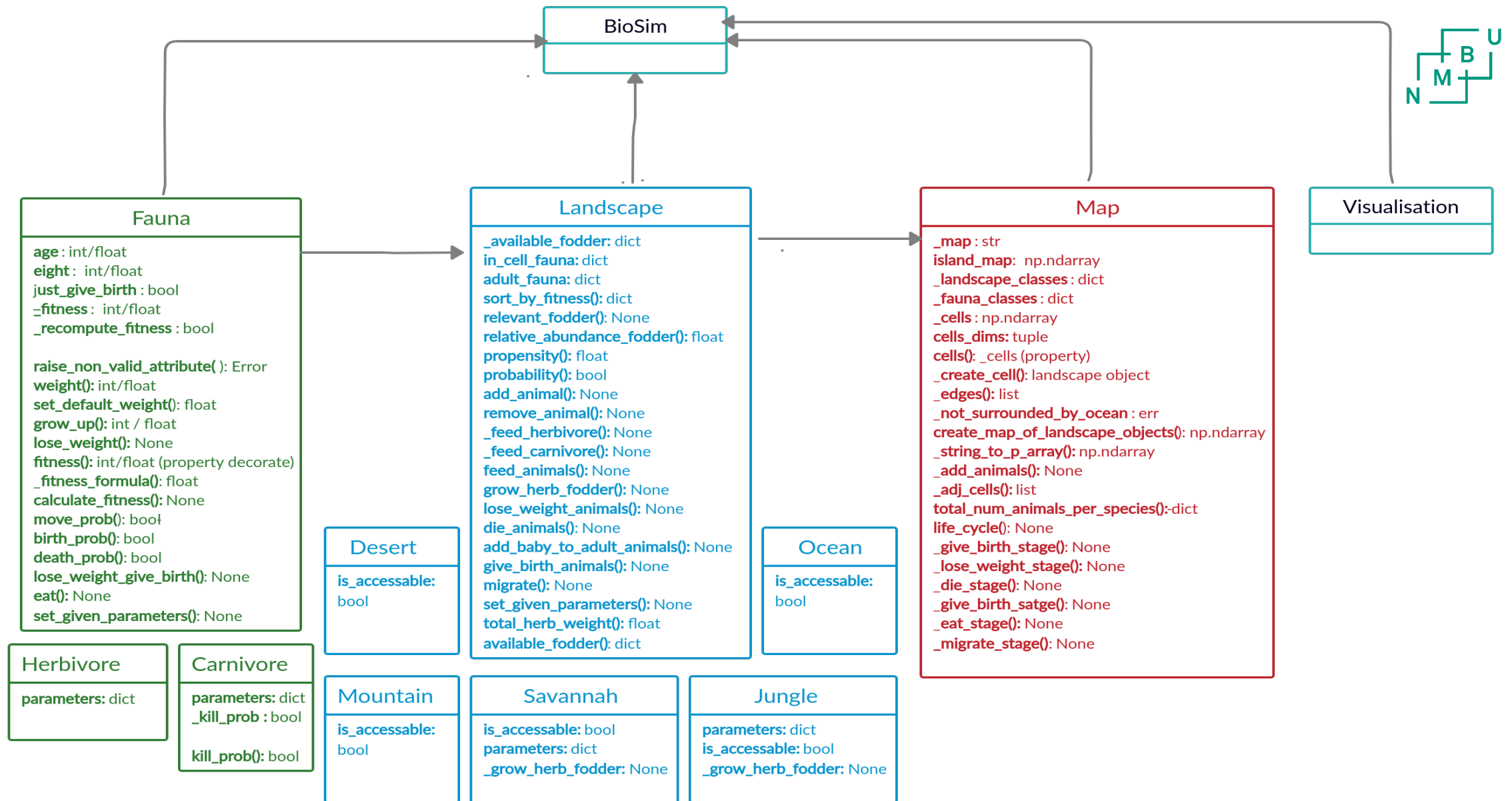


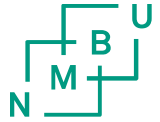
Norwegian University  
of Life Sciences

# Modelling of Ecosystem of Rossumøya

Mohamed Radwan, Nasibeh Mohammadi

Group 26





# Github Issues

<input type="checkbox"/>	<b>7 Open</b> ✓ 37 Closed
<input type="checkbox"/>	<b>fix latex issue in documentation</b> #45 opened 15 days ago by mhmdrdwn
<input type="checkbox"/>	<b>add equations using latex code</b> #44 opened 15 days ago by mhmdrdwn
<input type="checkbox"/>	<b>Gaussian ditrsibution tests</b> #39 opened 17 days ago by mhmdrdwn
<input type="checkbox"/>	<b>serialization</b> #24 opened 18 days ago by mhmdrdwn
<input type="checkbox"/>	<b>GUI</b> #22 opened 18 days ago by mhmdrdwn
<input type="checkbox"/>	<b>Parallisation</b> #21 opened 18 days ago by mhmdrdwn
<input type="checkbox"/>	<b>Optimisation</b> #20 opened 18 days ago by mhmdrdwn

