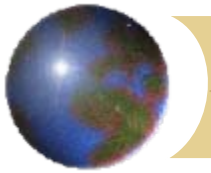
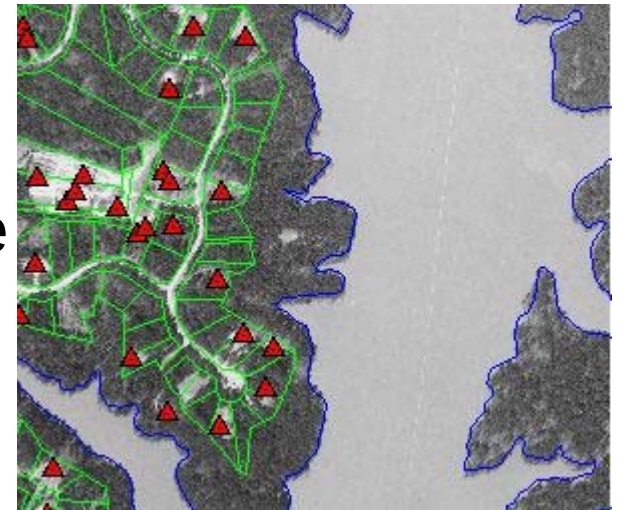


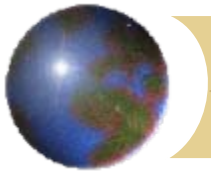
Locational Data Standard: Latitude/Longitude



EPA's Latitude/Longitude Data Standard

- Data elements used to record locations on the Earth's surface
 - Location coordinates (Lat/Long)
 - Associated metadata (MAD codes)
 - Methods of Collection
 - Accuracy
 - Description of the Reference

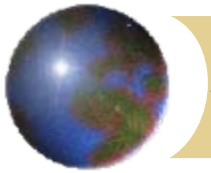




Lat/Long Core Data Elements

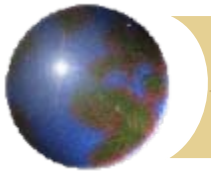
- Latitude Value (DDD.ddddddd)
- Longitude Value (DD.ddddddd)
- Method, accuracy, description (MAD codes +)
 - ❏ Horizontal collection **m**ethod
 - ❏ Horizontal **a**ccuracy measure
 - ❏ Reference **d**escription point
 - ❏ Horizontal reference datum
 - ❏ Source map scale (If Map used)





Lat/Long Data Standard Update

- Based on National Geospatial Data Policy
- Maintenance Update
 - Done in conjunction with GIS Workgroup, Locational Data Improvement Subcommittee
- Review of Permissible Values tables
 - Horizontal accuracy measure
 - Horizontal collection method
 - Horizontal reference datum
 - Reference point
 - Source map scale number



Lat/Long Standard Update

Core Changes

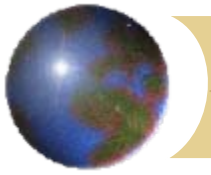
1. Alignment with NGDP Accuracy Tiers

1. Establish “preferred tier” methods used to collect coordinates
2. Retire collection methods that are centroids (Census Blocks. & Zip Codes)



EPA's Spatial Accuracy Tiers

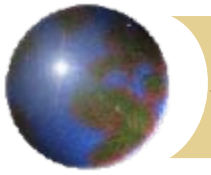
Tier Level	Accuracy and Precision	Examples of Horizontal Collection Method	Example Program Application
Tier 1	<1 m	Classical Surveying Techniques; plus GPS Carrier Phase Static Relative Position	Surveying to support definition of Institutional Controls to return land to productive use
Tier 3	6 – 25 m	GPS Code (Pseudo Range) Standard Position	Stack location; drinking water intake location
Tier 5	101 – 200 m	Urban style address matching	Preliminary site location
Tier 6	201 – 999 m	Public Land Survey – Sixteenth Section	Prediction of Local Air Dispersion



