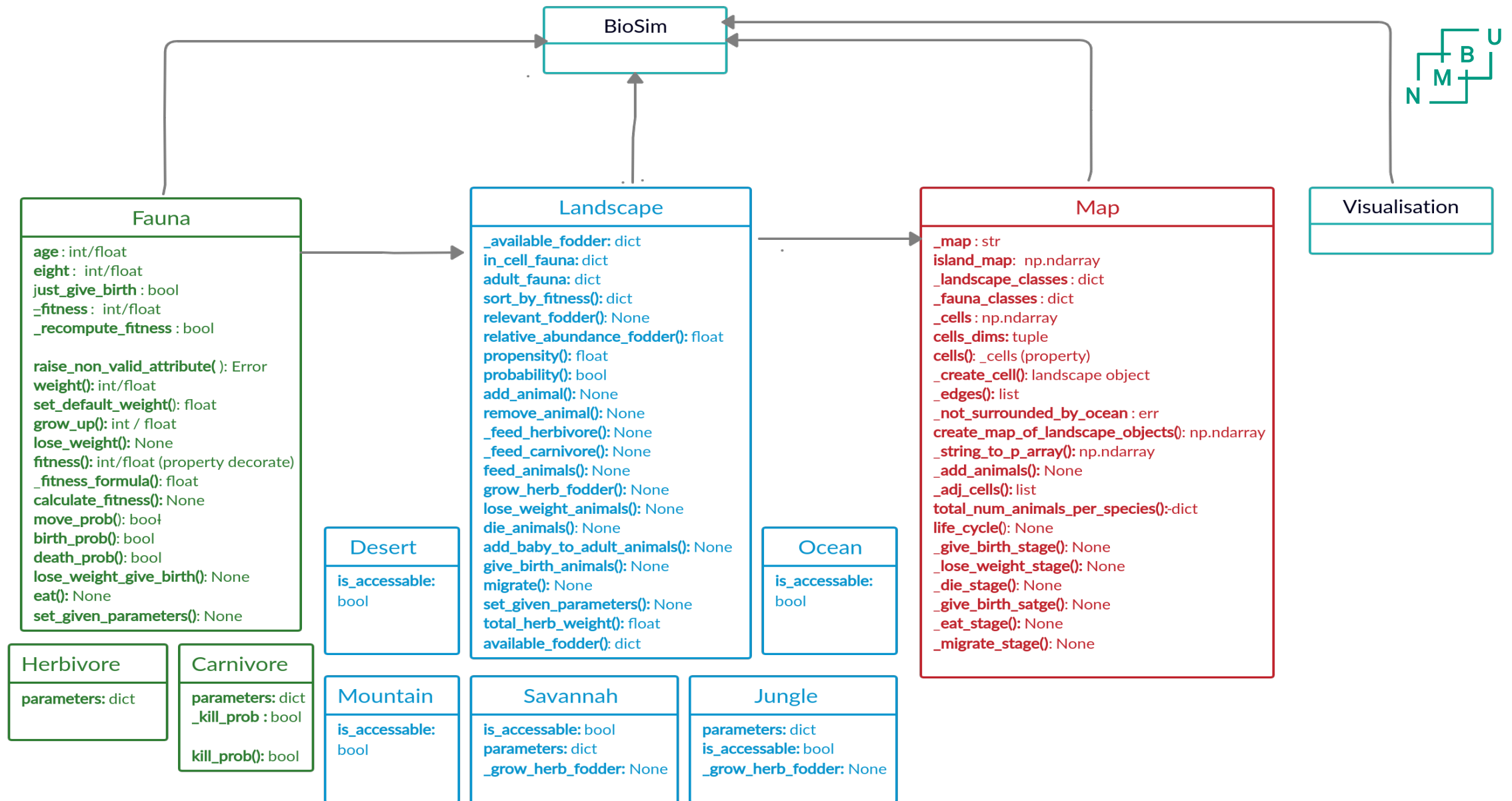


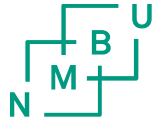
Norwegian University
of Life Sciences

Modelling of Ecosystem of Rossumøya

Nasibeh Mohammadi

26 January 2020





Github Issues

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

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

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
    """

