# A primer to Spatial Data in R

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sims
sydney institute of marine science

# get the stuff

`$cd Scratch` (or a file of your choice anywhere)

```
$git init

$git remote add origin https://github.
com/AppliedMarineEstuarineEcologyUNSW/
AMEEJournalClub.git

$git pull
```

# what we'll cover

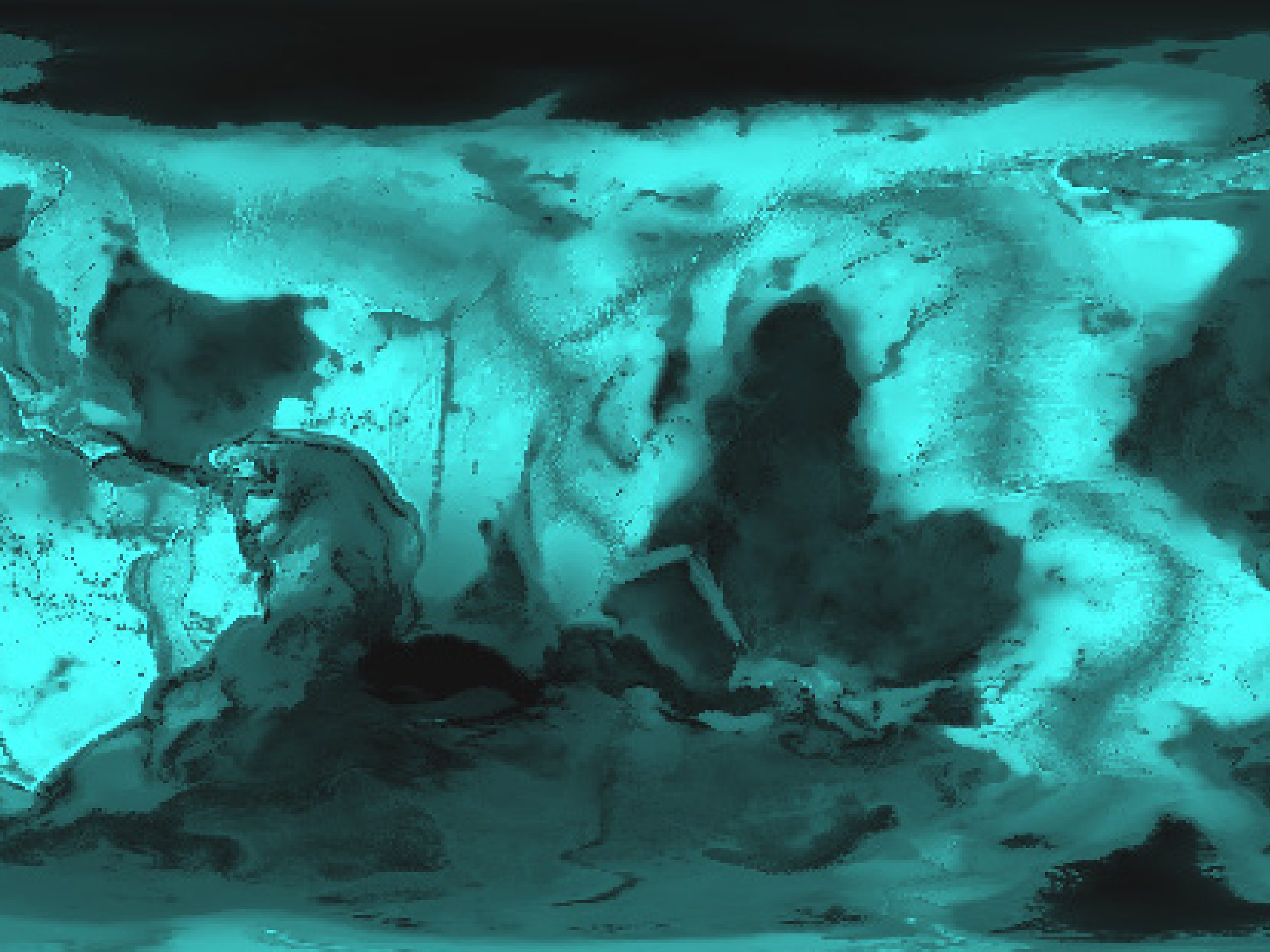
types of spatial data
storage and display
`Spatial*` Classes
    -creating
    -manipulating
    -import/export
Rasters

# what we won't cover

'Big Data' - kind of (I'll talk about it...only because it's cool- HPC (Katana | Amazon etc)

Analyses - Species Distribution Models, Point Processes, Kriging/kernel smoothers

THAT'S NEXT TIME!



# Data Analysts Captivated by R's Power

Left, Stuart Isett for The New York Times; right, Kieran Scott for The New York Times
R first appeared in 1996, when the statistics professors Robert Gentleman, left, and Ross Ihaka released the code as a free software package.

By ASHLEE VANCE
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To some people R is just the 18th letter of the alphabet. To others, it's the rating on racy movies, a measure of an attic's insulation or what pirates in movies say.