<input type="checkbox"/>	<b>migration</b> #49 by mhmdrdwn was closed 11 days ago
<input type="checkbox"/>	<b>initial map class</b> #47 by nasibehm was closed 14 days ago
<input type="checkbox"/>	<b>further fauna tests</b> #42 by mhmdrdwn was closed 9 days ago
<input type="checkbox"/>	<b>exclusively meaning</b> #40 by mhmdrdwn was closed 11 days ago
<input type="checkbox"/>	<b>all landscapes functions tests</b> #35 by mhmdrdwn was closed 9 days ago
<input type="checkbox"/>	<b>landscapes common methods tests</b> #34 by mhmdrdwn was closed 9 days ago
<input type="checkbox"/>	<b>herbevores methods tests</b> #33 by mhmdrdwn was closed 9 days ago
<input type="checkbox"/>	<b>carnivores methods tests</b> #32 by mhmdrdwn was closed 9 days ago
<input type="checkbox"/>	<b>animals common methods tests</b> #31 by mhmdrdwn was closed 9 days ago
<input type="checkbox"/>	<b>optimal code over enough modules</b> #30 by mhmdrdwn was closed 1 minute ago
<input type="checkbox"/>	<b>Modules are ok</b> #29 by mhmdrdwn was closed 1 minute ago
<input type="checkbox"/>	<b>parameters</b>

## Extra Work

- DRY (Don't Repeat Yourself) and don't WET (Waste Everyone's Time)
- Modular, Maintainable Code
- Optimization
- Sphinx Docs
- Fixtures, mockers

▼	biosim	100% files, 90% lines covered
	__init__.py	100% lines covered
	fauna.py	95% lines covered
	landscapes.py	79% lines covered
	map.py	100% lines covered
	simulation.py	86% lines covered
	visualisation.py	95% lines covered

```
@classmethod
def set_given_parameters(cls, given_parameters):
    """
    Sets the user defined parameters that applies to Savannah, Jungle.
    Parameters
    -----
    given_parameters: dict
    """

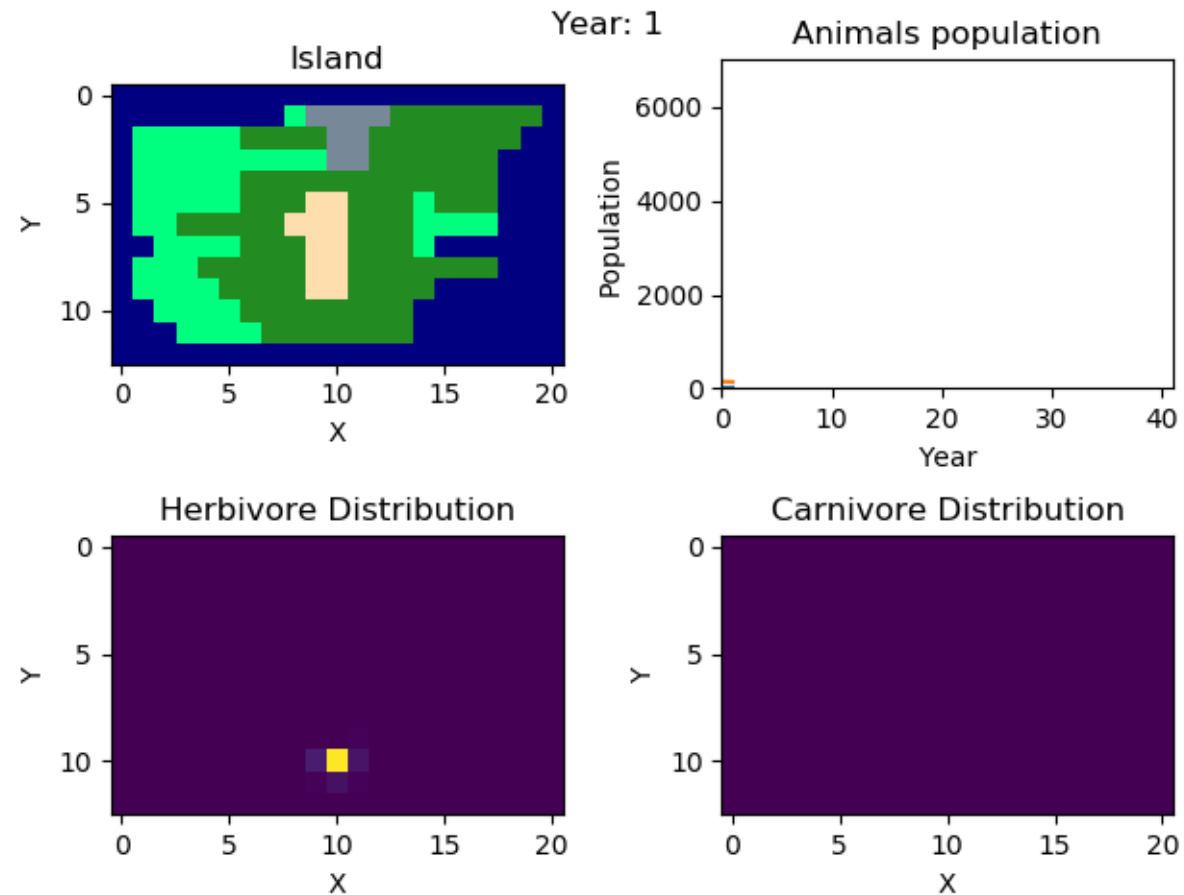
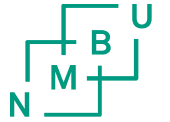
    for parameter in given_parameters:
        if parameter in Savannah.parameters:
            cls.parameters[parameter] = \
                given_parameters[parameter]
        else:
            raise RuntimeError('Unknown parameter, ' +
                               str(parameter) +
                               ' can\'t be set')
```