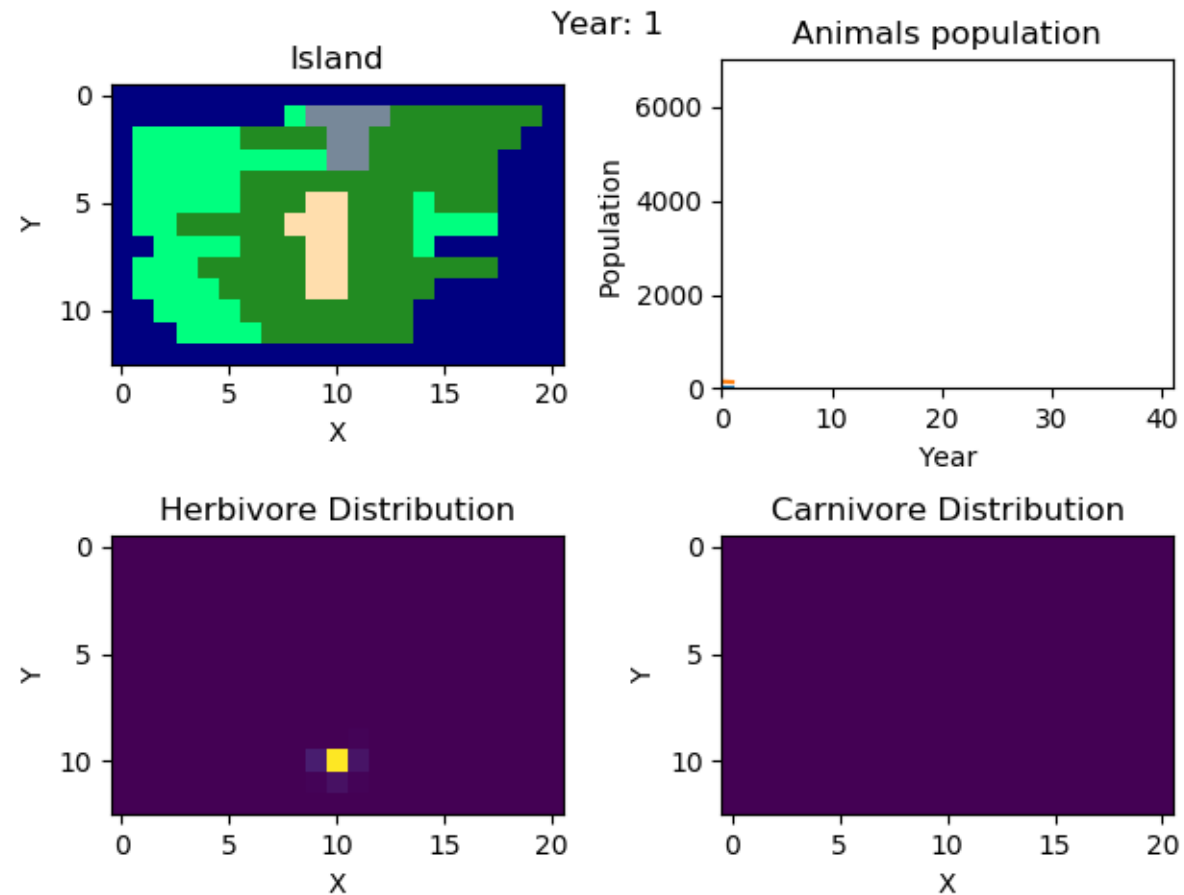
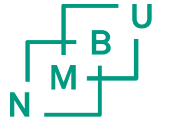
    for parameter in given_parameters:
        if parameter in Savannah.parameters:
            cls.parameters[parameter] = \
                given_parameters[parameter]
        else:
            raise RuntimeError('Unknown parameter, ' +
                               str(parameter) +
                 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