**Related**

Bits: R You Ready for R?

The R Project for Statistical Computing

R is also the name of a popular programming language used by a growing number of data analysts inside corporations and academia. It is becoming their lingua franca partly because data mining has entered a golden age, whether being used to set ad prices, find new drugs more

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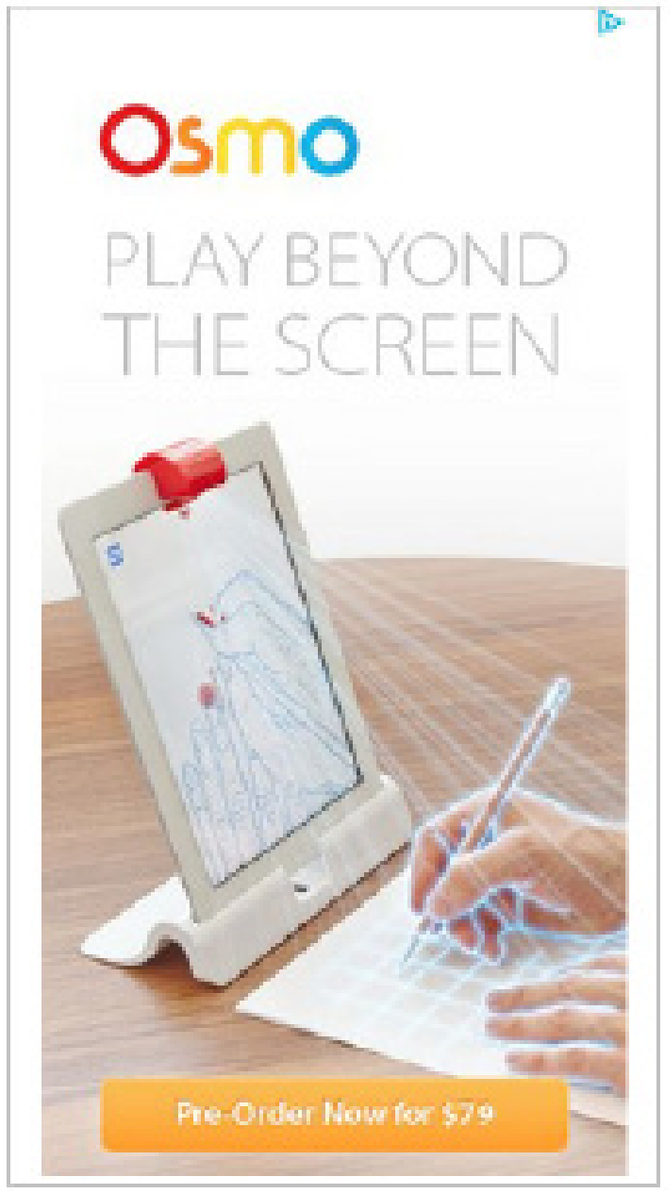


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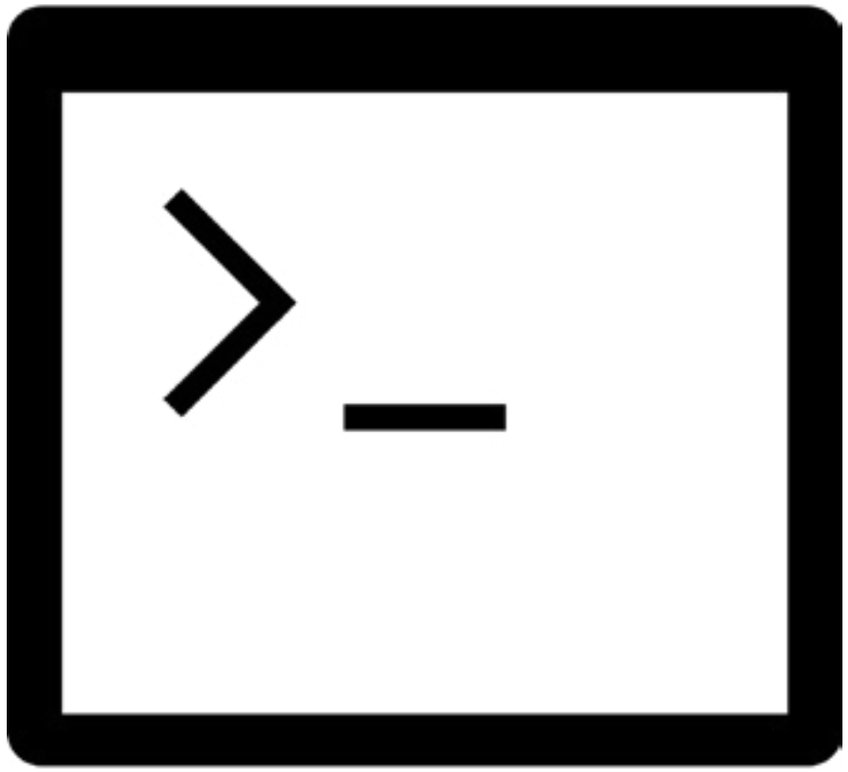
# Types of spatial data