# Challenges/Bugs

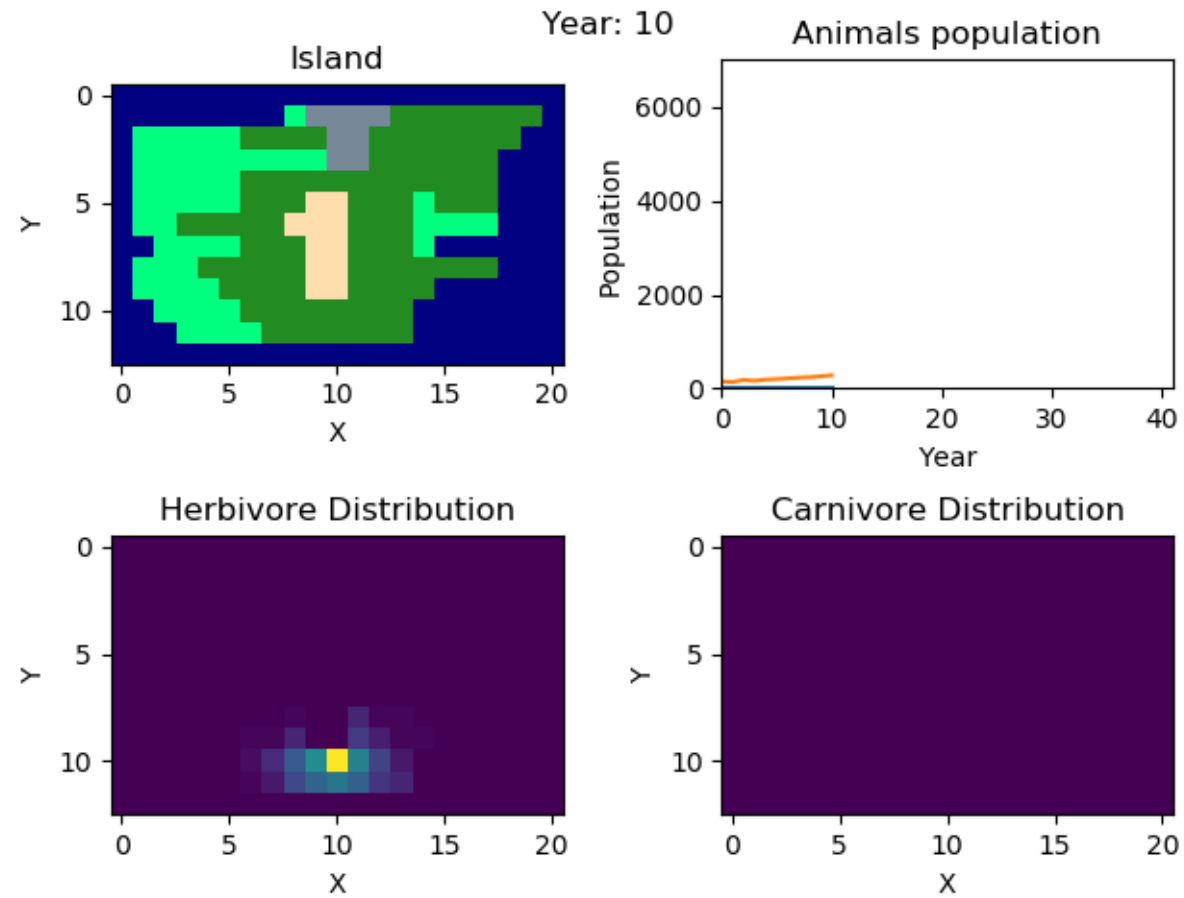
- Simulation results exceed runtime error:  
(40000 Herbivore)
  - Random seed
  - Methods/variables resolution orders
  - Random migration
  - Wrong implementation of feeding
- Parallelization