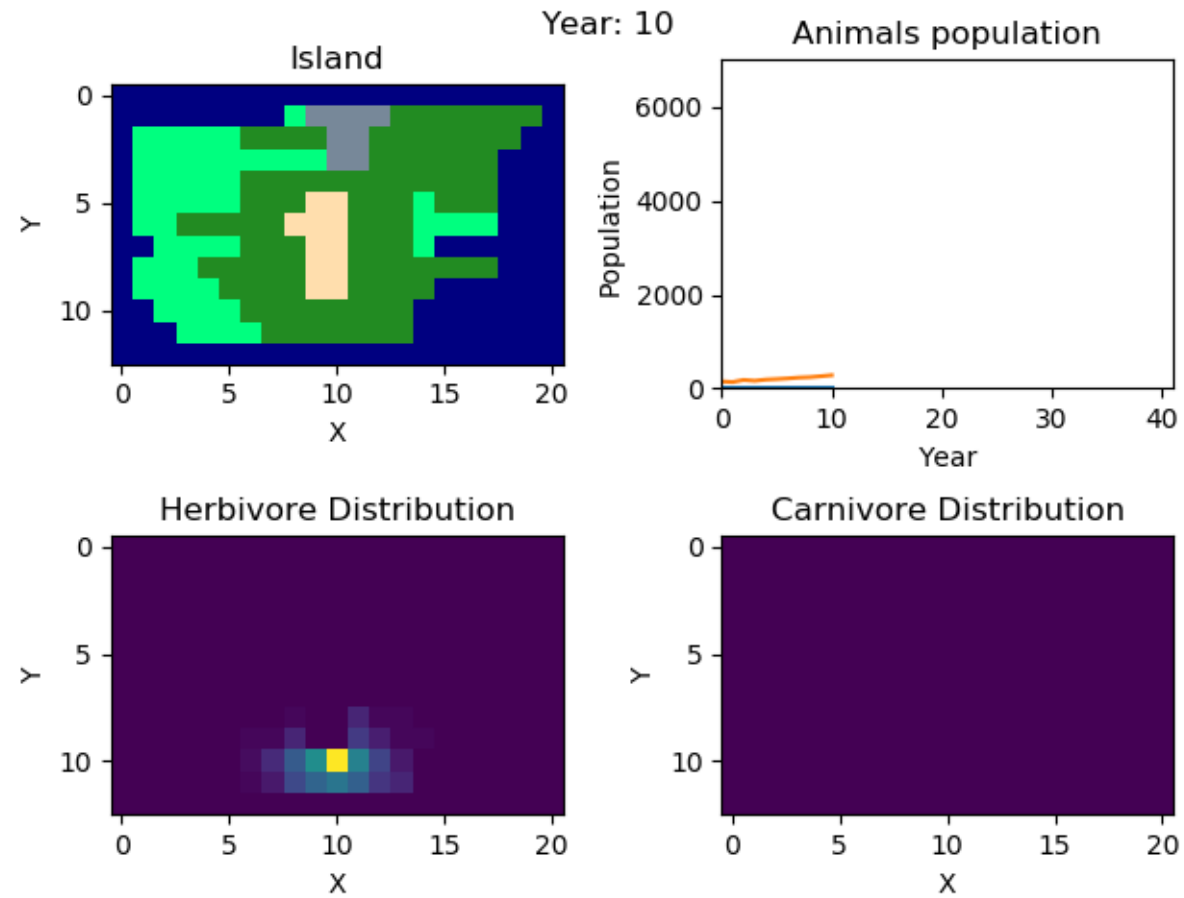
Challenges/Bugs

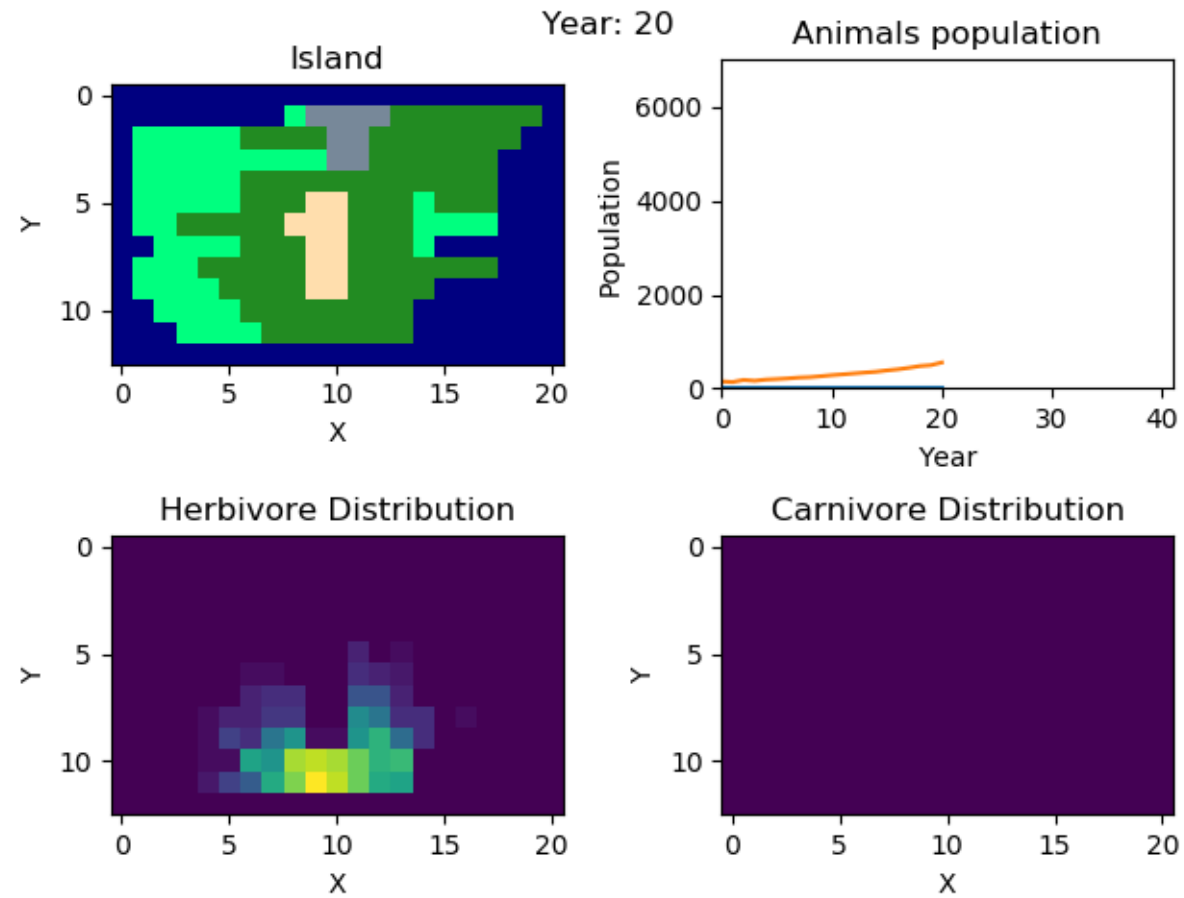
- Simulation results exceed runtime error:
(40000 Herbivore)
 - Random seed
 - Methods/variables resolution orders
 - Random migration
 - Wrong implementation of feeding
- Parallelization

