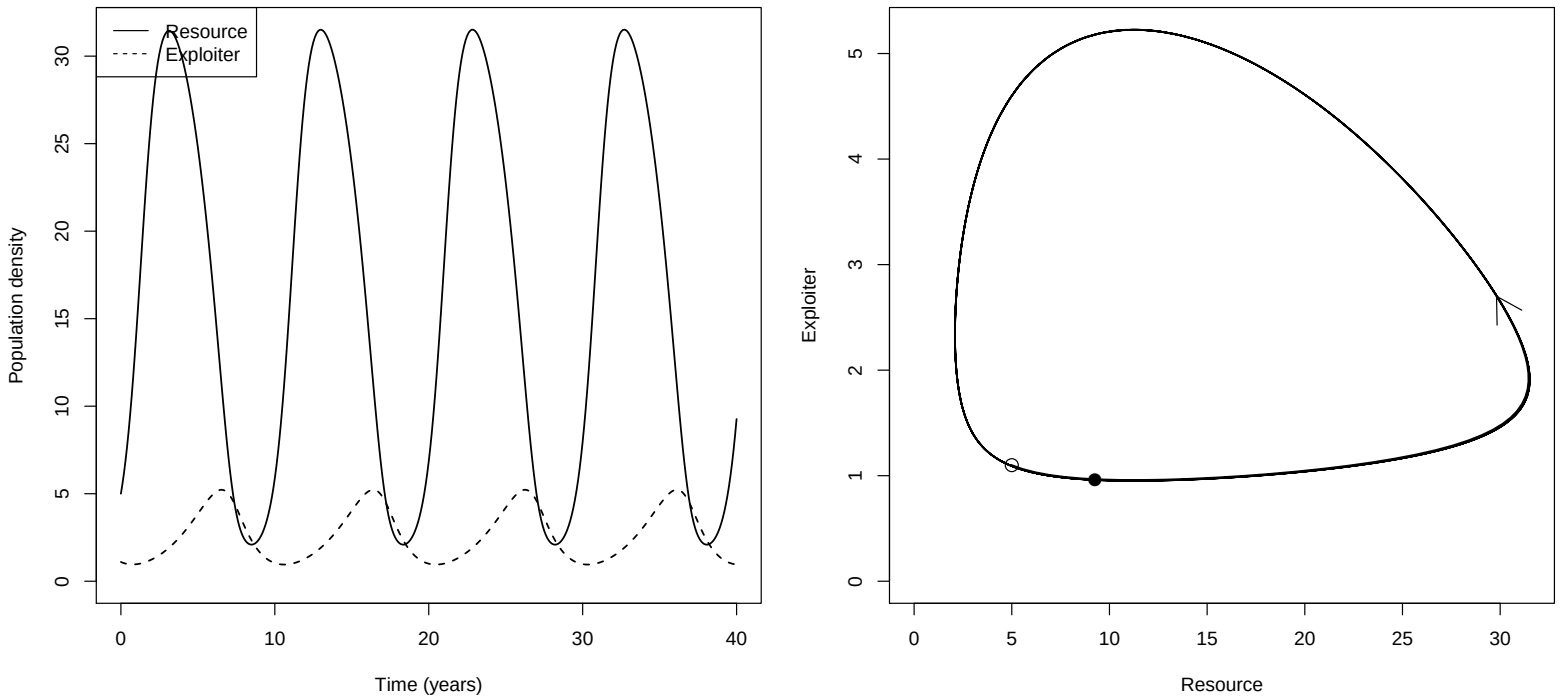

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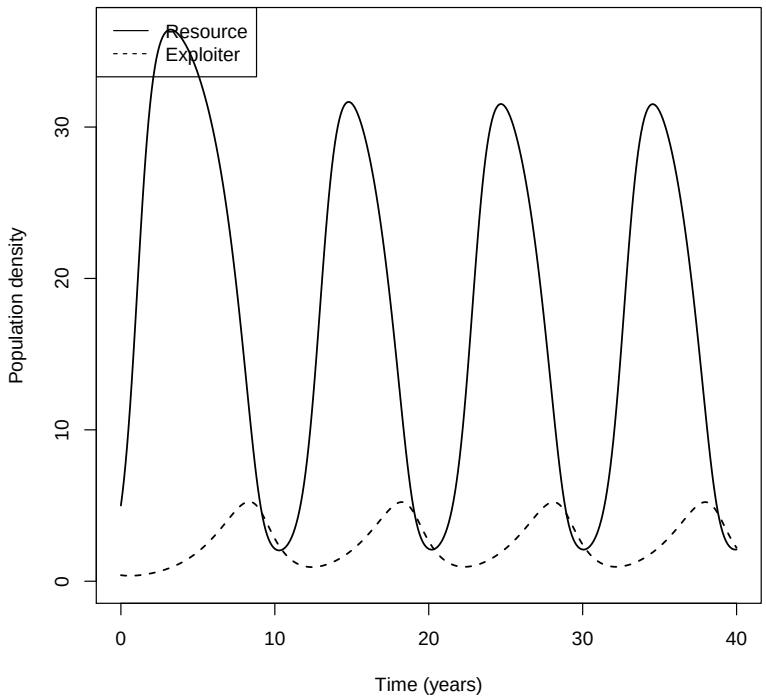

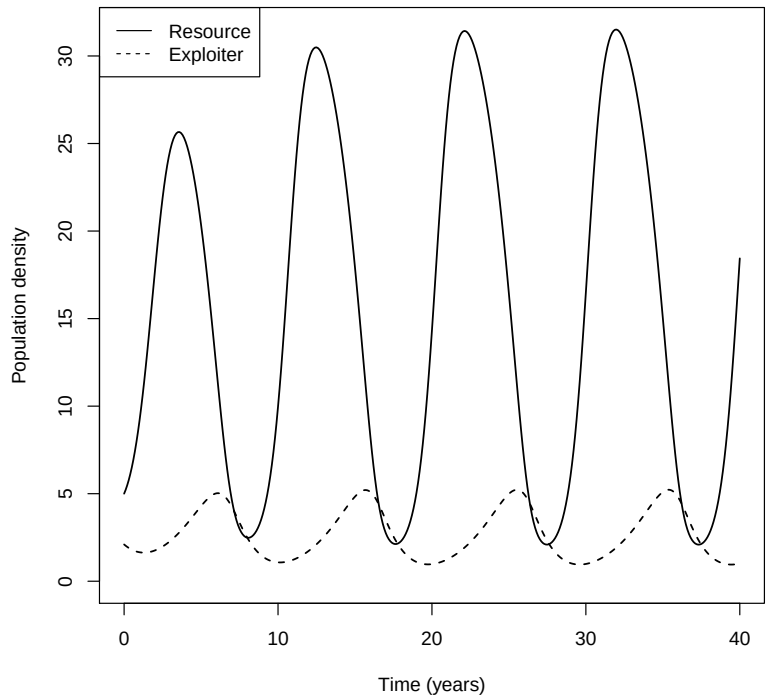

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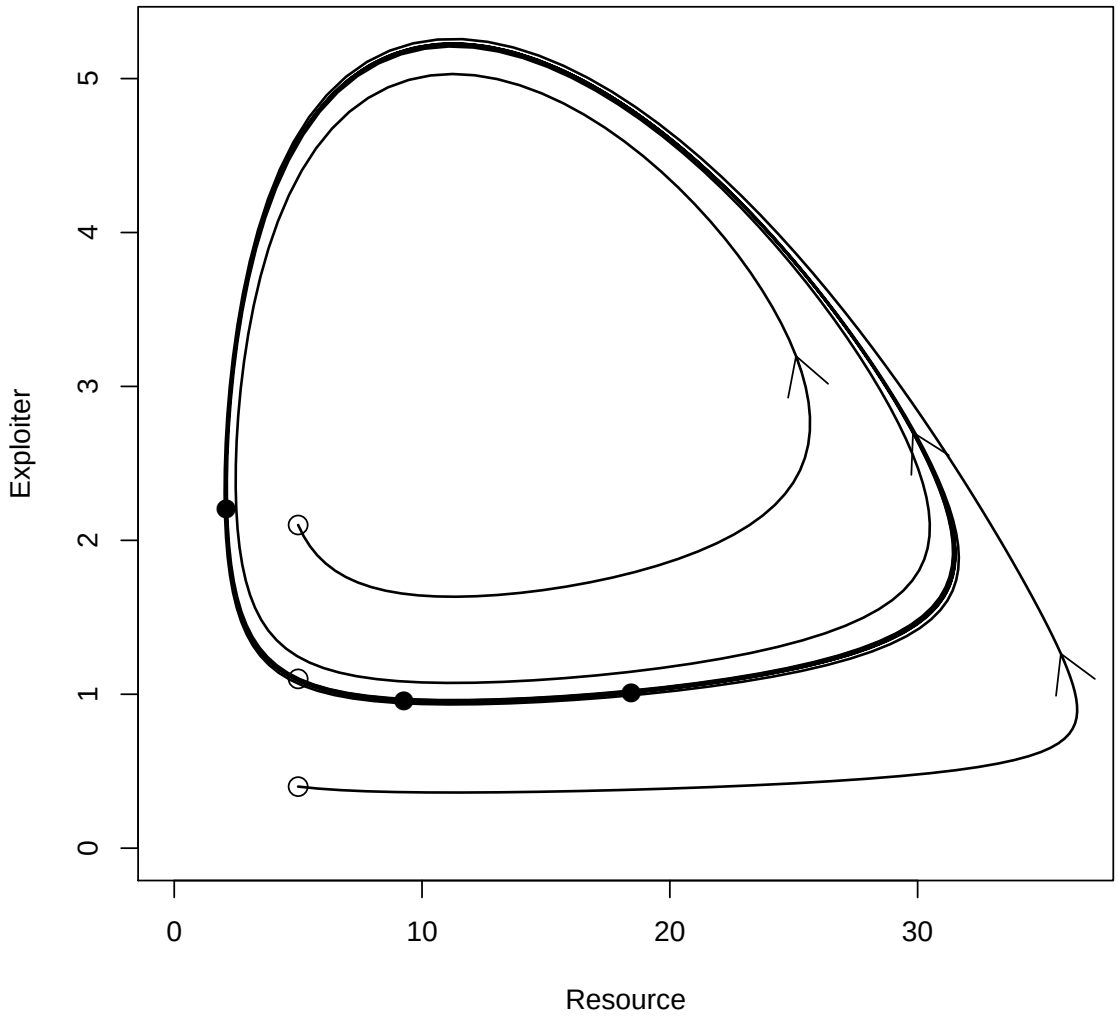

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Subsection 1

More detailed models

How do populations affect their own growth rates?

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Outline

Introduction
- Balance and equilibrium
- Tendency to oscillate

Models
- More detailed models

Equilibrium and balance
- Reciprocal control
- More detailed models
- Who controls whom?

Examples
- Oscillation
- Harvesting examples

Subsection 1

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People and the ocean

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Subsection 2

More detailed models

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Subsection 3

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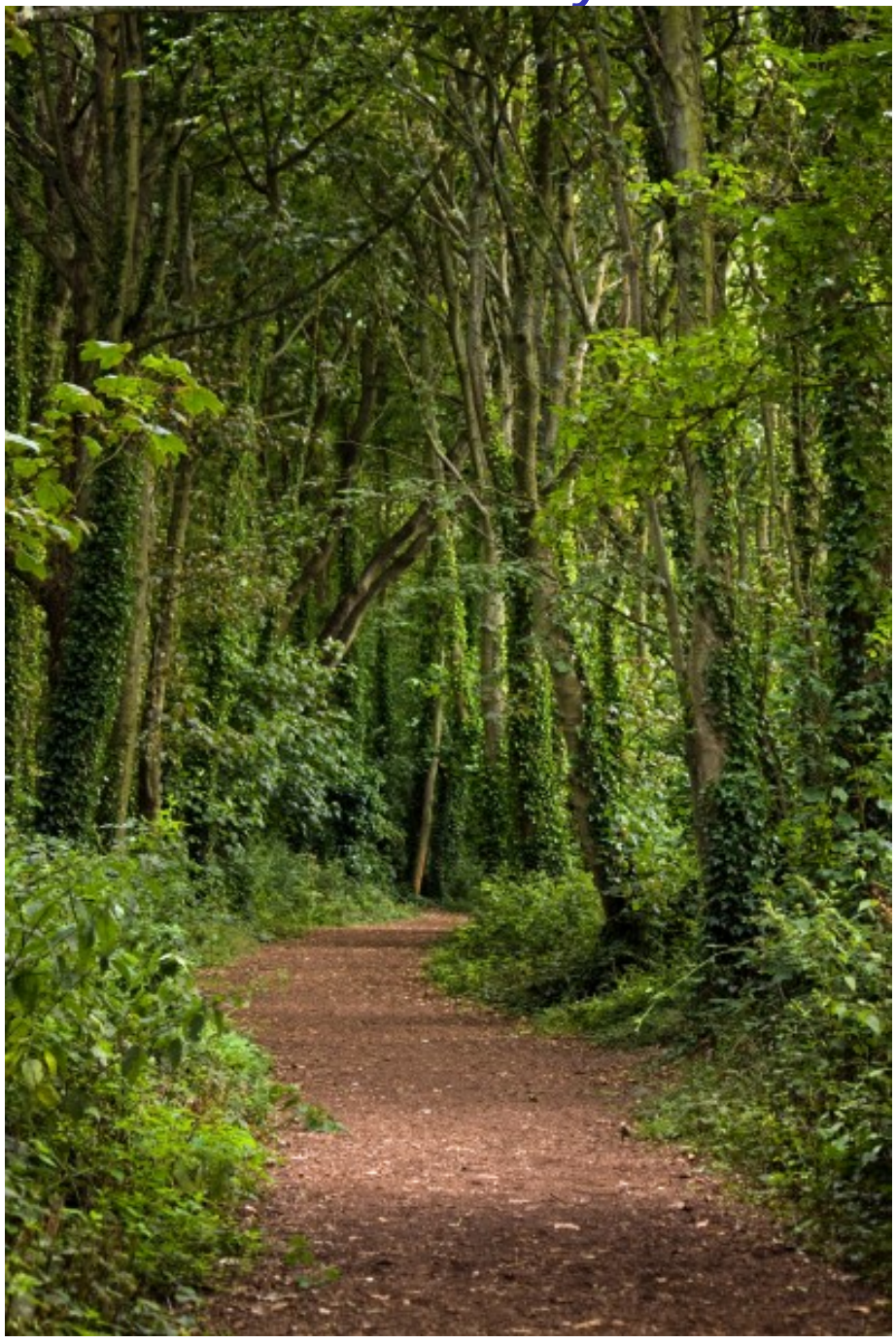