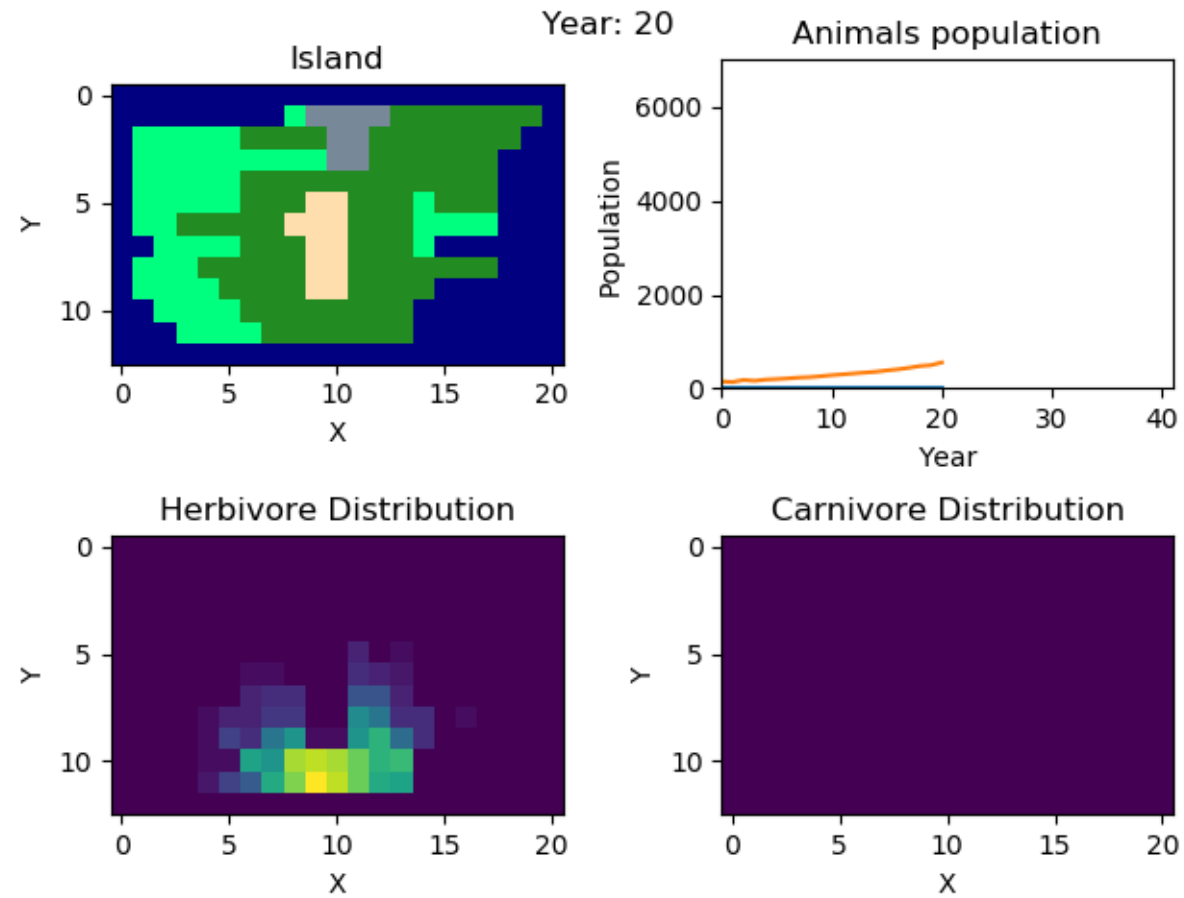
```
{'Carnivore': 6, 'Herbivore': 2697}
Year 56
{'Carnivore': 4, 'Herbivore': 2843}
Year 57
{'Carnivore': 2, 'Herbivore': 3033}
Year 58
{'Carnivore': 1, 'Herbivore': 3192}
Year 59
{'Carnivore': 1, 'Herbivore': 3430}
Year 60
{'Carnivore': 1, 'Herbivore': 3580}
Press ENTER
```