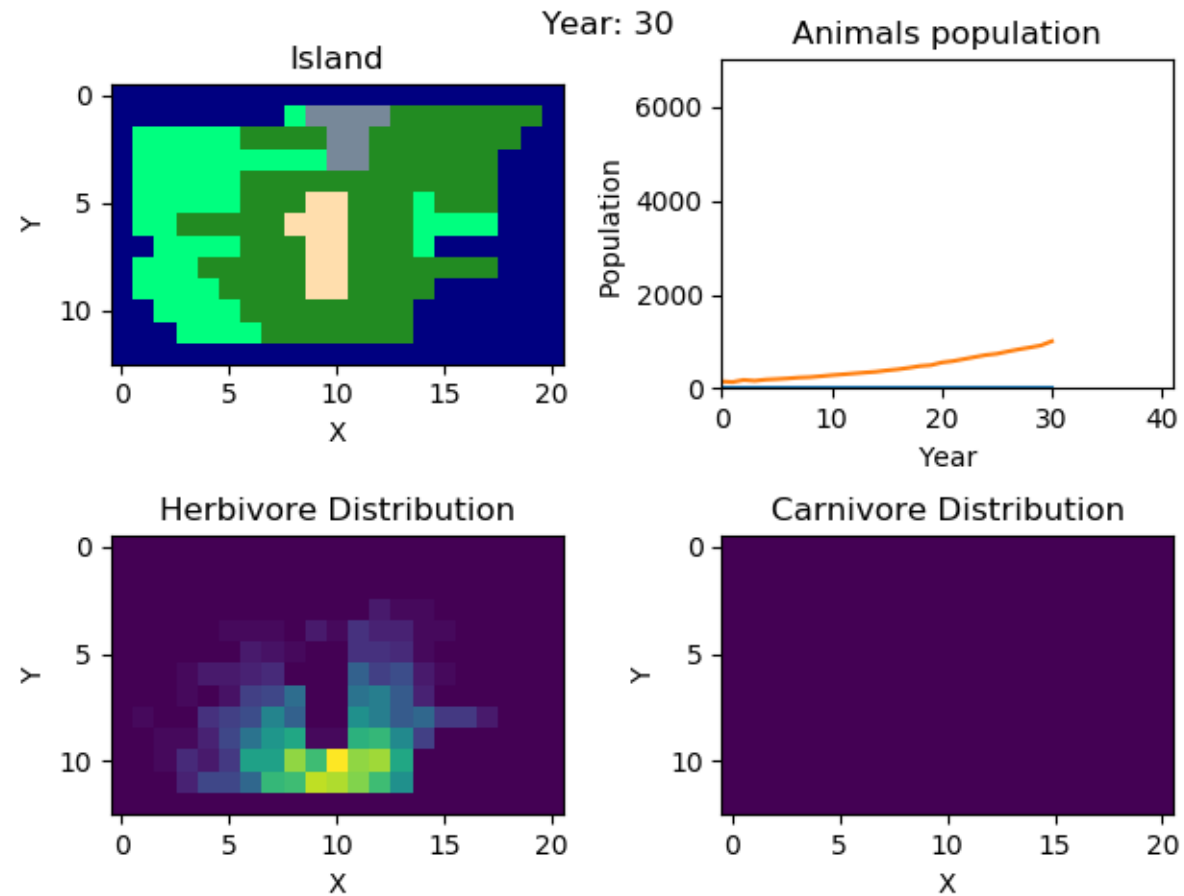
```
{'Carnivore': 6, 'Herbivore': 2697}
Year 56
{'Carnivore': 4, 'Herbivore': 2843}
Year 57
{'Carnivore': 2, 'Herbivore': 3033}
Year 58
{'Carnivore': 1, 'Herbivore': 3192}
Year 59
{'Carnivore': 1, 'Herbivore': 3430}
Year 60
{'Carnivore': 1, 'Herbivore': 3580}
Press ENTER
```