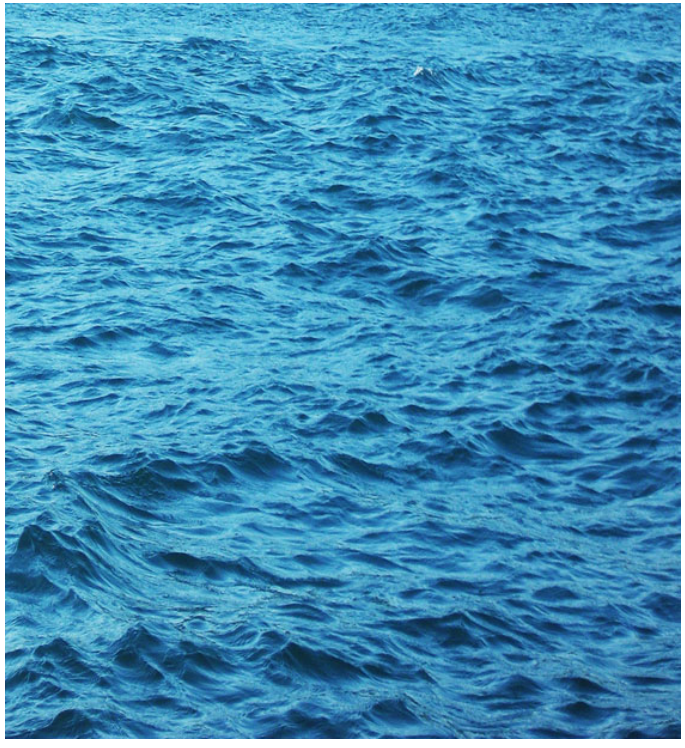

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Outline

Introduction
- Balance and equilibrium
- Tendency to oscillate

Models
- More detailed models

Equilibrium and balance
- Reciprocal control
- More detailed models
- Who controls whom?

Examples
- Oscillation
- Harvesting examples

Subsection 1

Oscillation

Simplest model

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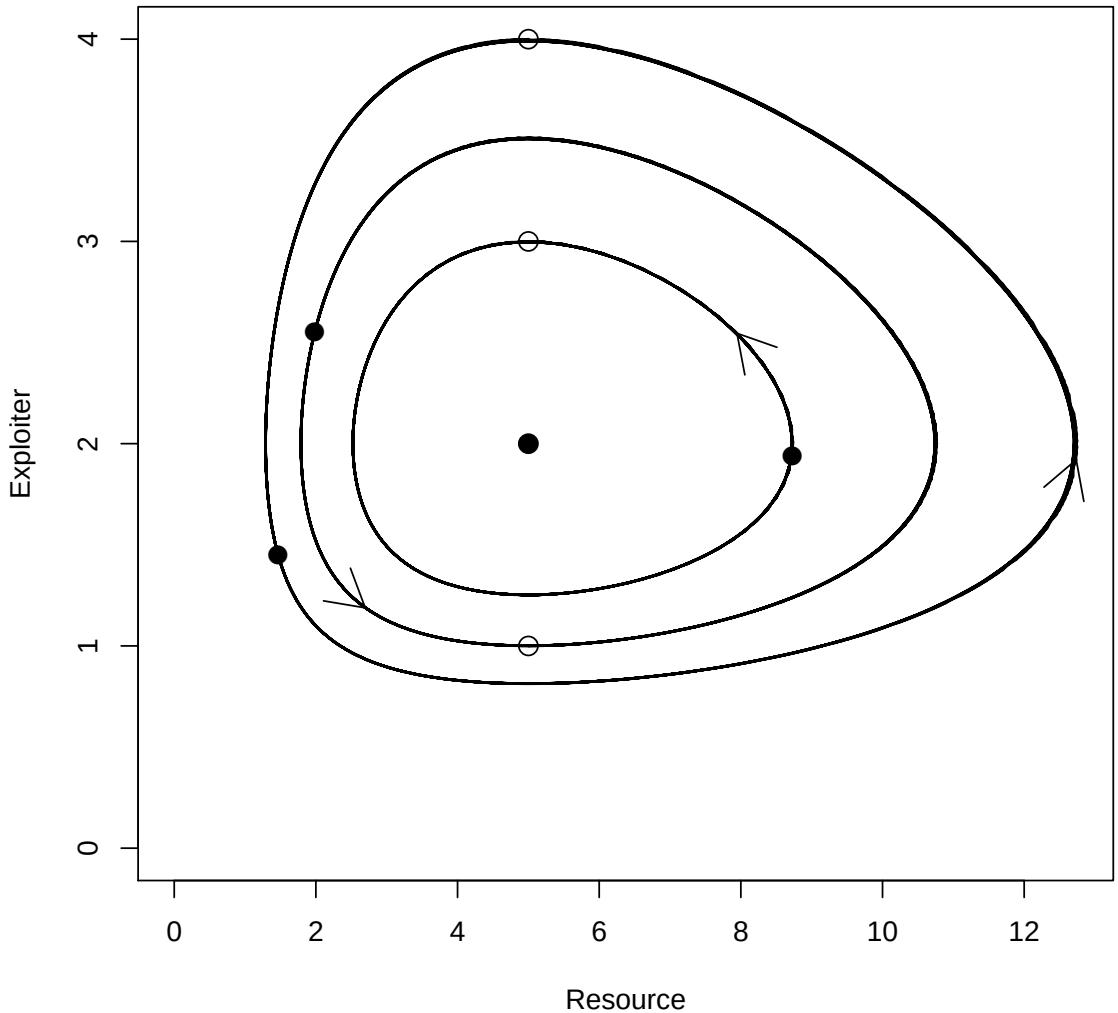

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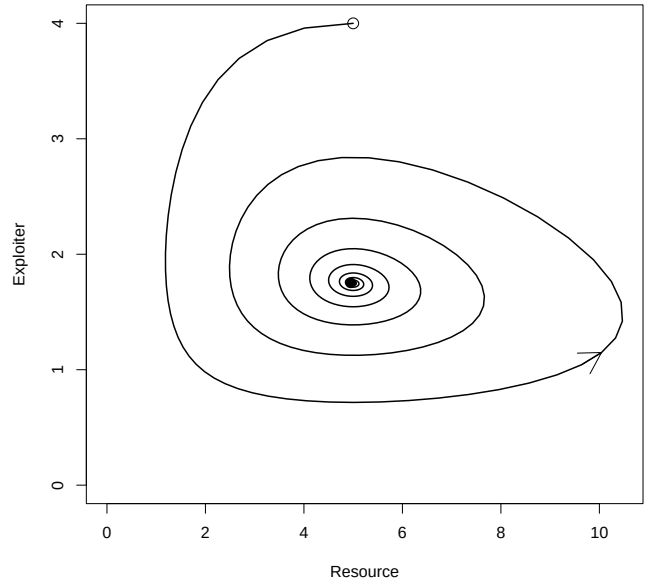

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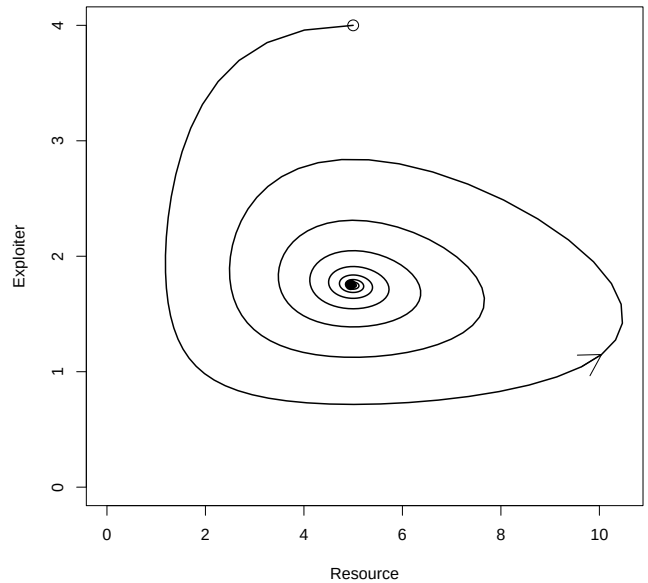

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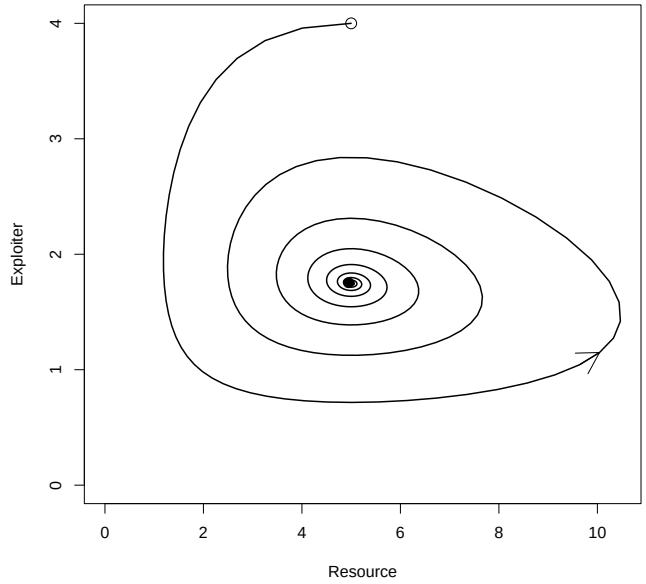

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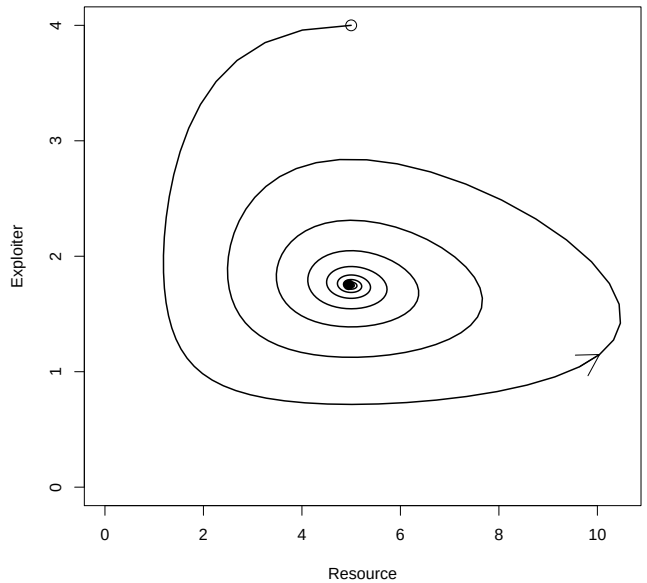