Points

Lines

Polygons

Grids



# Types of spatial data

Data read into memory

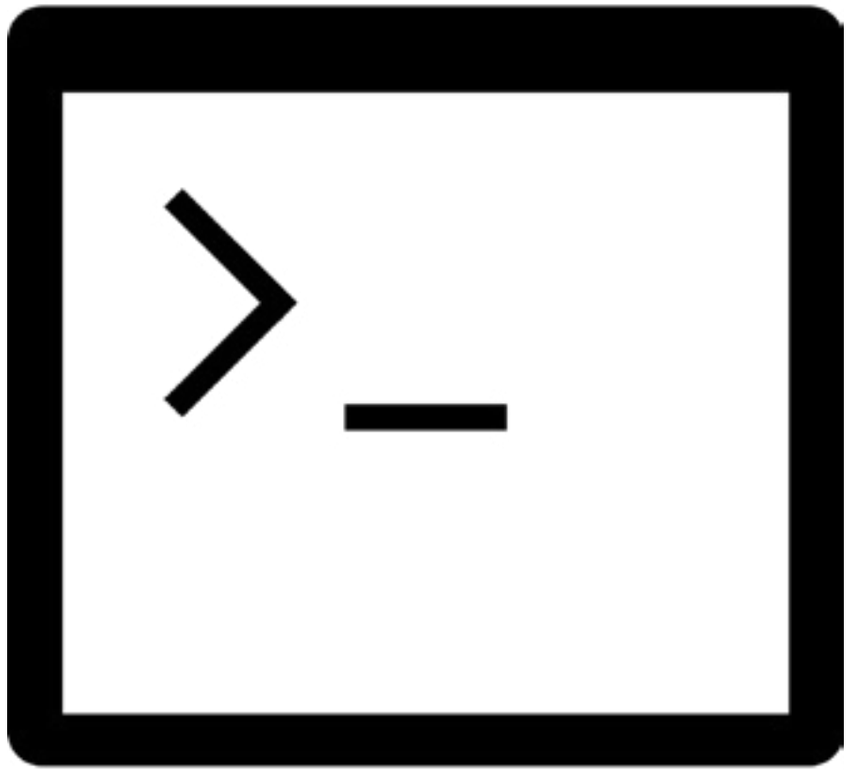
CLASSES

Every object created in R has a class

e.g. lm, data.frame, anymore?

1992- Formation of formal classes in S- S3 classes

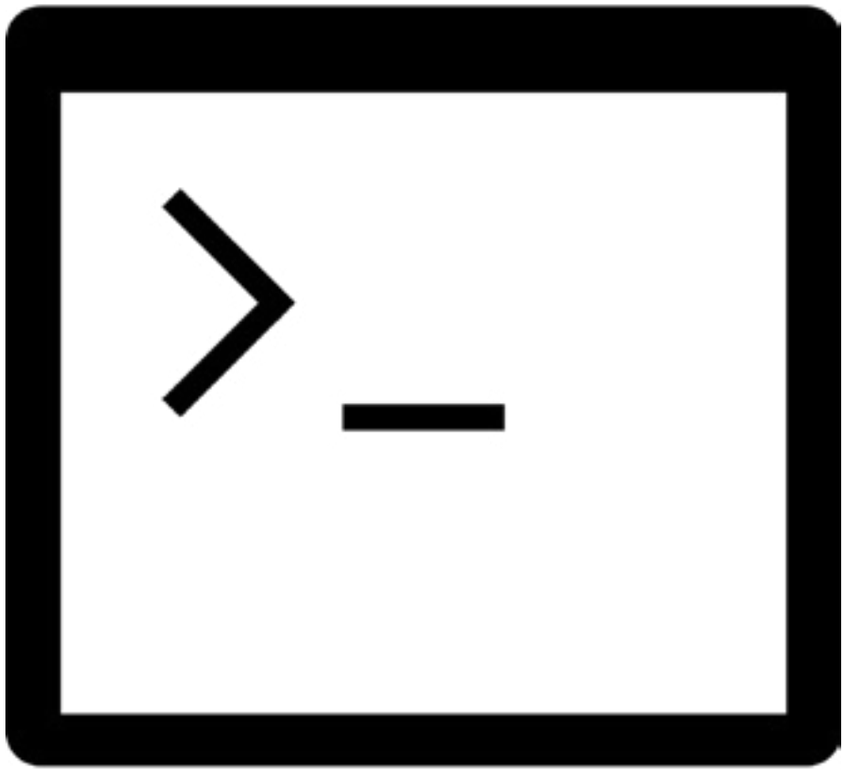
1998- New-Style classes- S4 classes



# projections

proj4strings

```
CRS("+proj=longlat +ellps=WGS84")
```



# mapping products