Lat/Long Standard Update

Core Changes

- 2. Simplify options for Collection Method documentation in field.**
 1. Condense the permissible values
- 3. Expand the list of permissible values for “Reference Point,”**

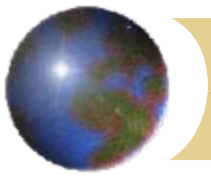


Lat/Long Standard Update

Core Recommendations

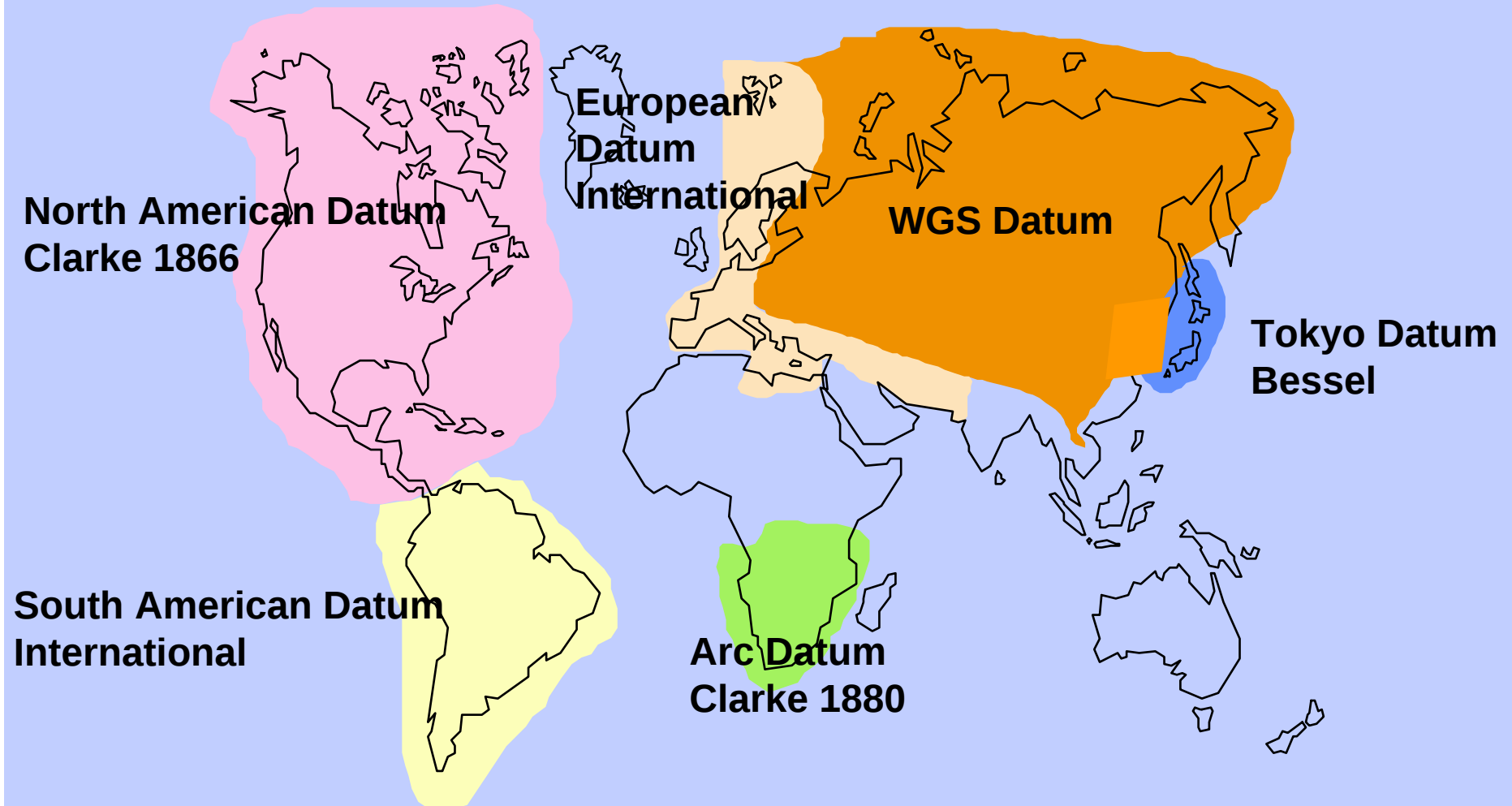
Establish a new standard for documenting Geographic Areas (polygons).