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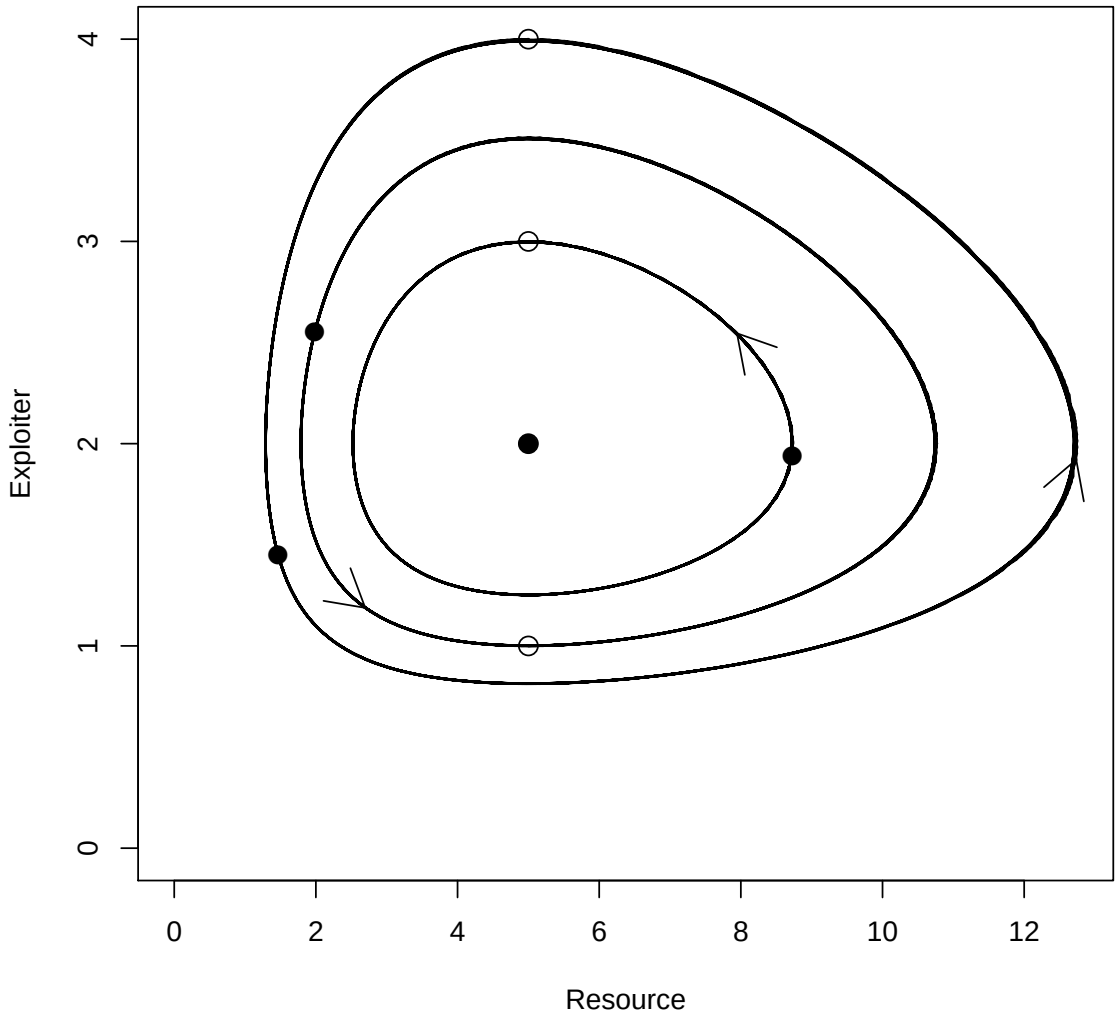

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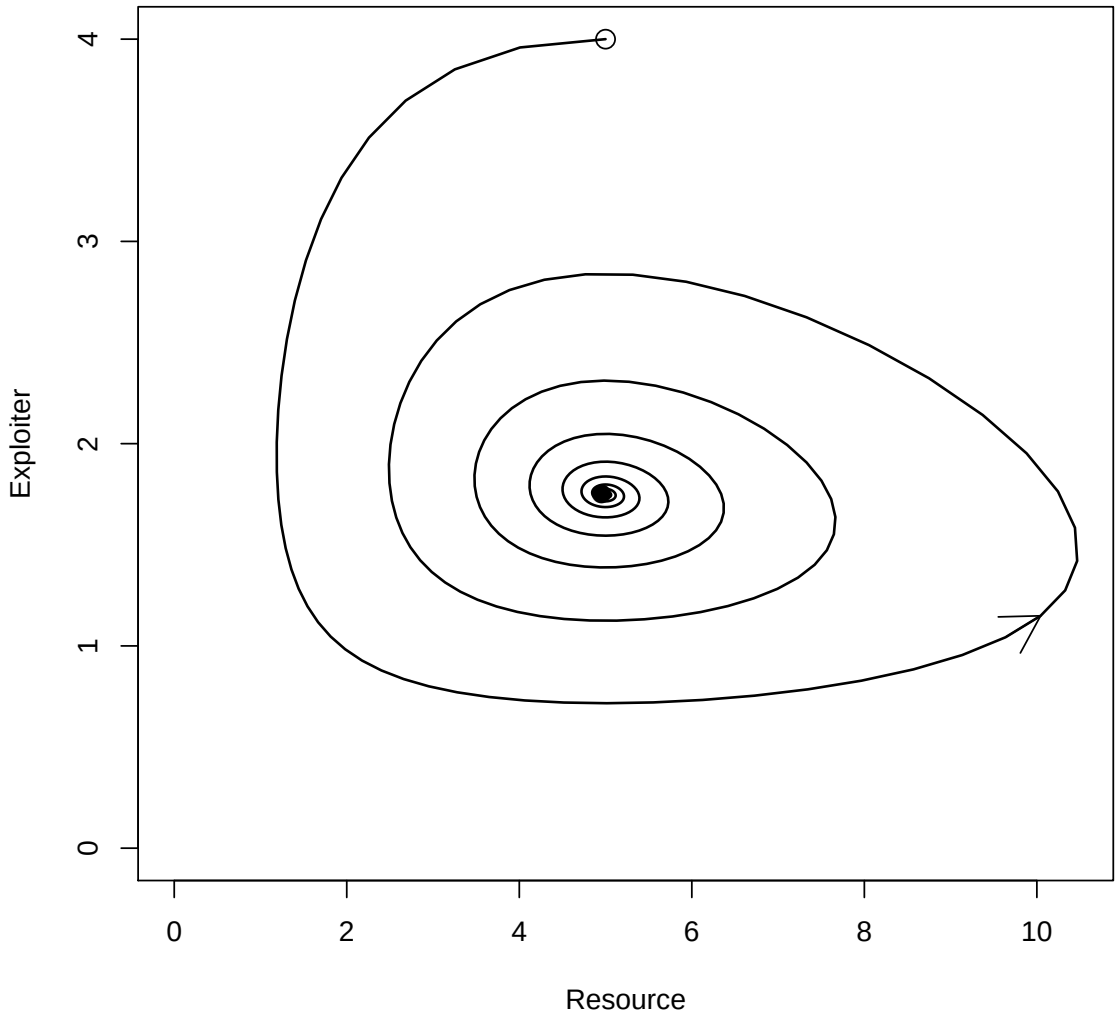

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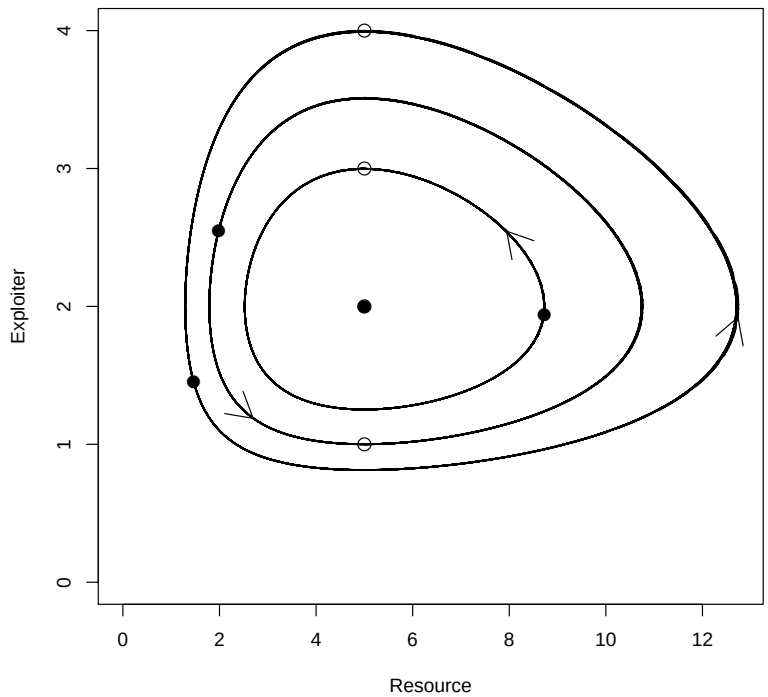

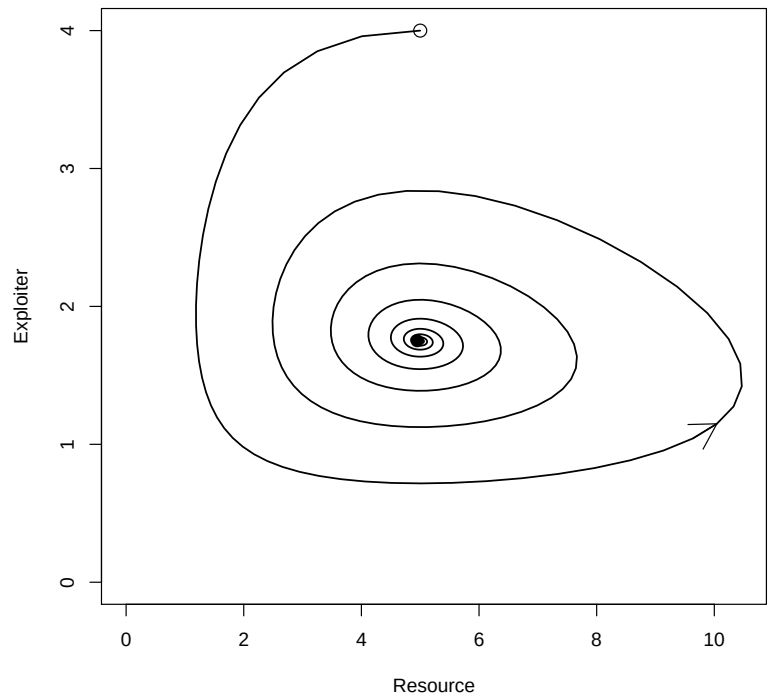

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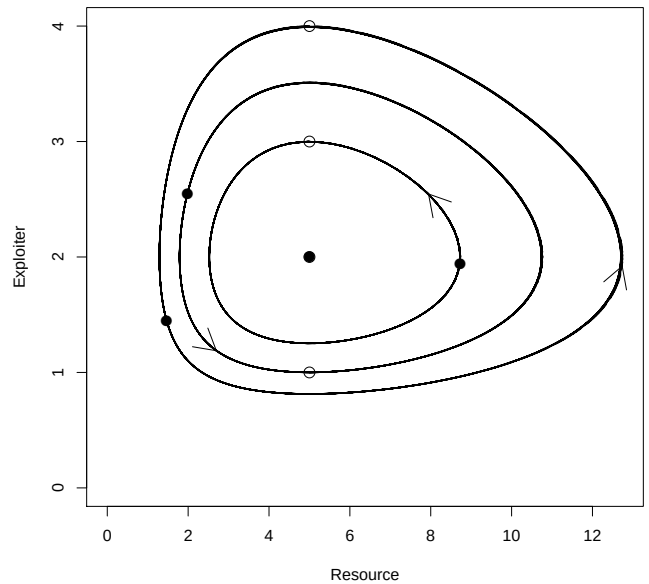

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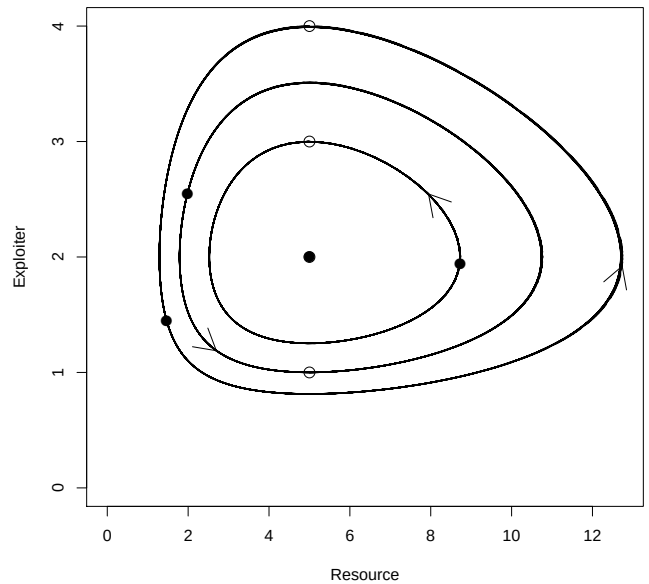