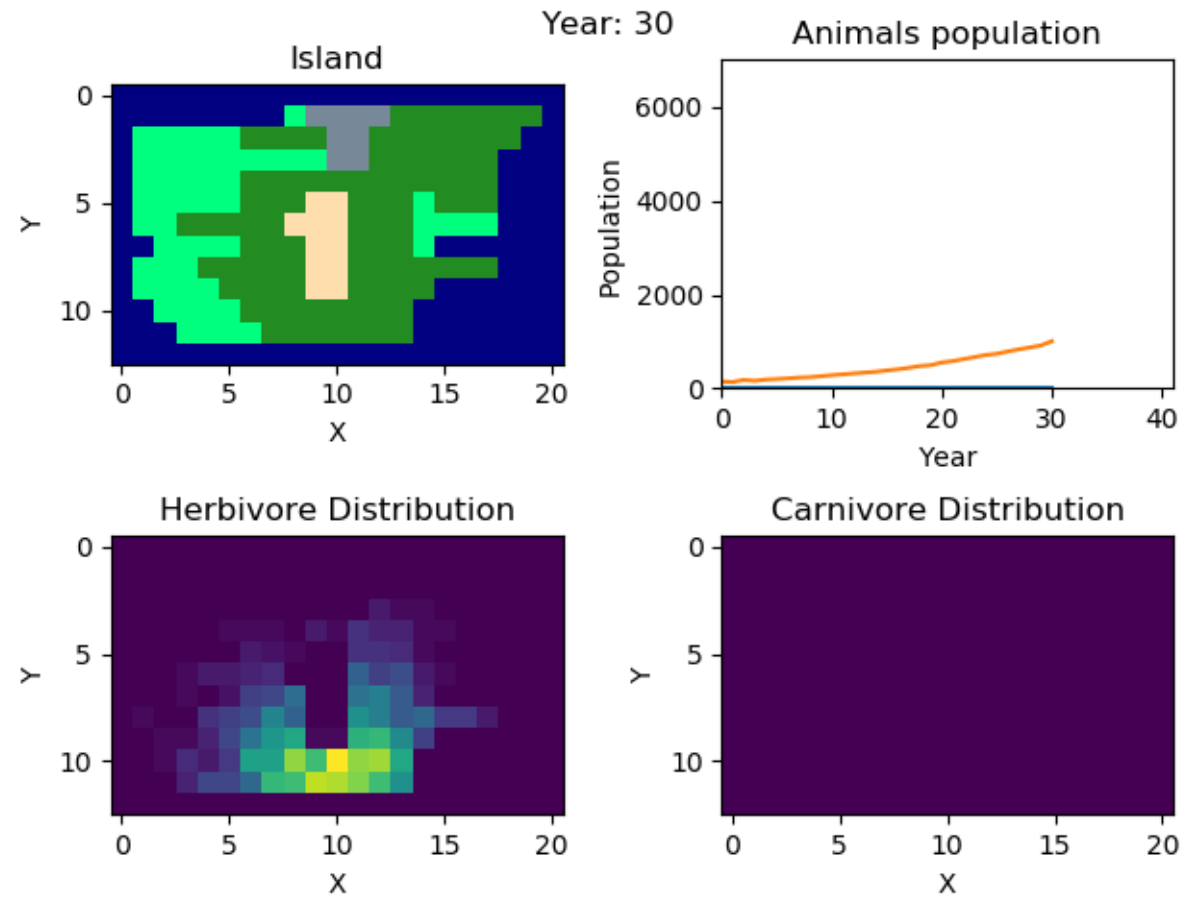
# Simulation Results

