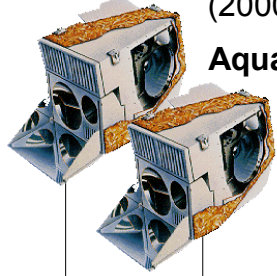


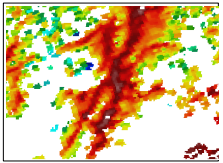
# Potential distribution of *Aedes albopictus* from reconstructed Daily MODIS Land Surface Temperature maps

**Terra-MODIS LST**  
(2000-today)

**Aqua-MODIS LST**  
(2002-today)

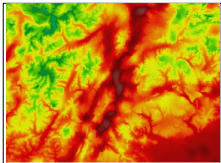
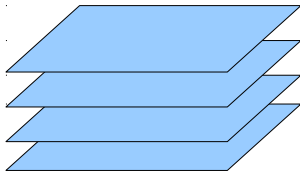


GIS based  
MODIS LST  
reconstruction



Reconstructed  
daily LST maps

01:30  
10:30  
13:30  
22:30  
solar  
time



## Egg winter survival

### January thresholds (2001-2009)

- For all years, calculate pixelwise monthly mean LST of daily mean LST maps
- Calculate all-years January mean LST map
- Create binary threshold maps (pixels  $\geq 0^{\circ}\text{C}$ )

## Adult annual survival

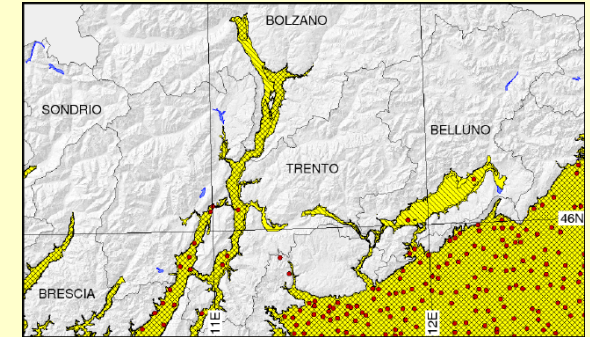
### Annual thresholds (2001-2009)

- For all years, calculate pixelwise annual mean LST of daily mean LST maps
- Calculate all-years annual mean LST map
- Create binary threshold maps (pixels  $\geq 11^{\circ}\text{C}$ )

## Mosquito life cycle

### Threshold 1350 Growing Degree Days/ autumnal threshold of $10^{\circ}\text{C}$ (2003-2008)

- For all years,
  - calculate GDD (baseline  $11^{\circ}\text{C}$ , cut-off temp  $30^{\circ}\text{C}$ )
  - calculate mean October LST
- Calc. average GDD, day by day
- Calc. all-years GDD
- Calc. all-years autumnal mean LST
- Create binary threshold map of autumnal mean LST of  $> 11^{\circ}\text{C}$
- Find GDD pixels  $\geq 1350$  GDD
- Filter thresholded GDD map with autumnal threshold map



### Classification

- 0: unsuitable,
- 1: marginally suitable,
- 2: moderately suitable,
- 3: highly suitable