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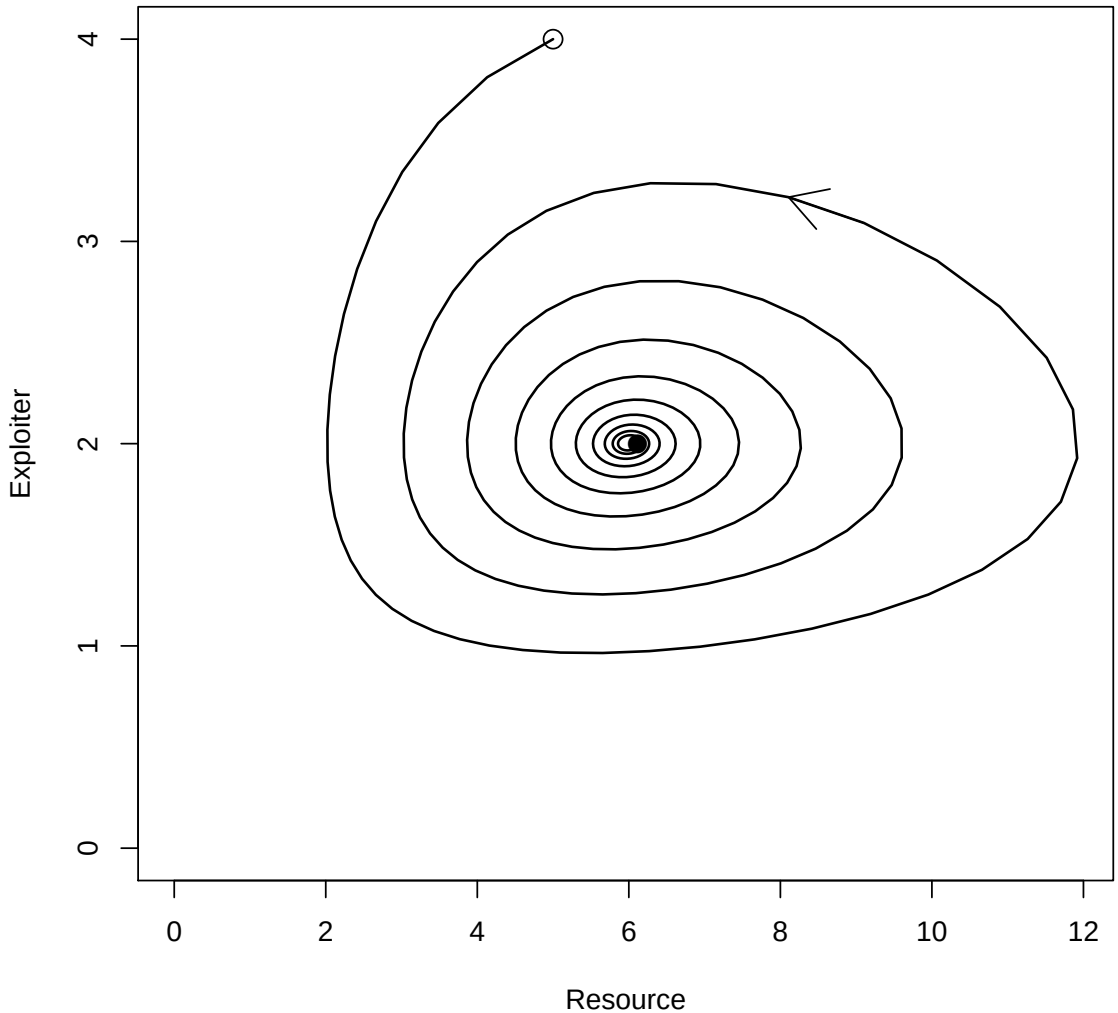

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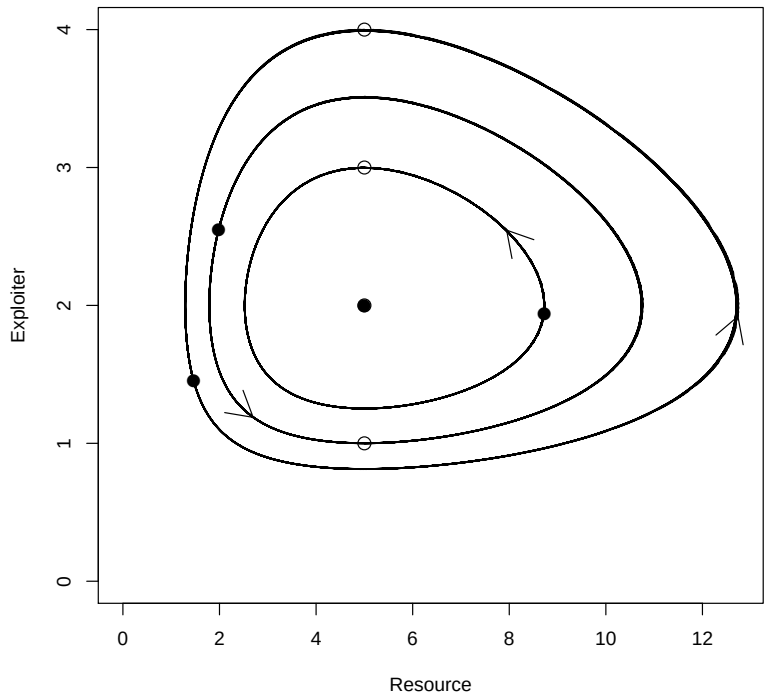

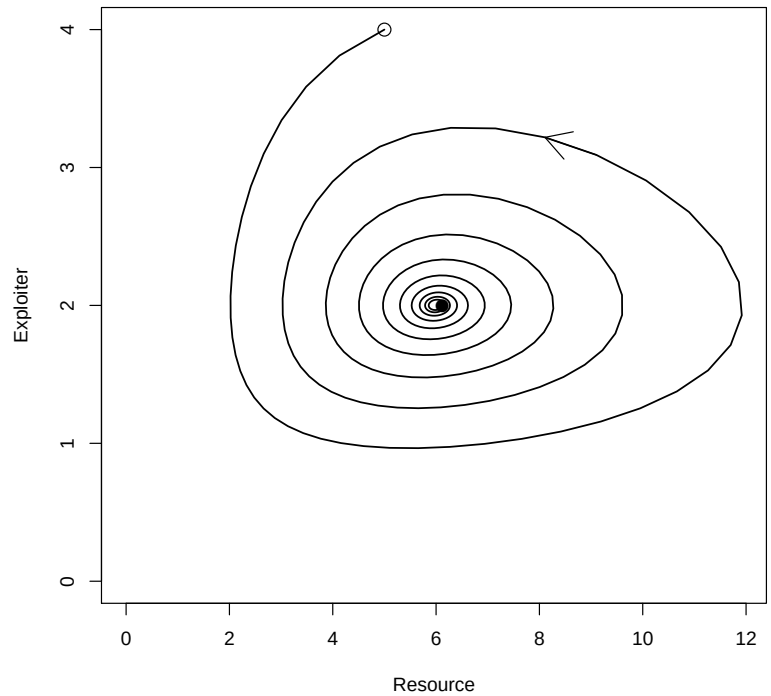

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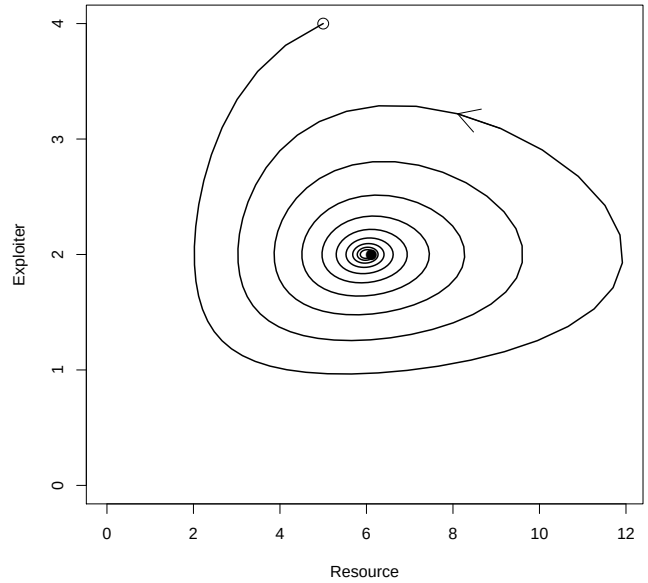

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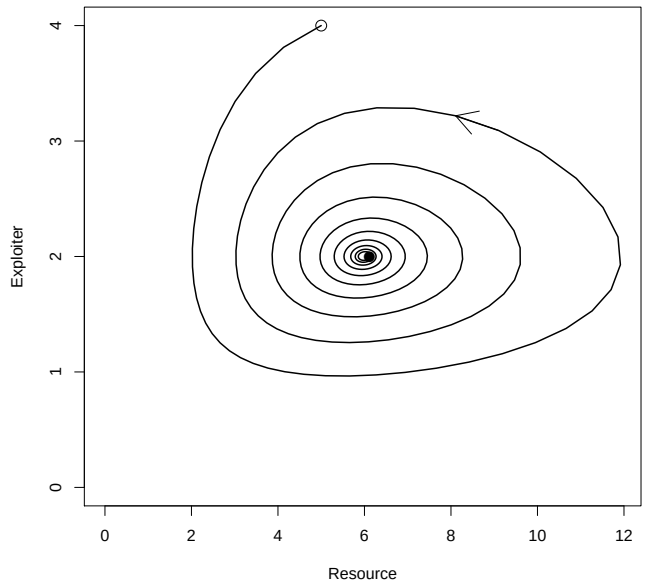

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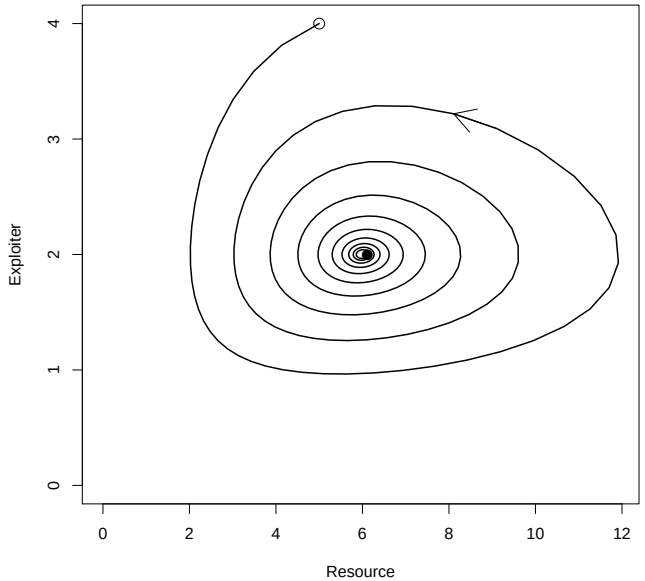

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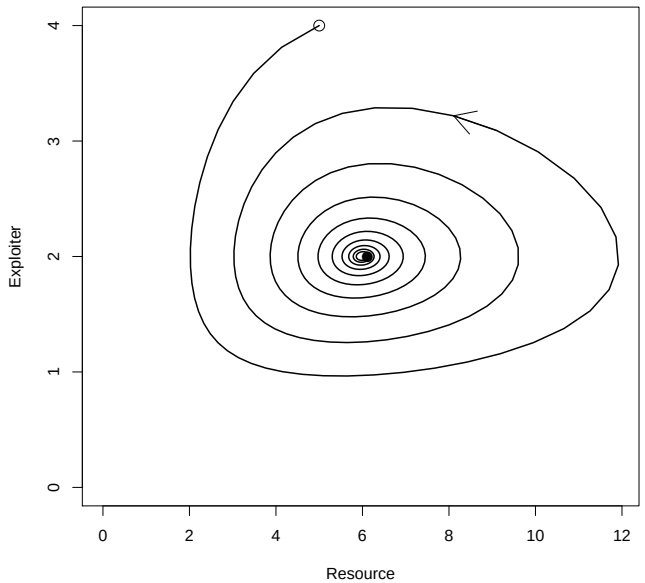

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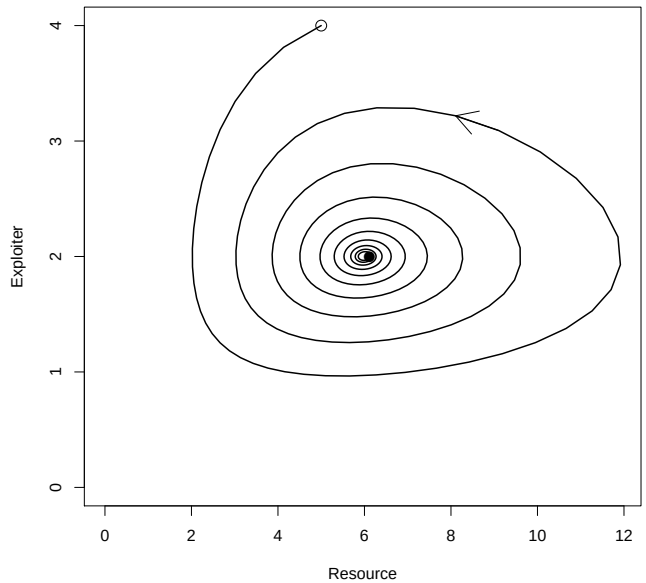

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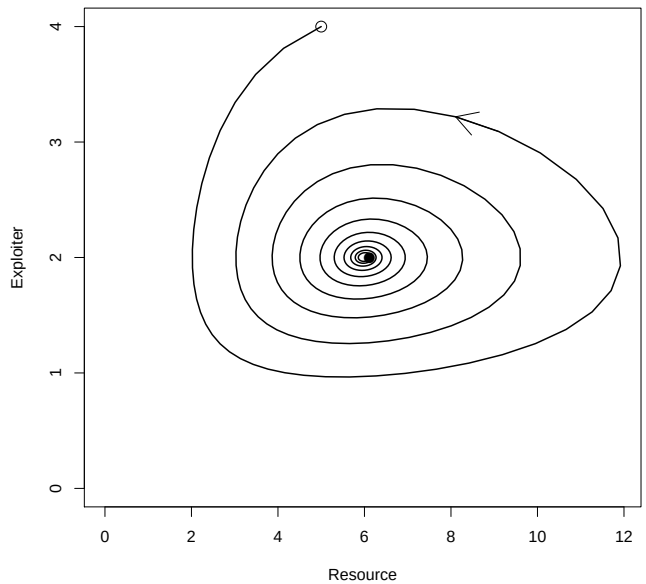