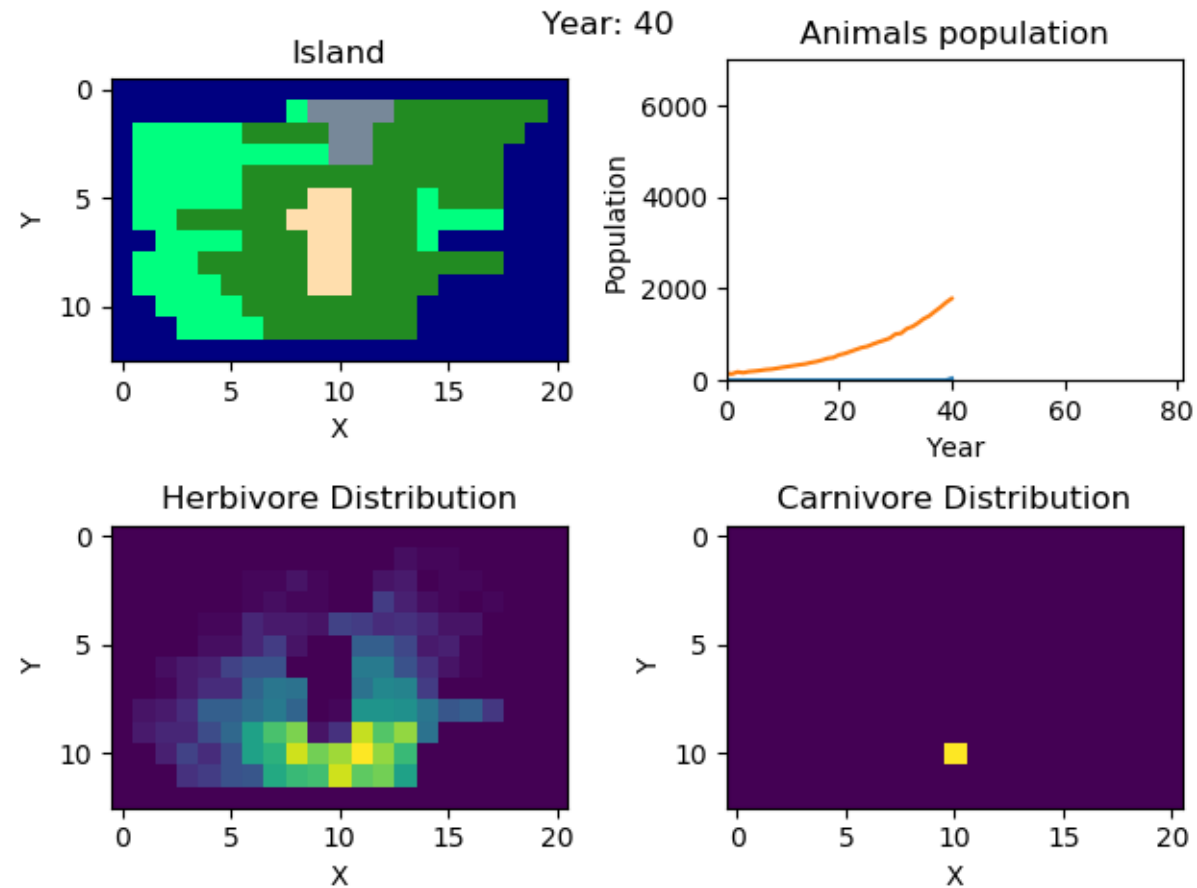


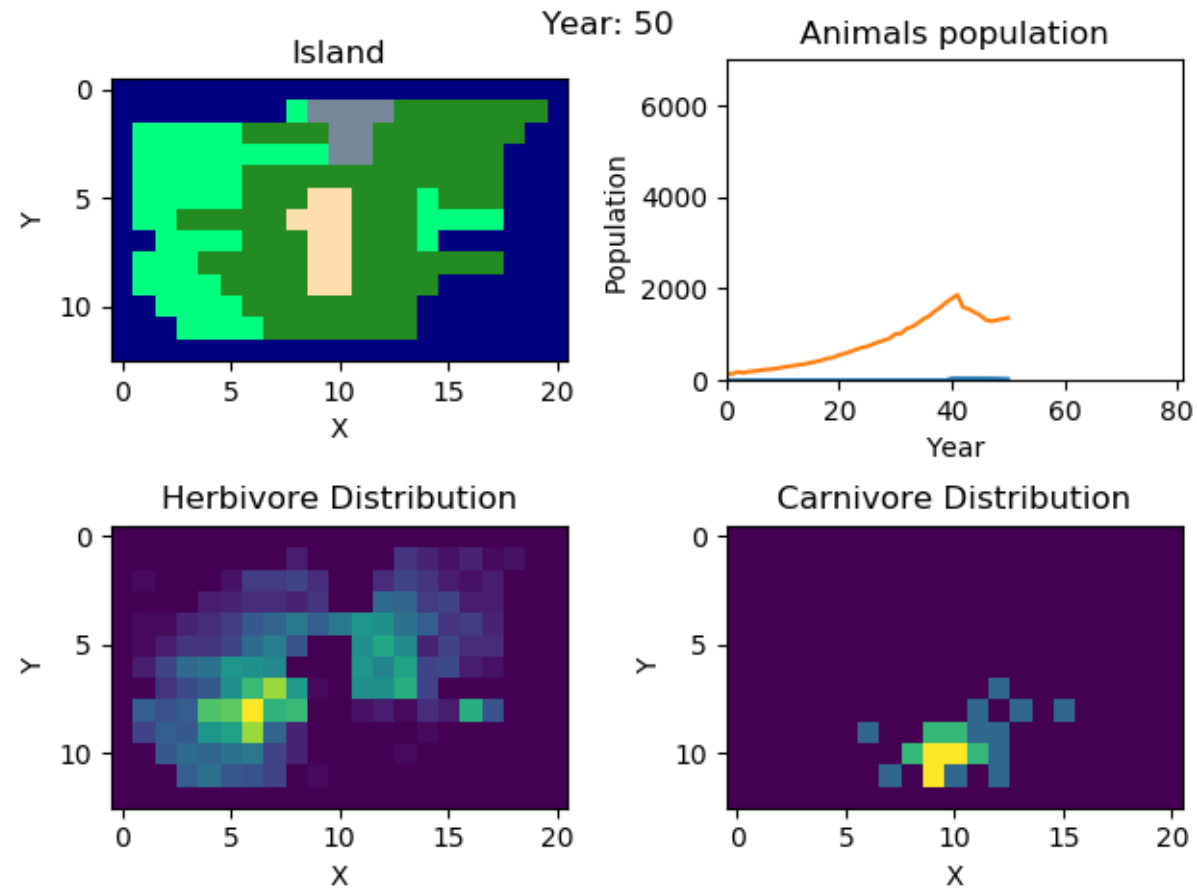