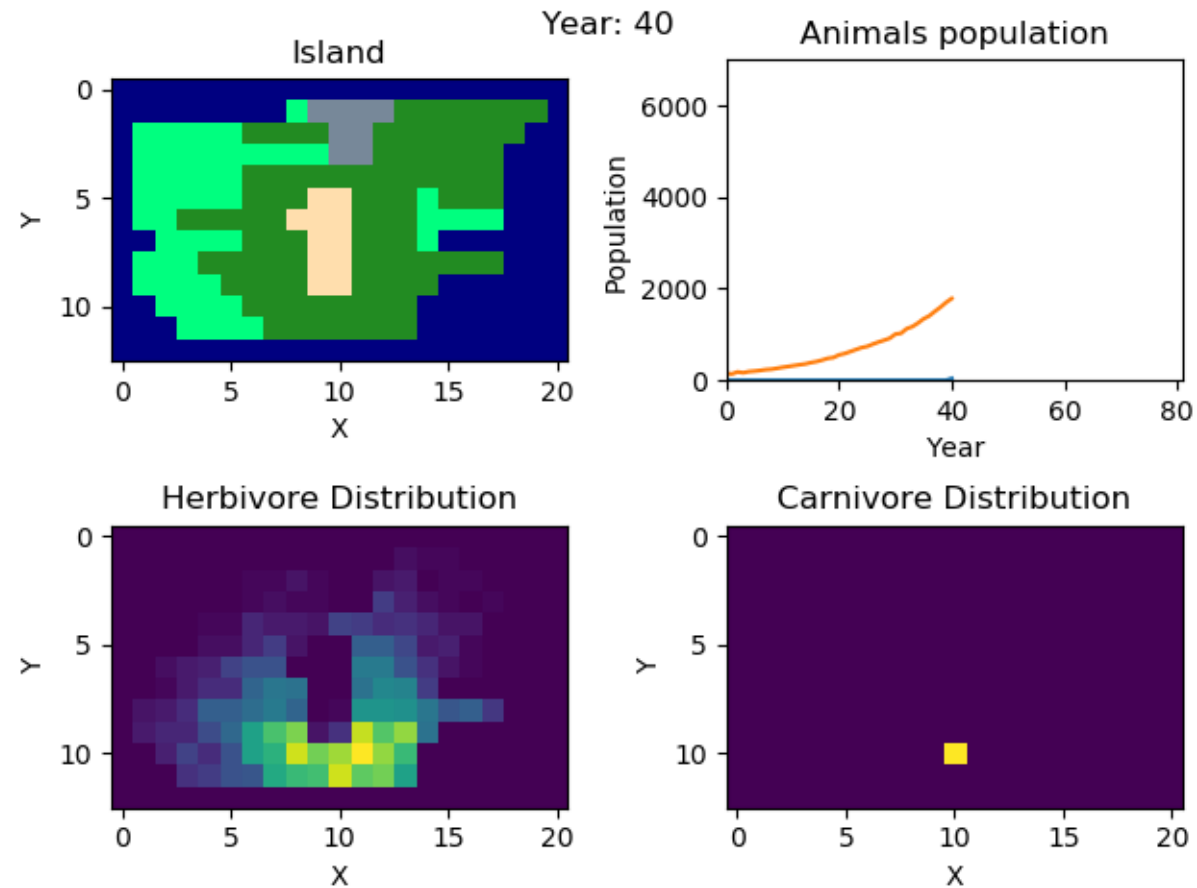
Simulation Results