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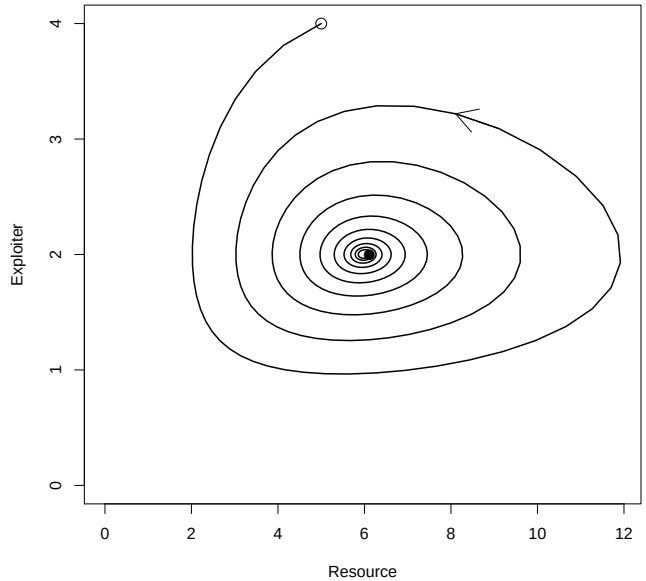

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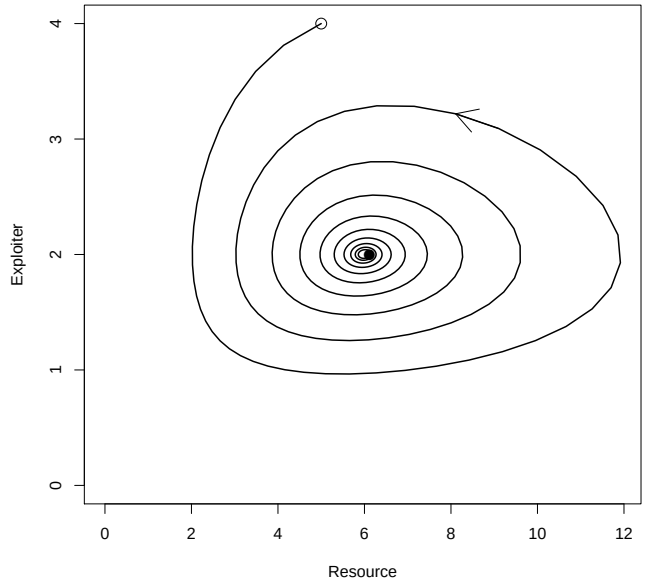

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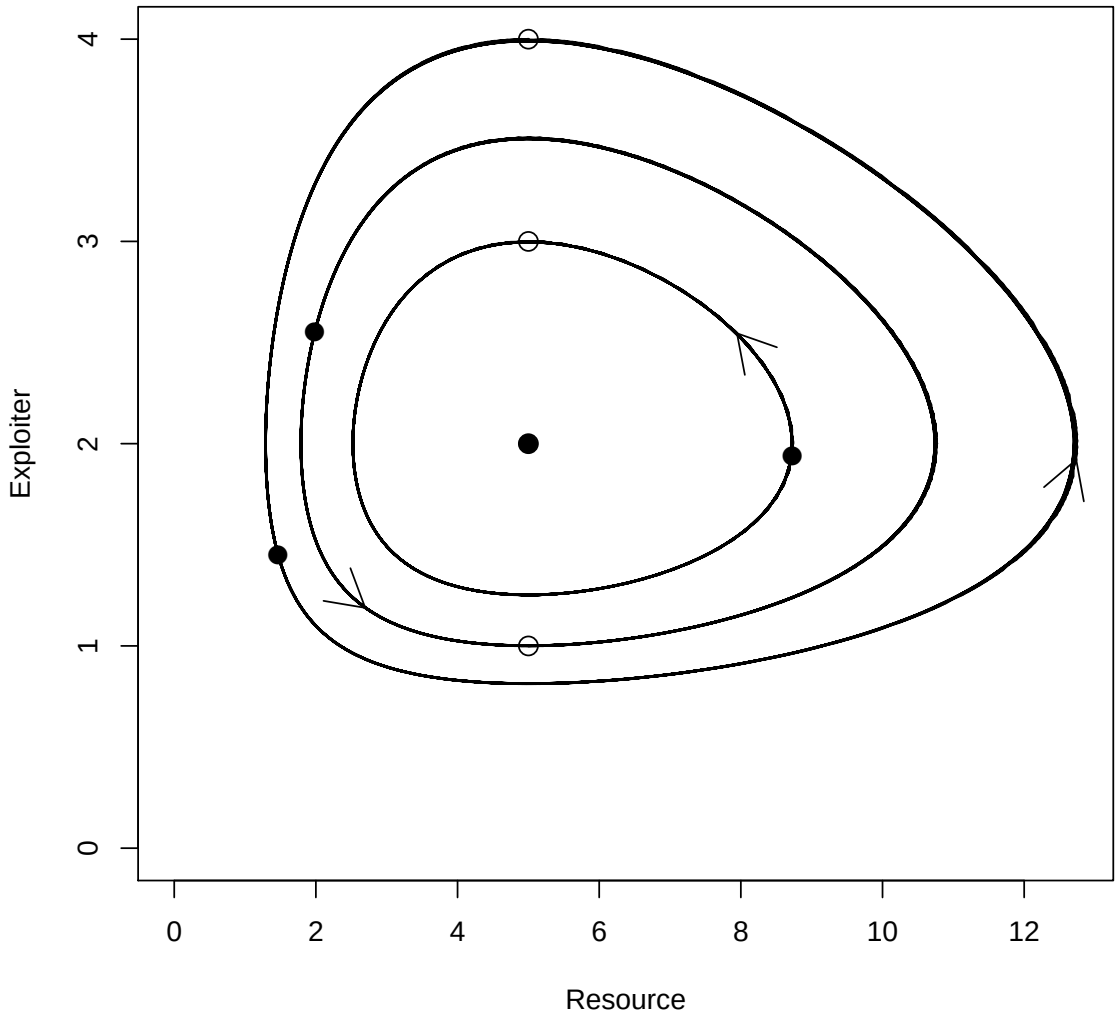

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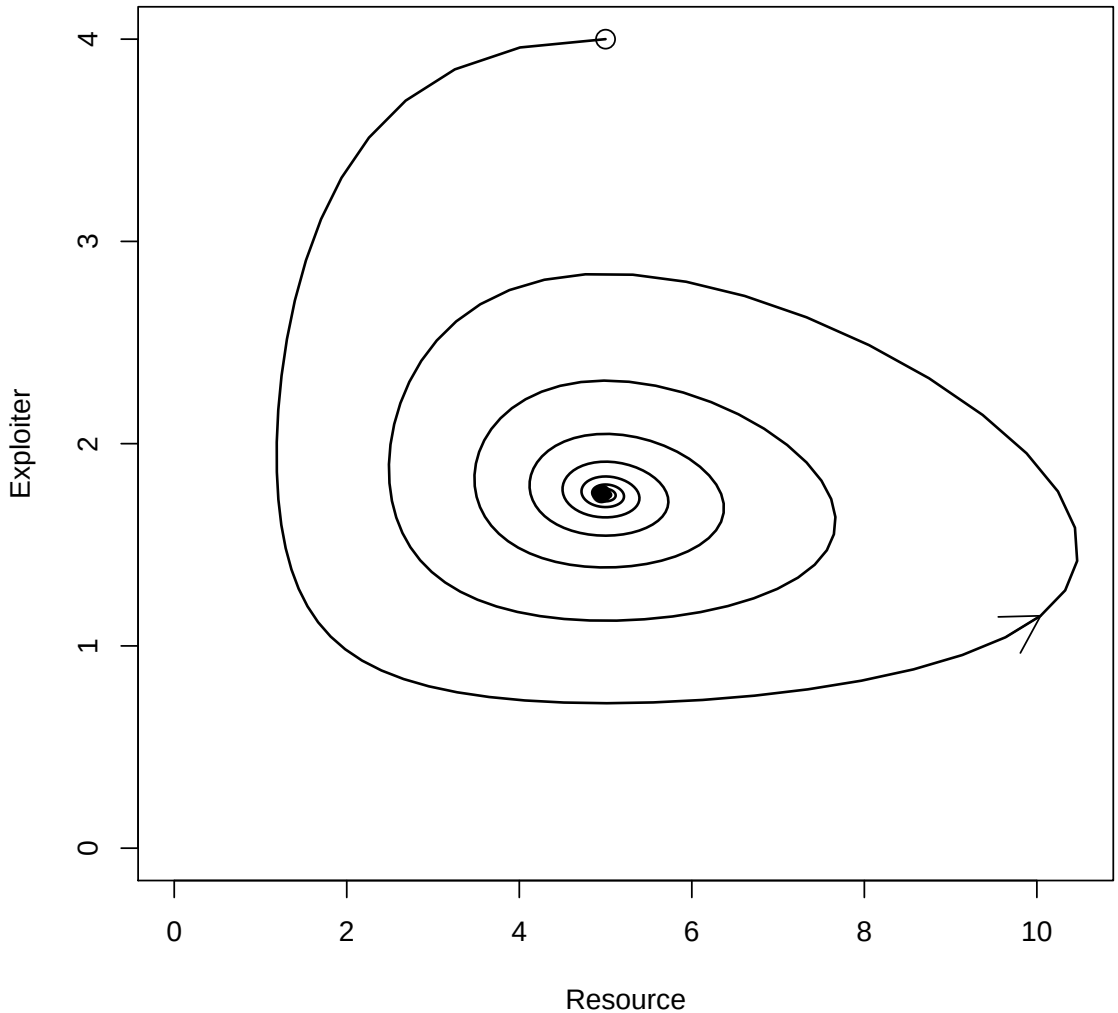

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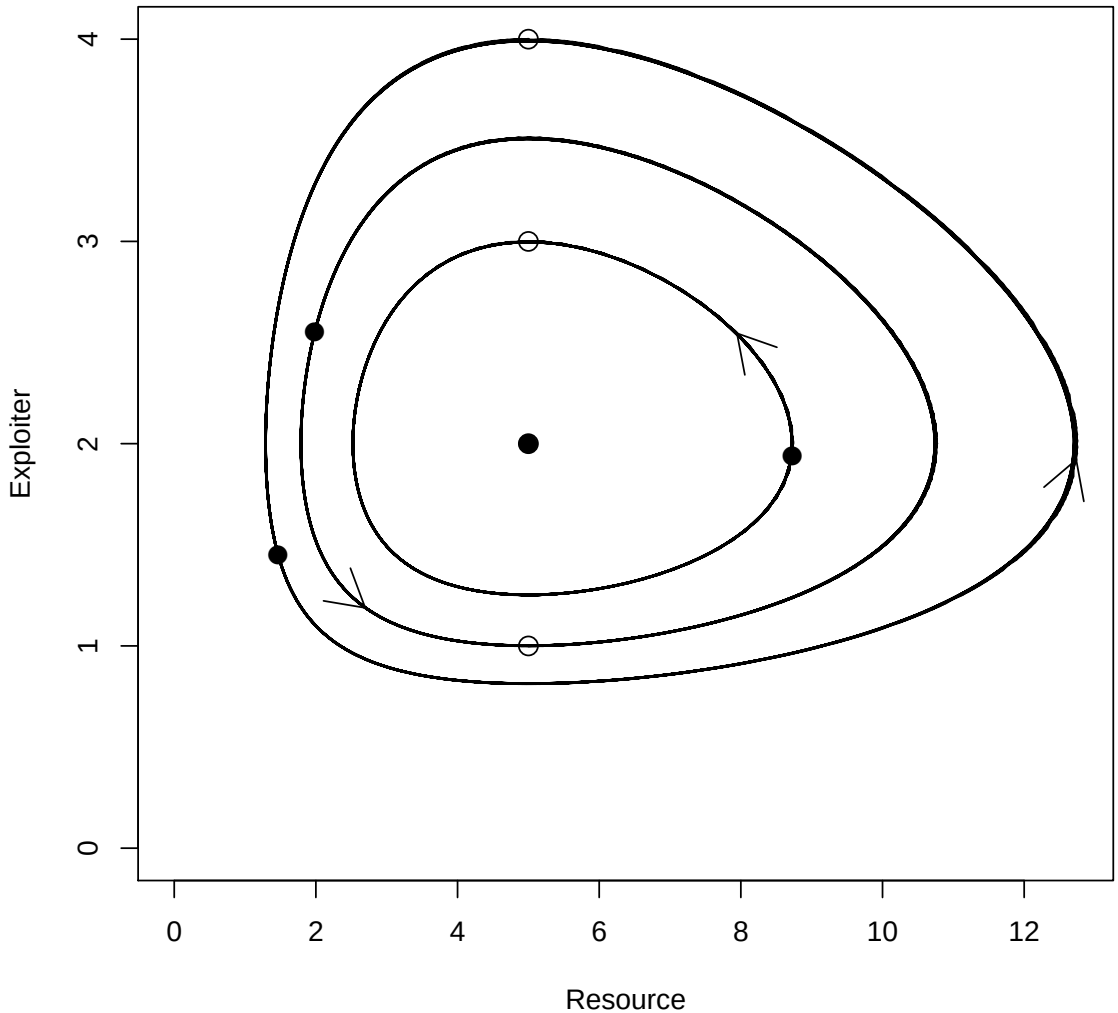