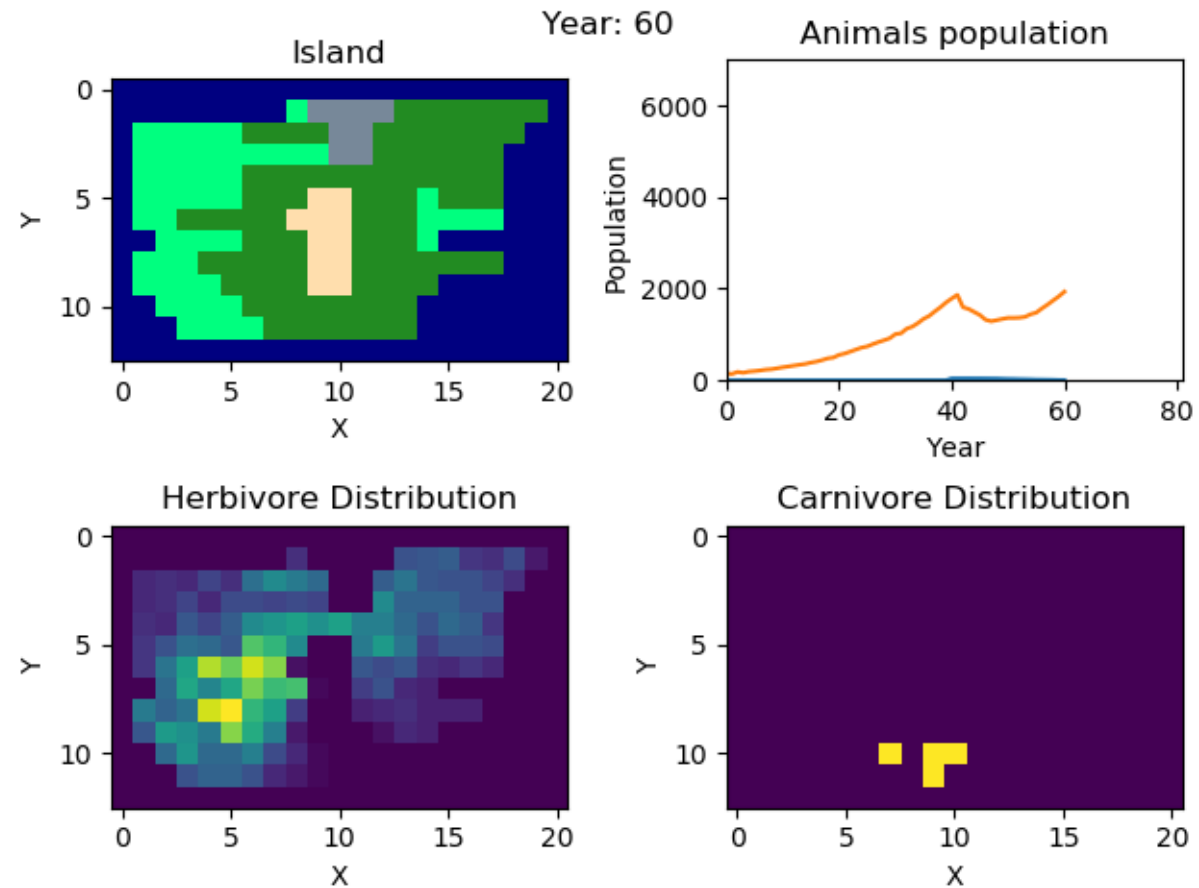


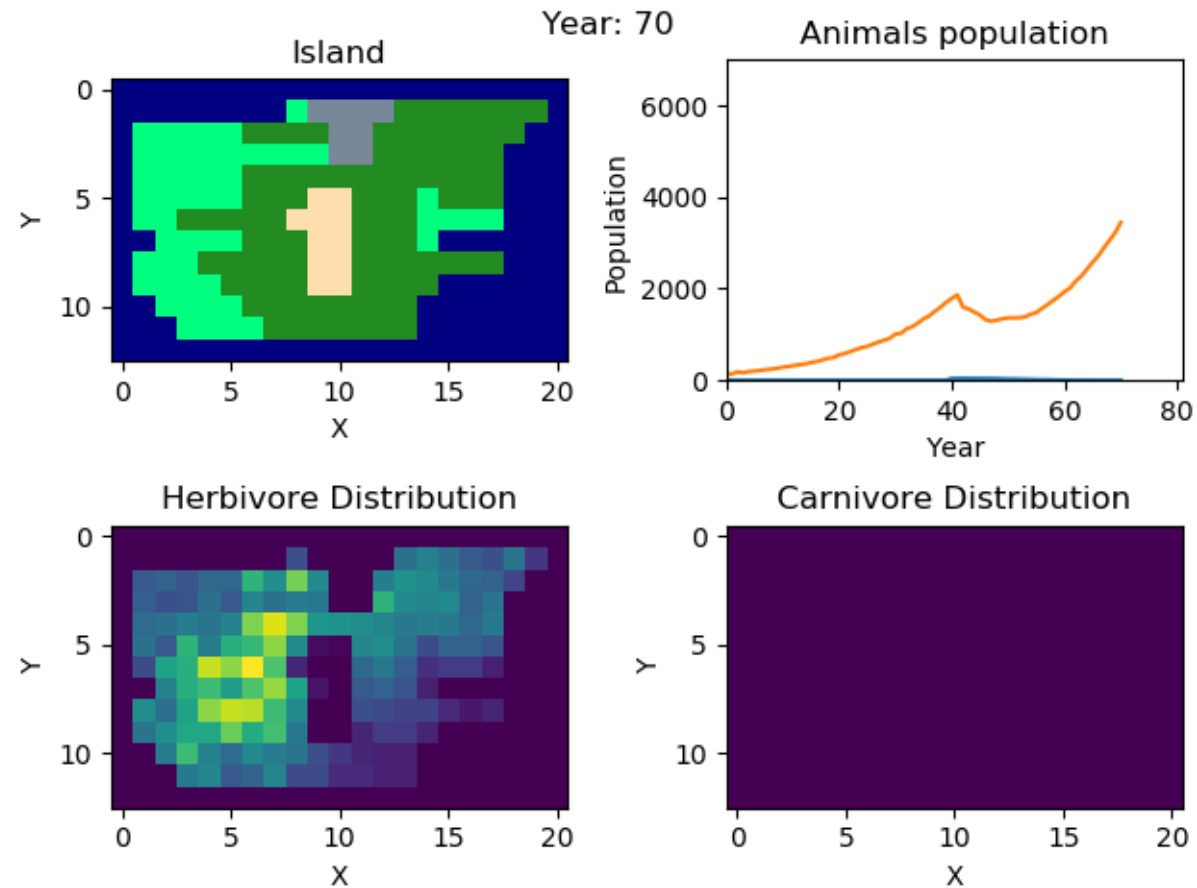


