Gamba Spread Simulations

Supporting knowledge sharing, planning discussions and community engagement.

CHARLES DARWIN UNIVERSITY

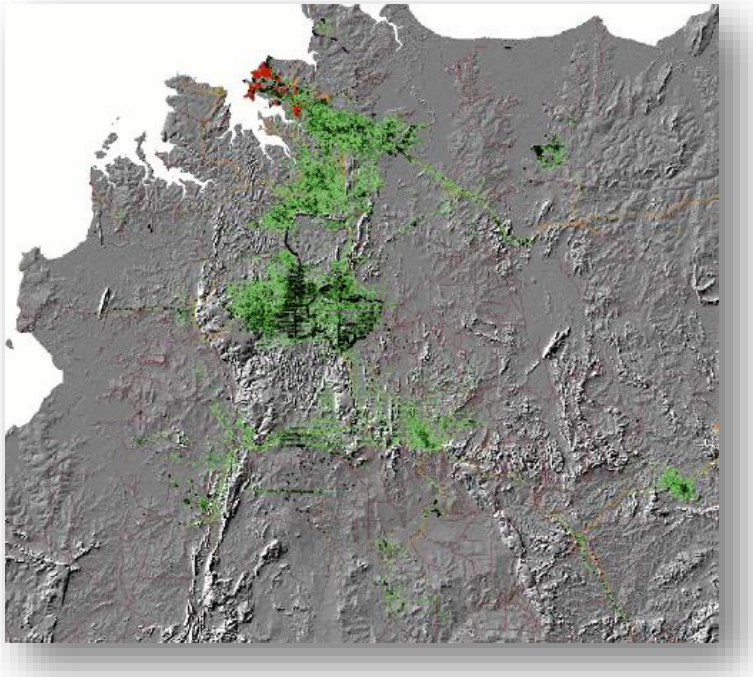
RIEL
Research Institute for the Environment and Livelihoods

Territory Natural Resource Management

Simulations for Understanding complex human ecological systems

For Exploring

- Interactions
- Emergent properties
- Uncertainty
- Multiple scenarios.



Simulation for understanding complex systems

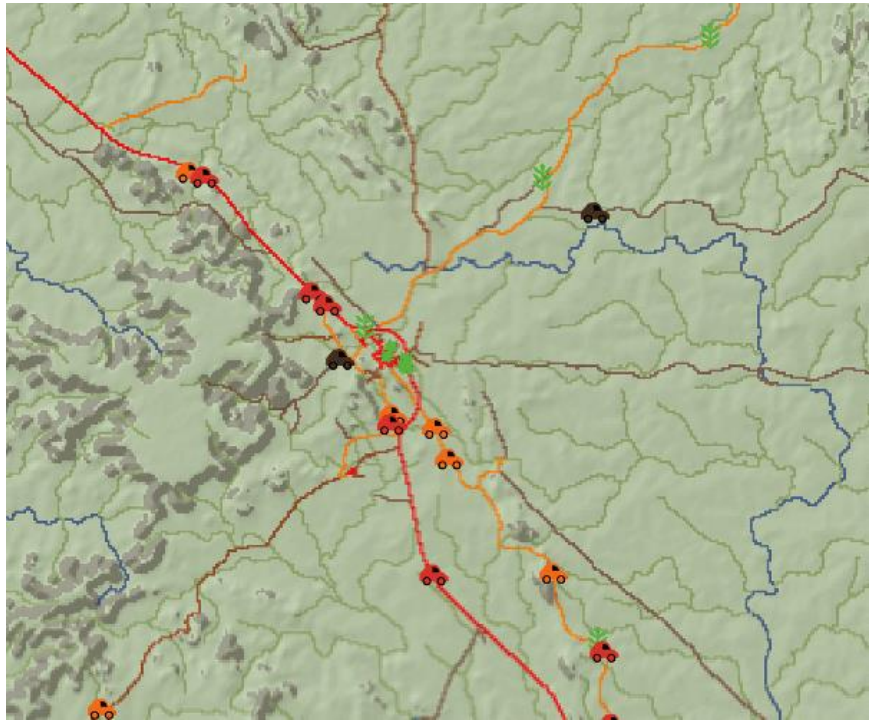
1. The virtual world allows time and space to be compressed or expanded.