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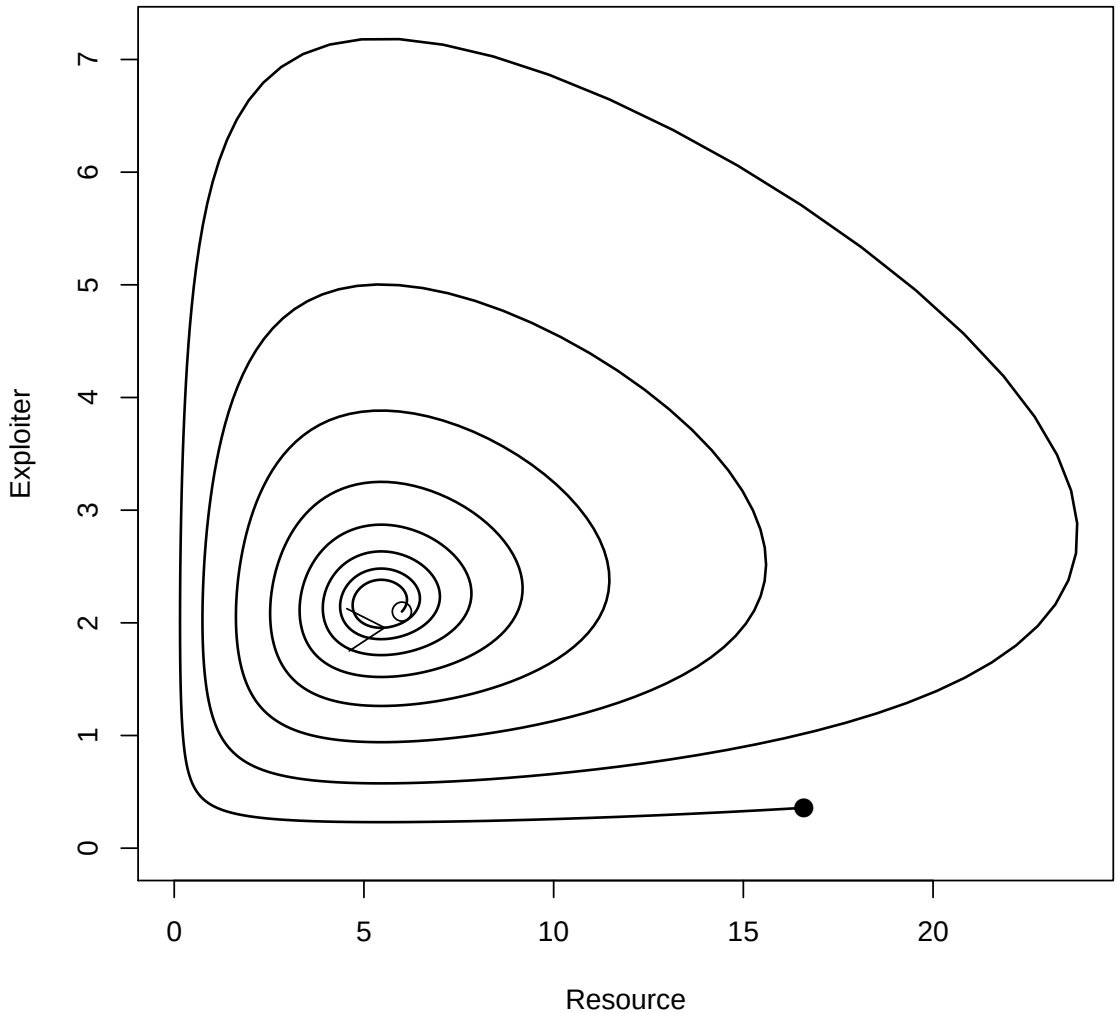

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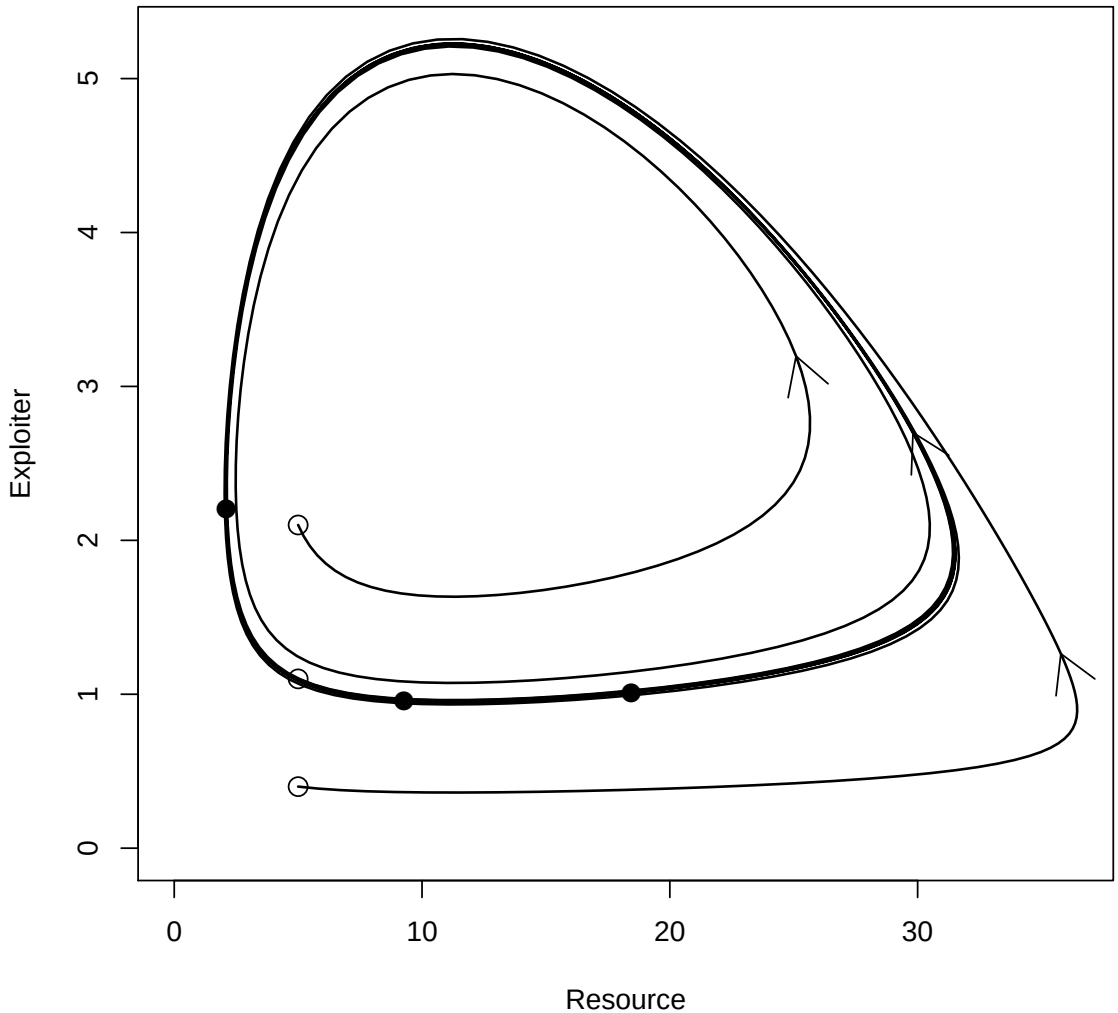

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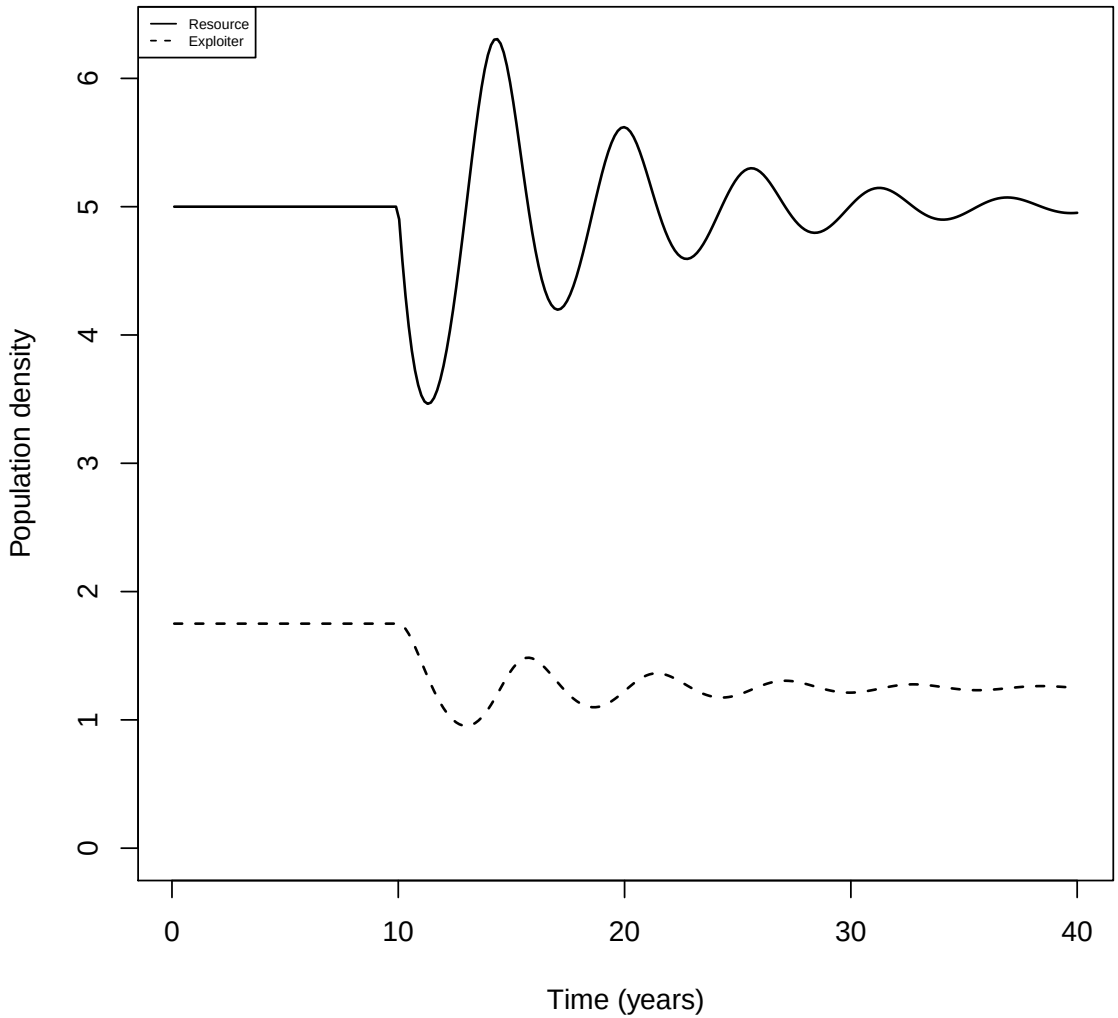
  - * First we get more grouse, then we get more foxes, then we get less grouse, . . .
- Poll: What happens *eventually* in this model if I start feeding grouse?
  - * Population eventually approaches (or orbits around) a new *equilibrium*, with more foxes, and the same amount of grouse as before

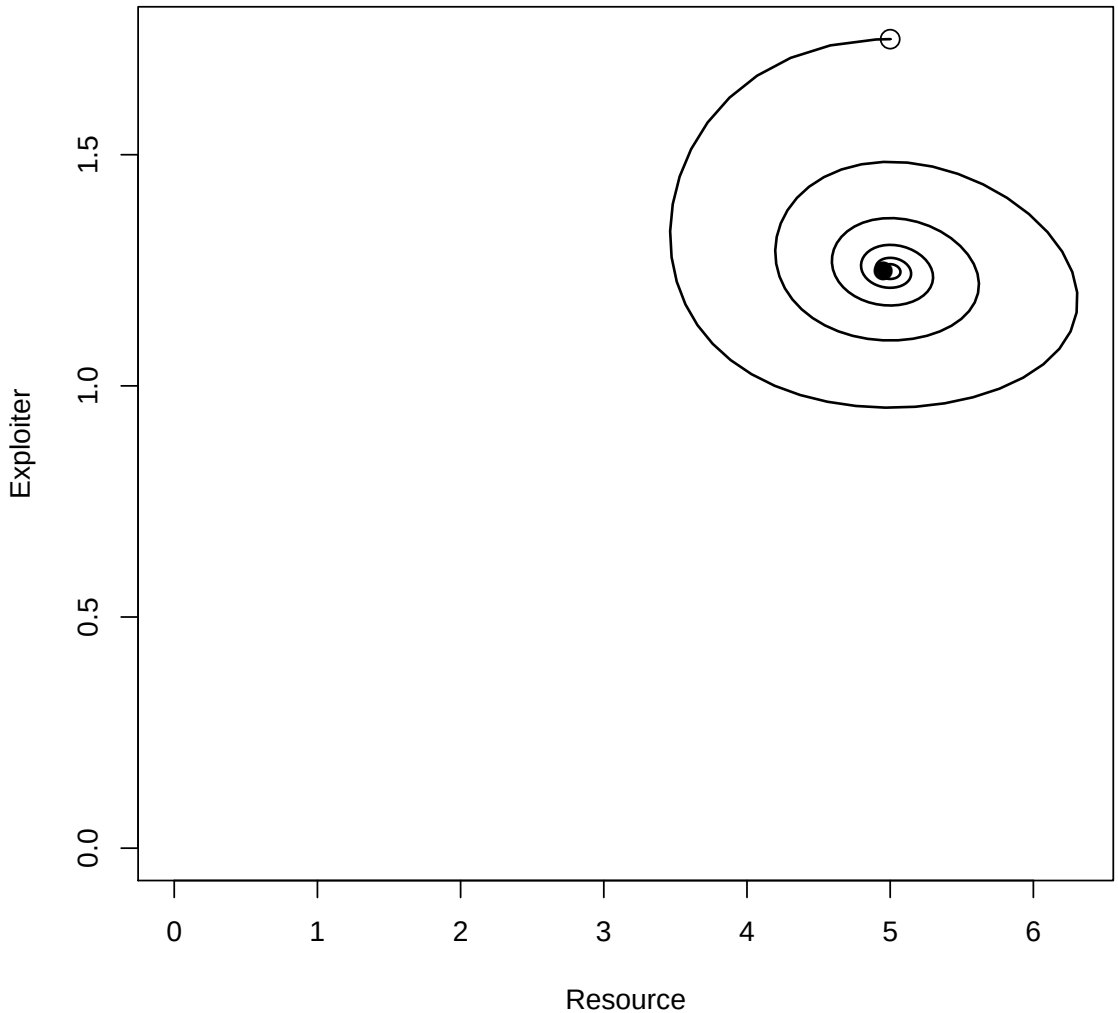
Harvesting examples

- Is reciprocal control realistic?
  - In the long term, catching fish isn't bad for fish populations? Feeding grouse doesn't improve long-term grouse populations?
- Poll: What happens *first* in this model if I start feeding grouse?
  - * First we get more grouse, then we get more foxes, then we get less grouse, . . .
- Poll: What happens *eventually* in this model if I start feeding grouse?
  - * Population eventually approaches (or orbits around) a new *equilibrium*, with more foxes, and the same amount of grouse as before