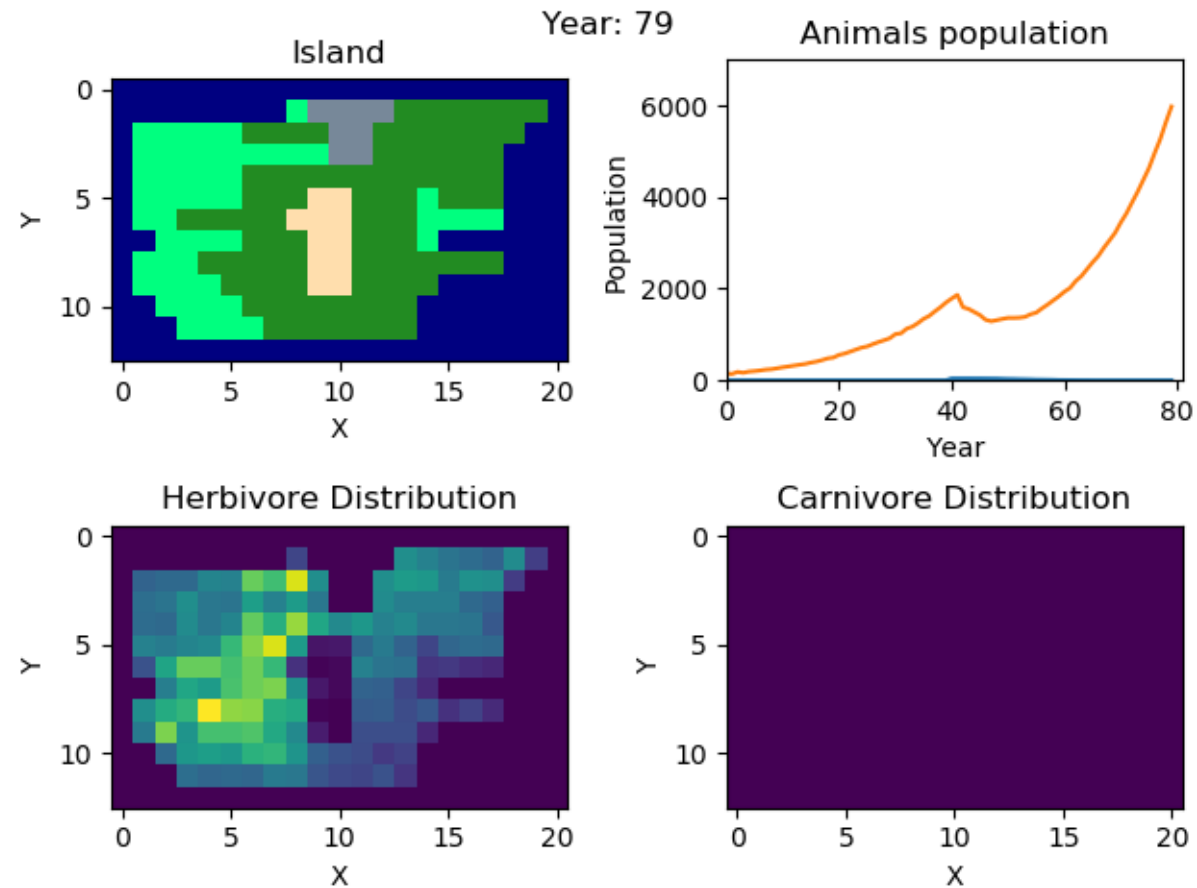














# Discussion