2. Actions can be repeated under the same or different conditions.

3. Processes can be stopped to reflect on outcomes.

4. Decisions that are dangerous, infeasible or unethical in the real system can be taken in the virtual world.

Not predictive but explanatory



Three Spread Models

- Top-End, understanding long term threat and spread tradgectory
- Regional Spread; understanding spread vectors and exploring management priorities.
- Local Spread: Local control actions, supporting community engagement and discussion.

Simulation for Understanding Gamba Spread

How does Gamba move?

- People
  - Cars
  - Graders
  - Quad Bikes
  - ?
- Animals
  - Ferals
  - Wallabies
  - ?
- Where is it picked up/dropped off?
  - Fishing spots?
  - Road side stops?
  - ?
- How fast does I move?

Start Here

set-up

place-Gamba

go

draw-gamba

spray gamba

On Off car-spread

On Off animal-spread

save-gamba

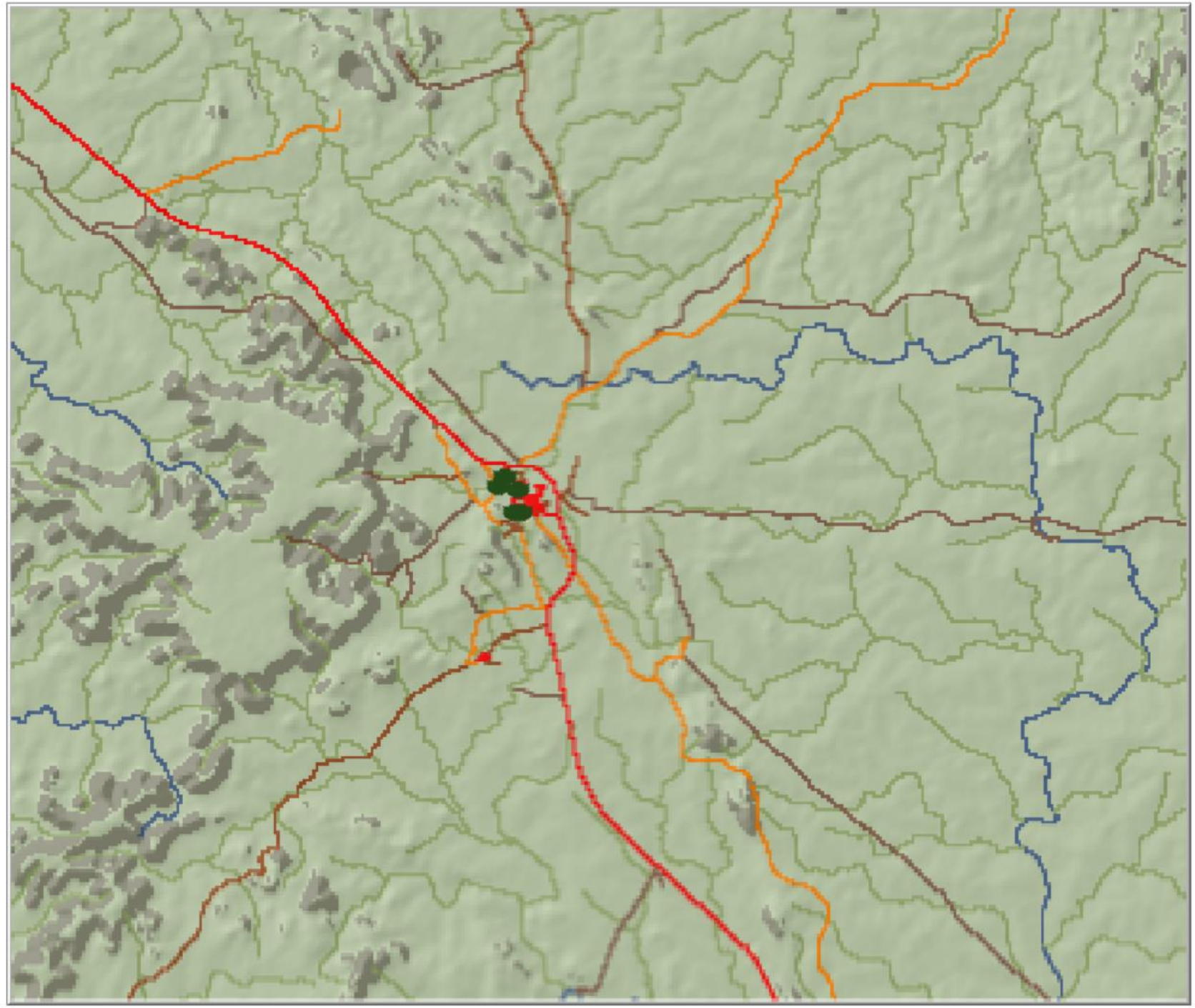
saved gamba

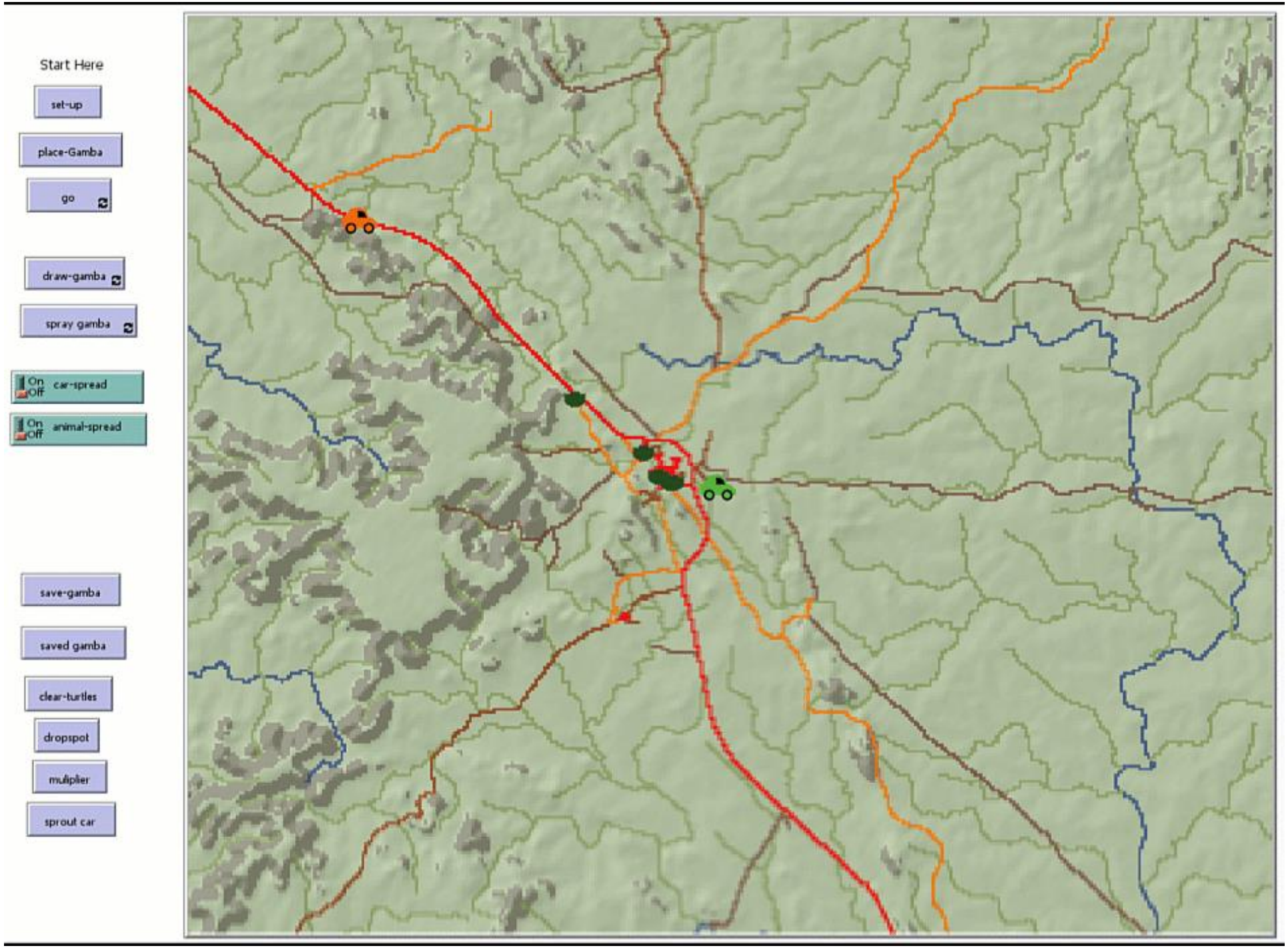
clear-turtles

dropspot

muliplier

sprout car



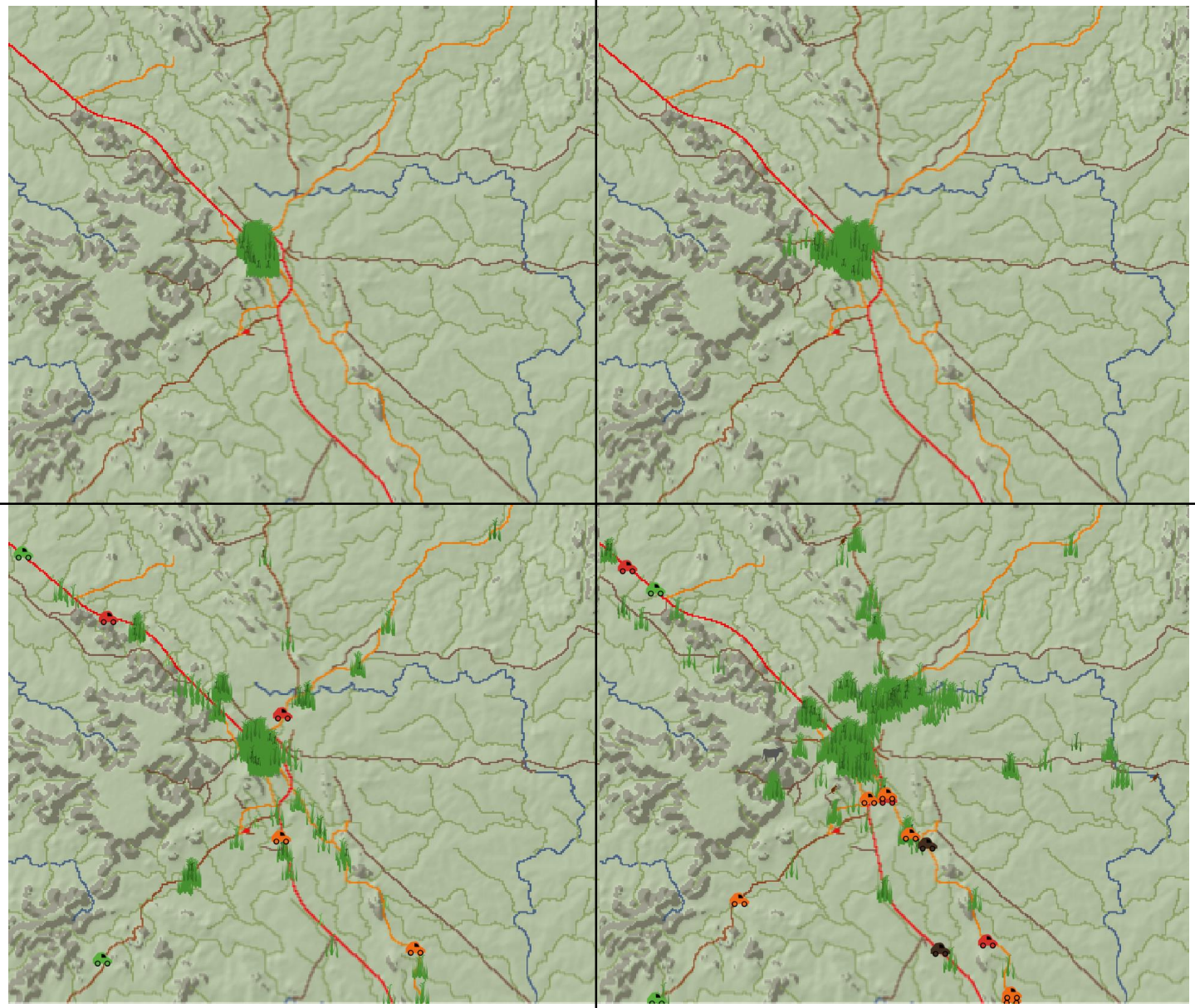

Start Here
set-up
place-Gamba
go
draw-gamba
spray gamba
On
Off
car-spread
On
Off
animal-spread
save-gamba
saved gamba
clear-turtles
dropspot
multiplier
sprout car

No Animals

Animals

No Cars

Cars



Keep models simple

Models are not real and adding details does not make a model more ‘realistic’ but rather reduces the ability to learn from them, edit and alter.

Tools to think with.

…modelling is not the model per se, but what the model and working with the model does to our mind.

If the whole process of modelling has succeeded, something will have happened in our head, namely that an understanding of relationships has emerged.

(Grimm 1999)