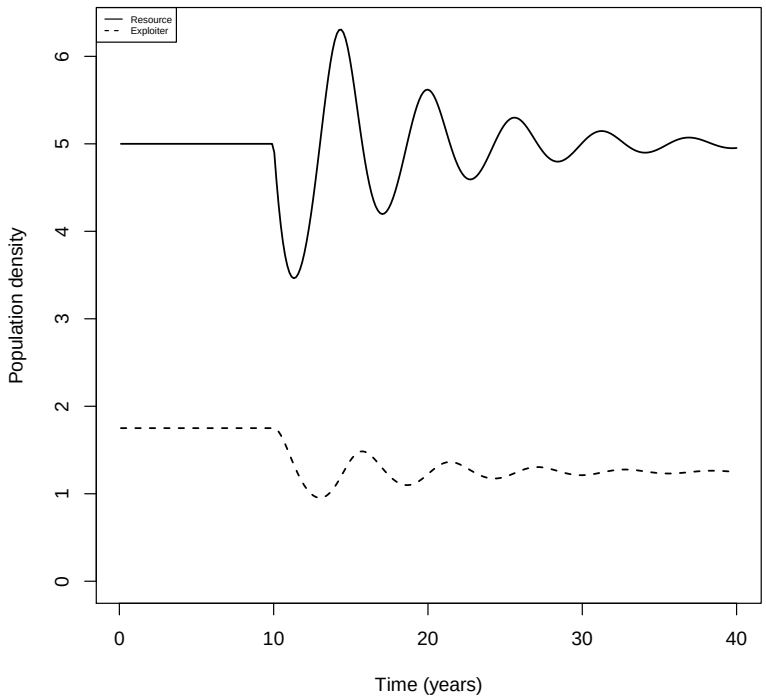
Harvesting dynamics

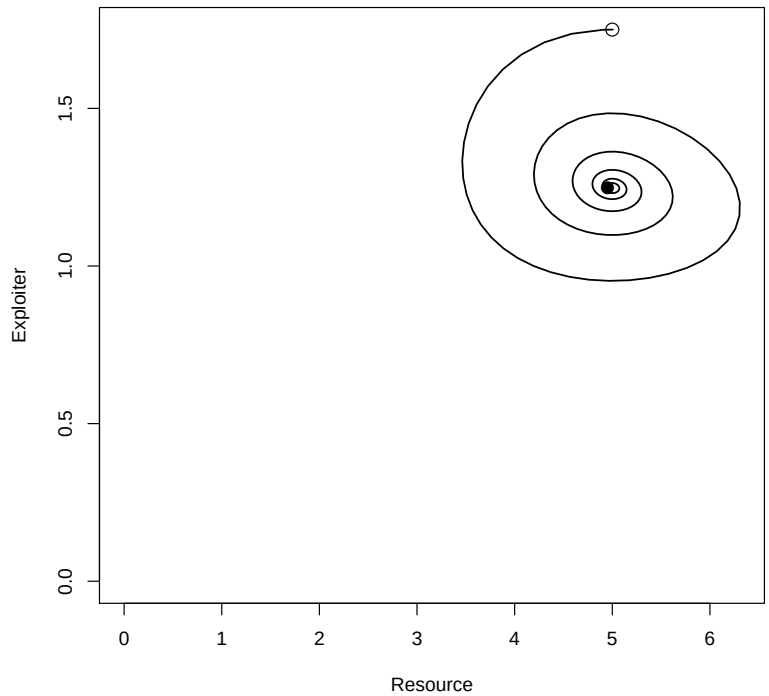


Harvesting dynamics

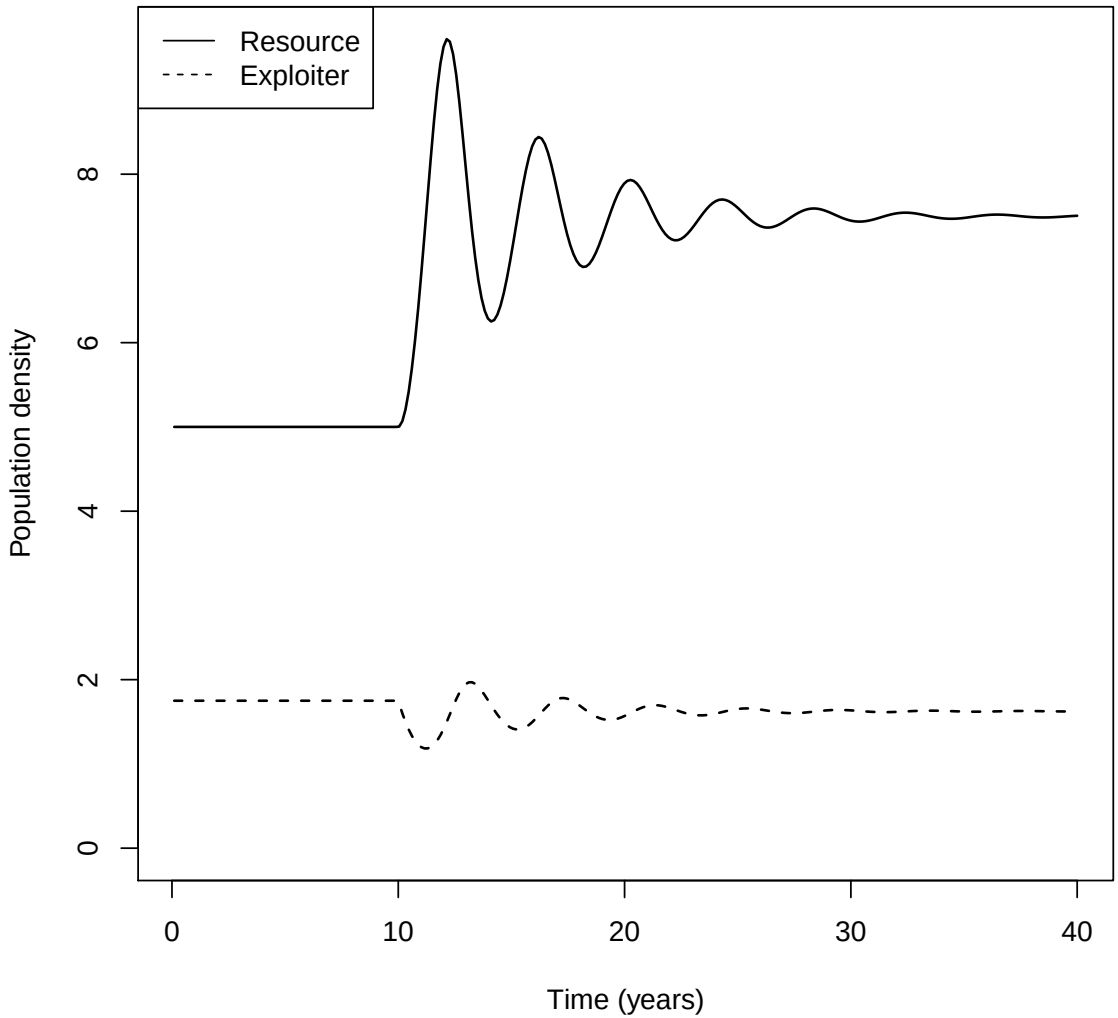


Harvesting dynamics

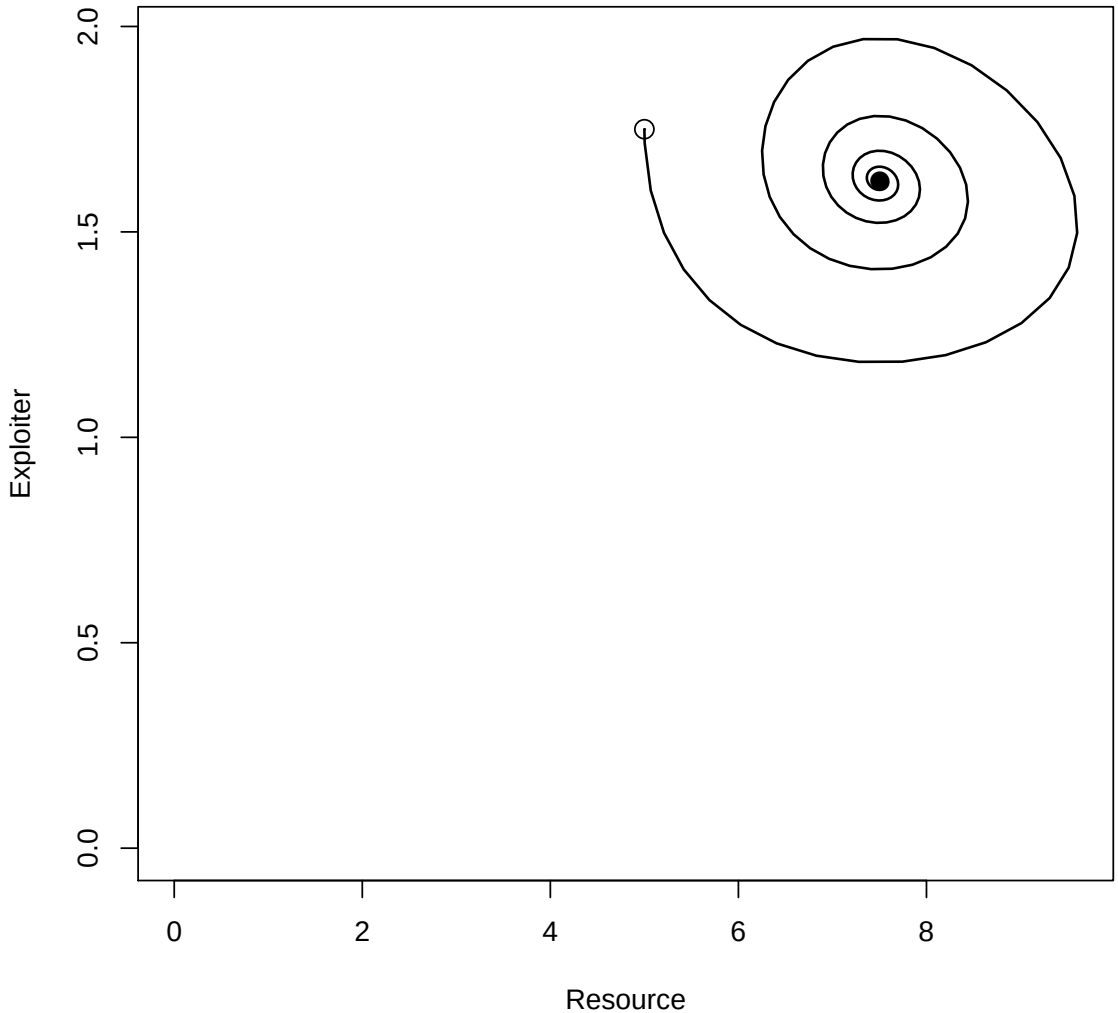




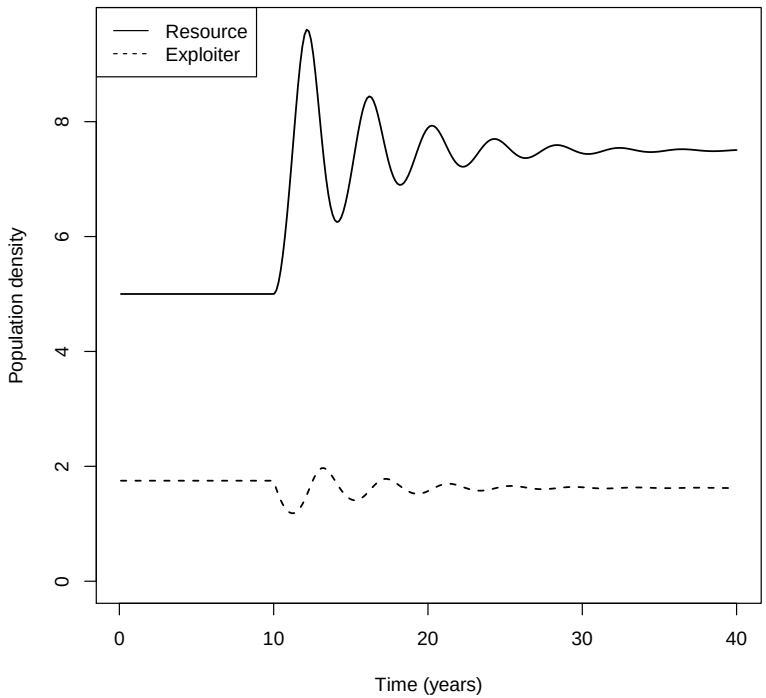
Harvesting dynamics