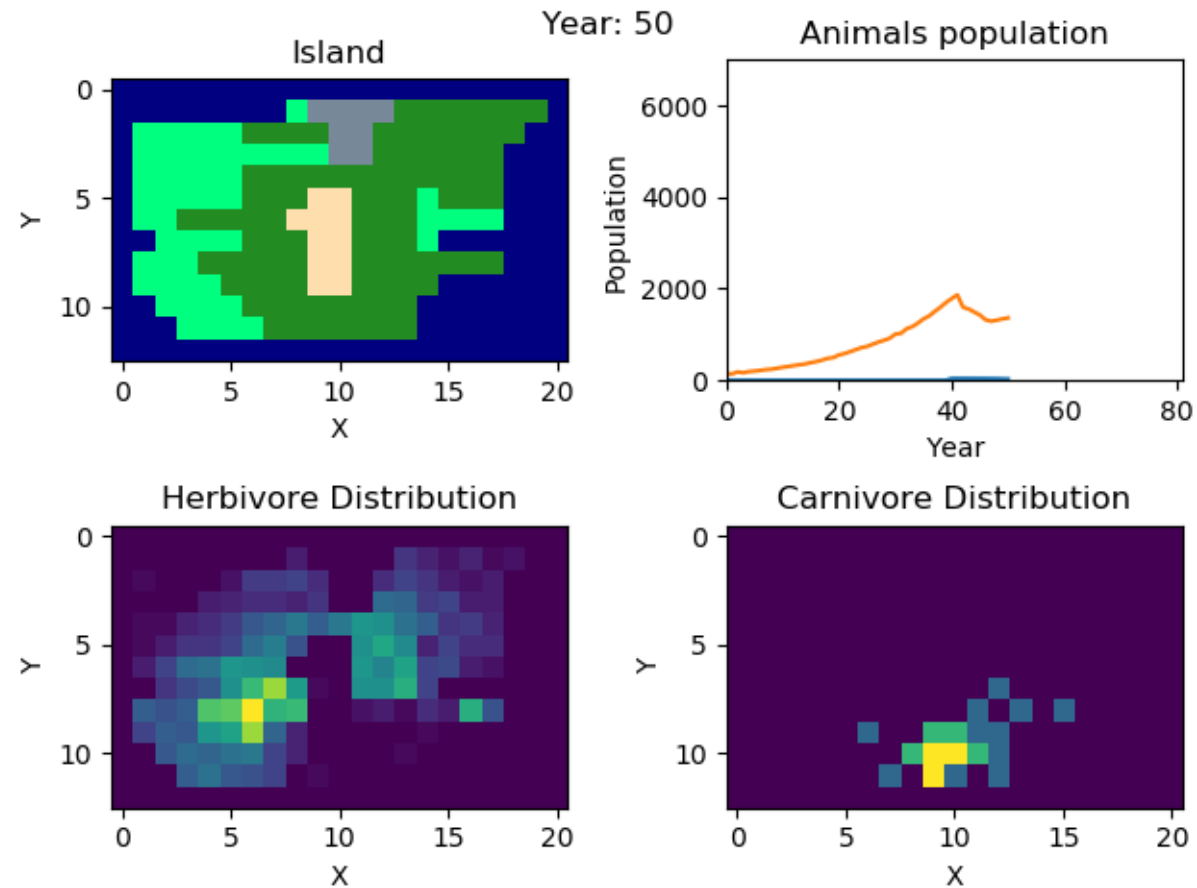


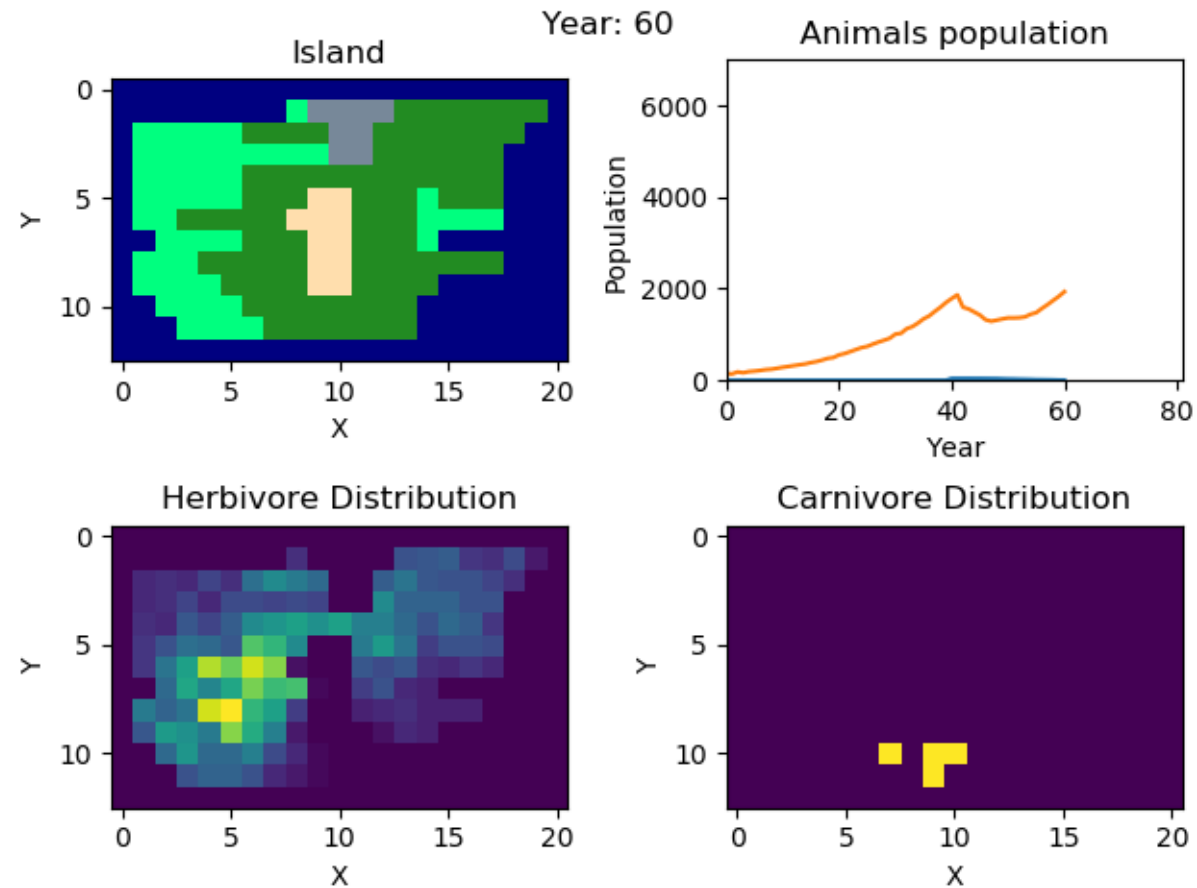