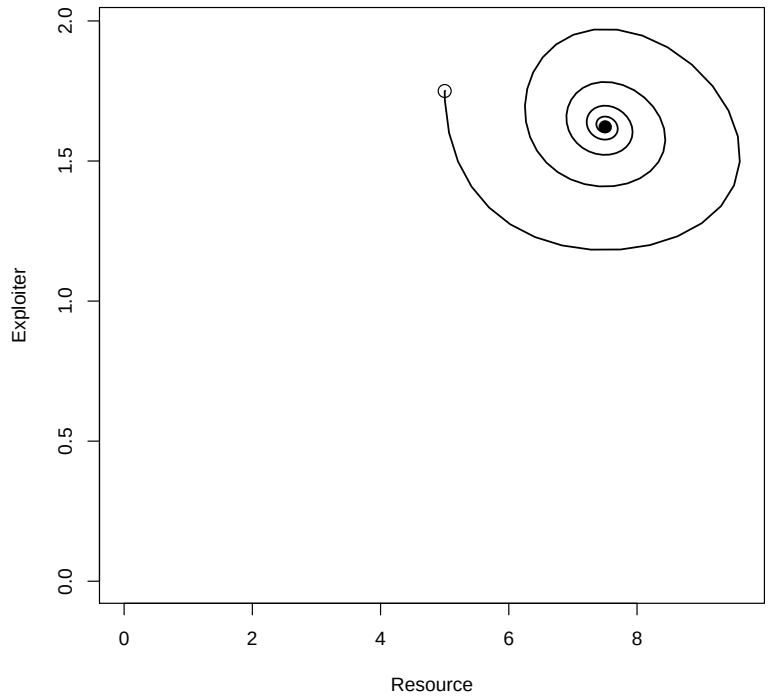


Harvesting dynamics

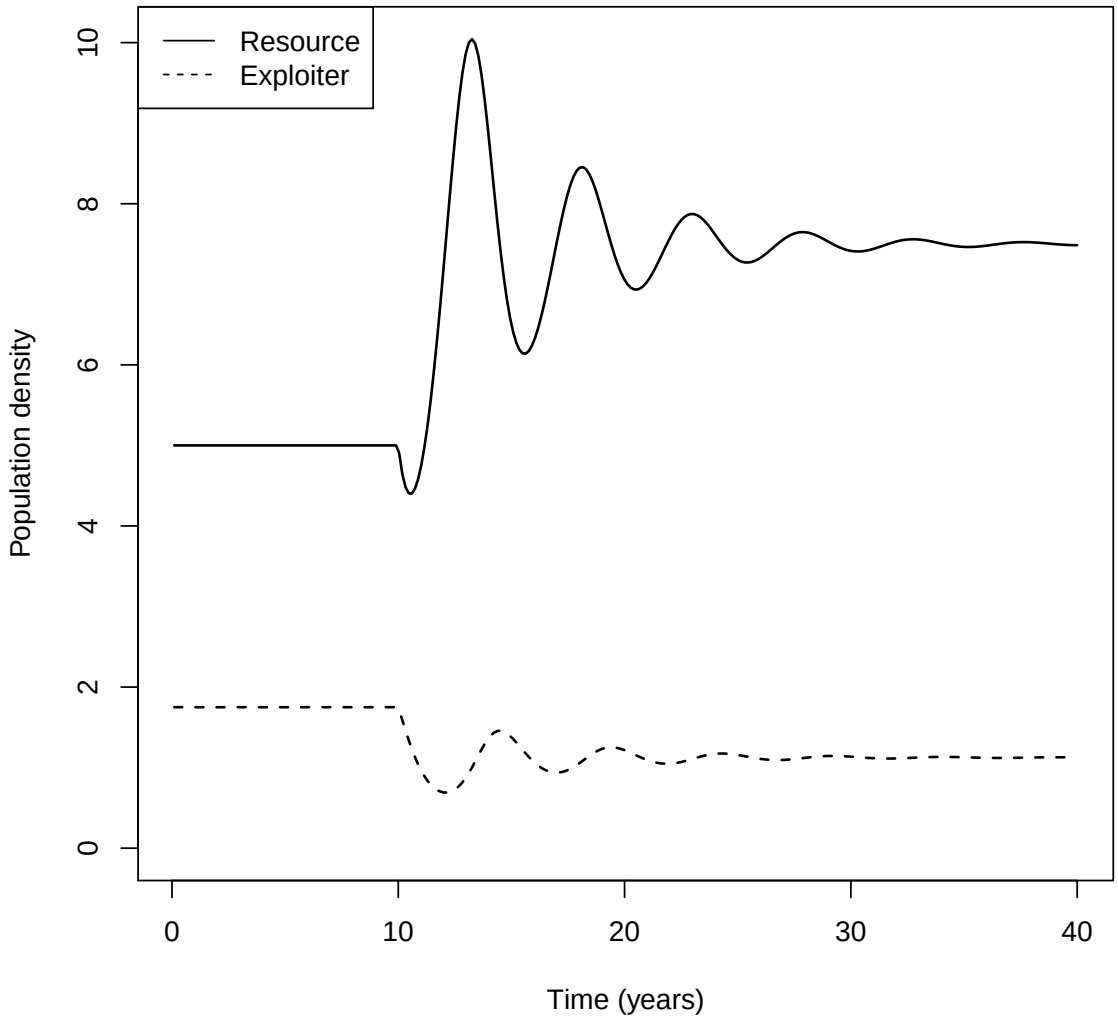


Harvesting dynamics

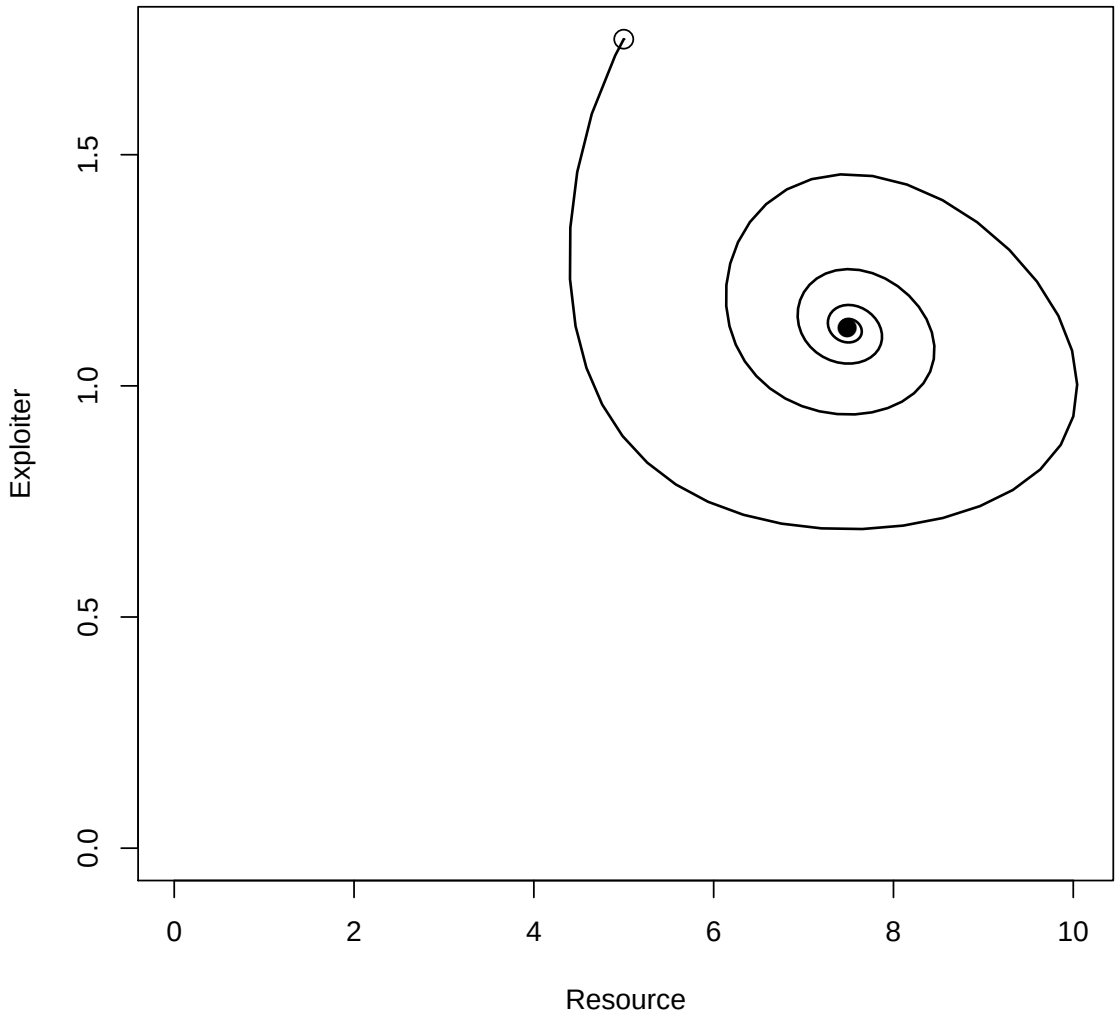
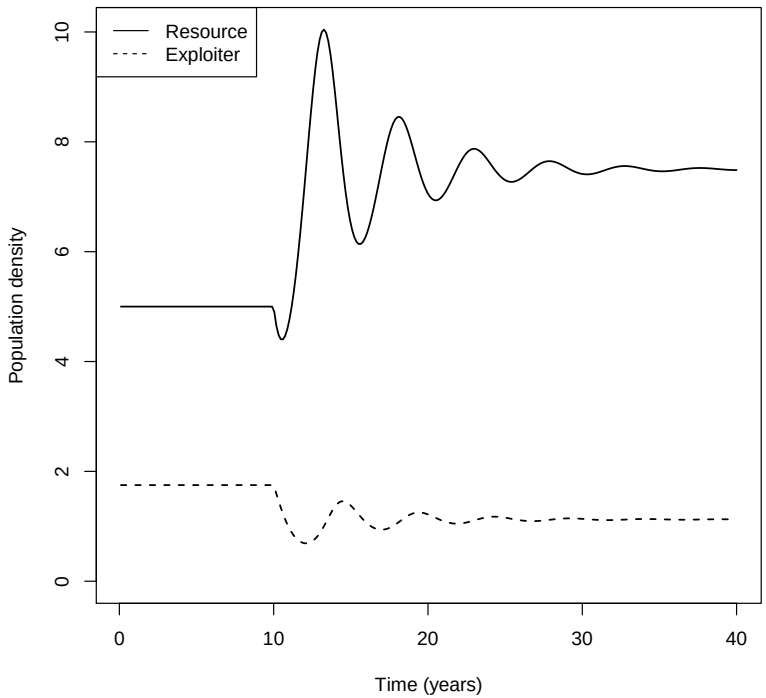
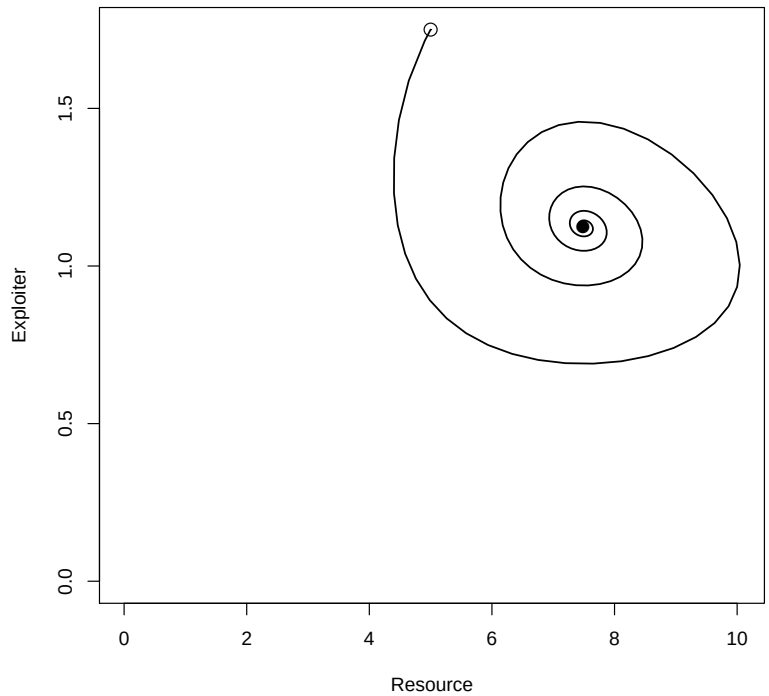




Harvesting dynamics



Harvesting dynamics



Harvesting dynamics