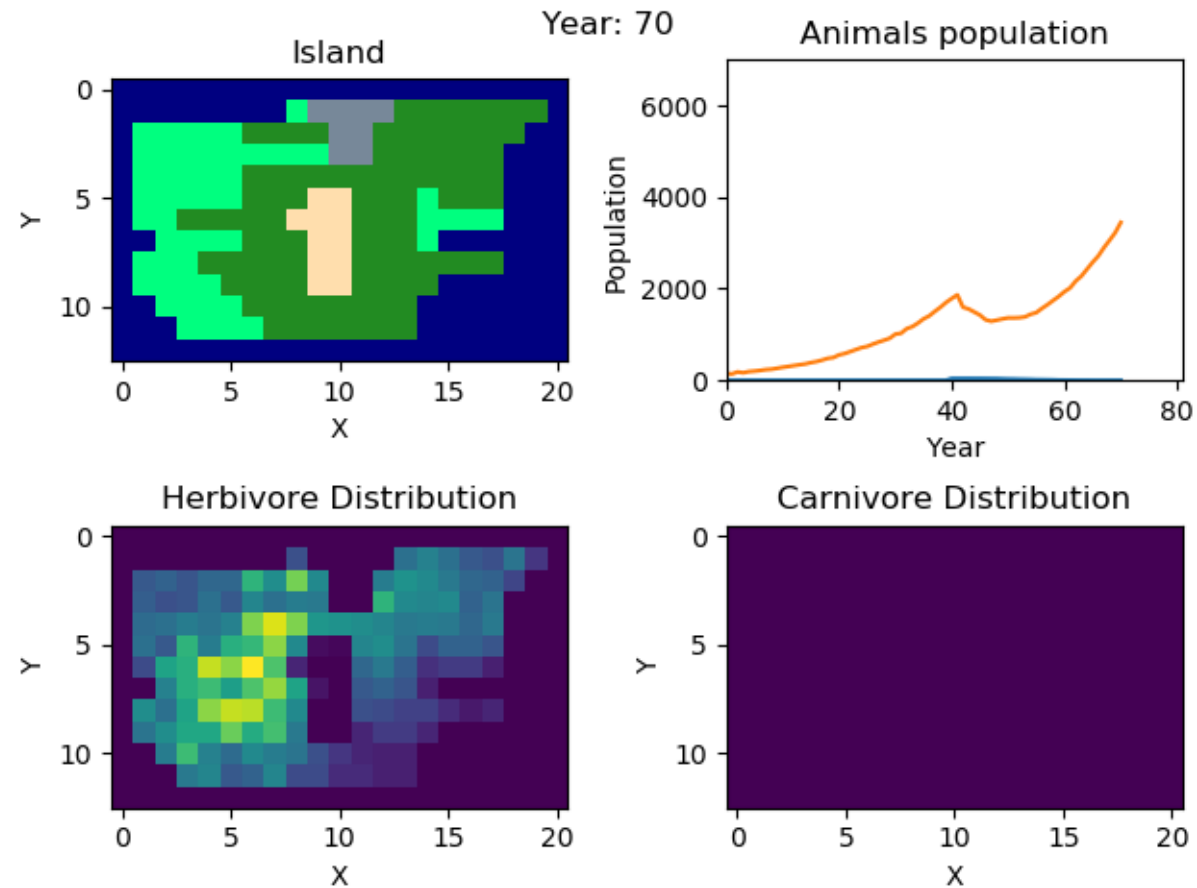


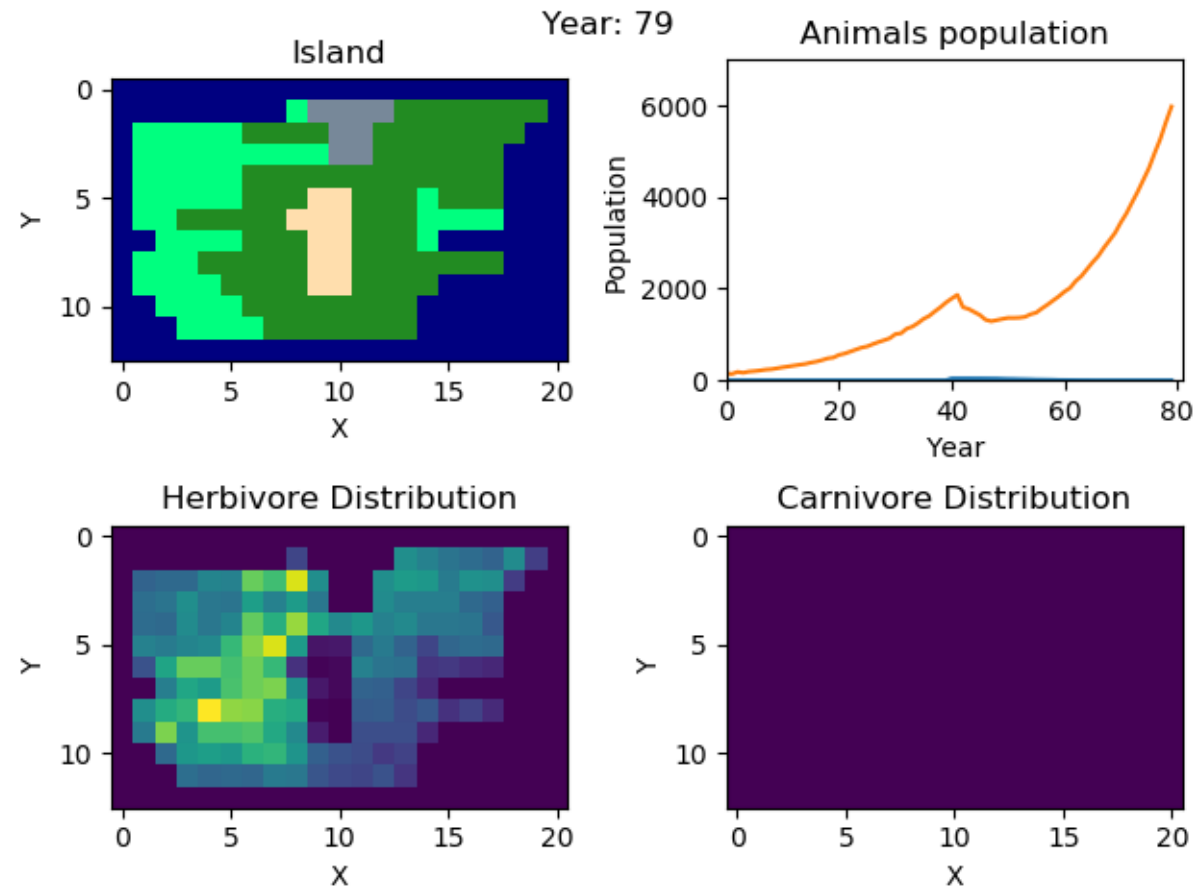












Discussion