- a) Conduct a needs assessment of Agency program systems, Regions & States
- b) Develop a profile data standard for use in the Agency and State partners
- c) Develop a set of data elements for areas



Where is the Datum Problem?

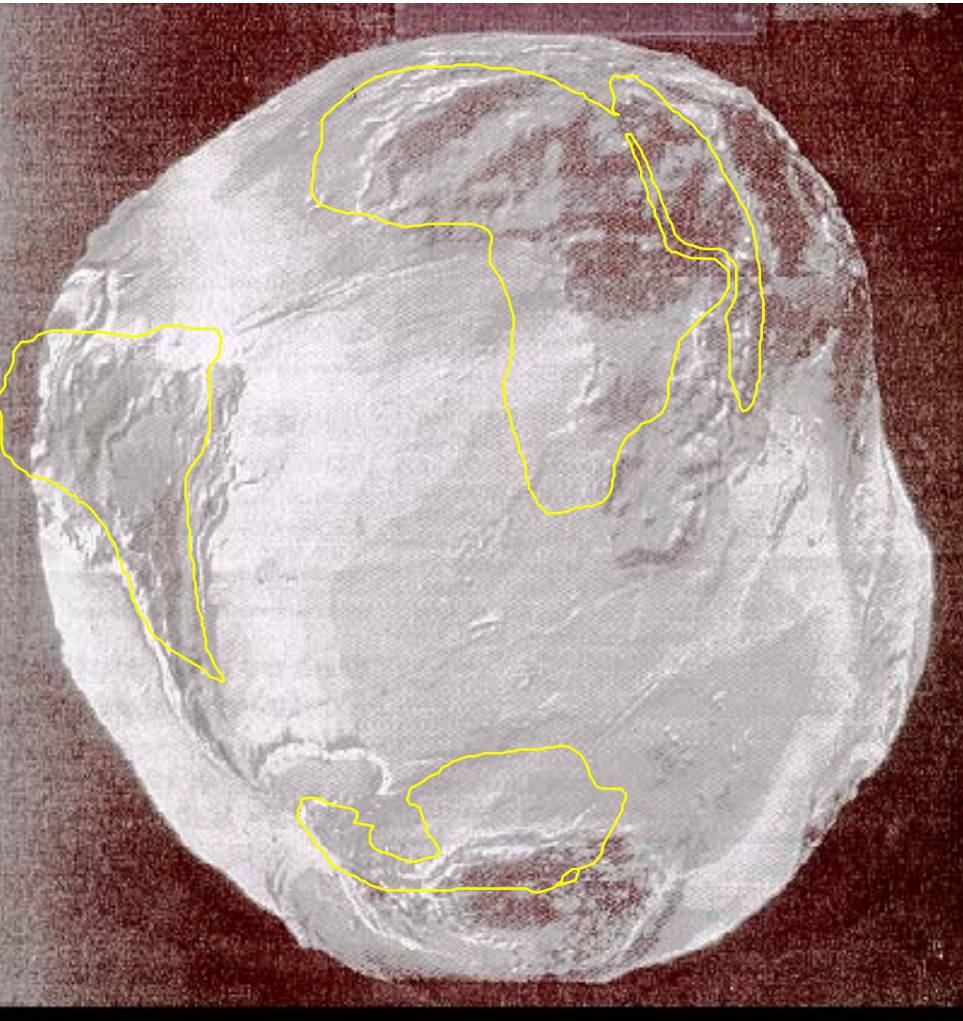
Most widely used local Datum/Ellipsoid pairs



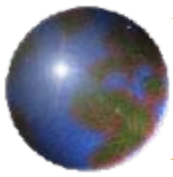


Satellite Observations of the Earth

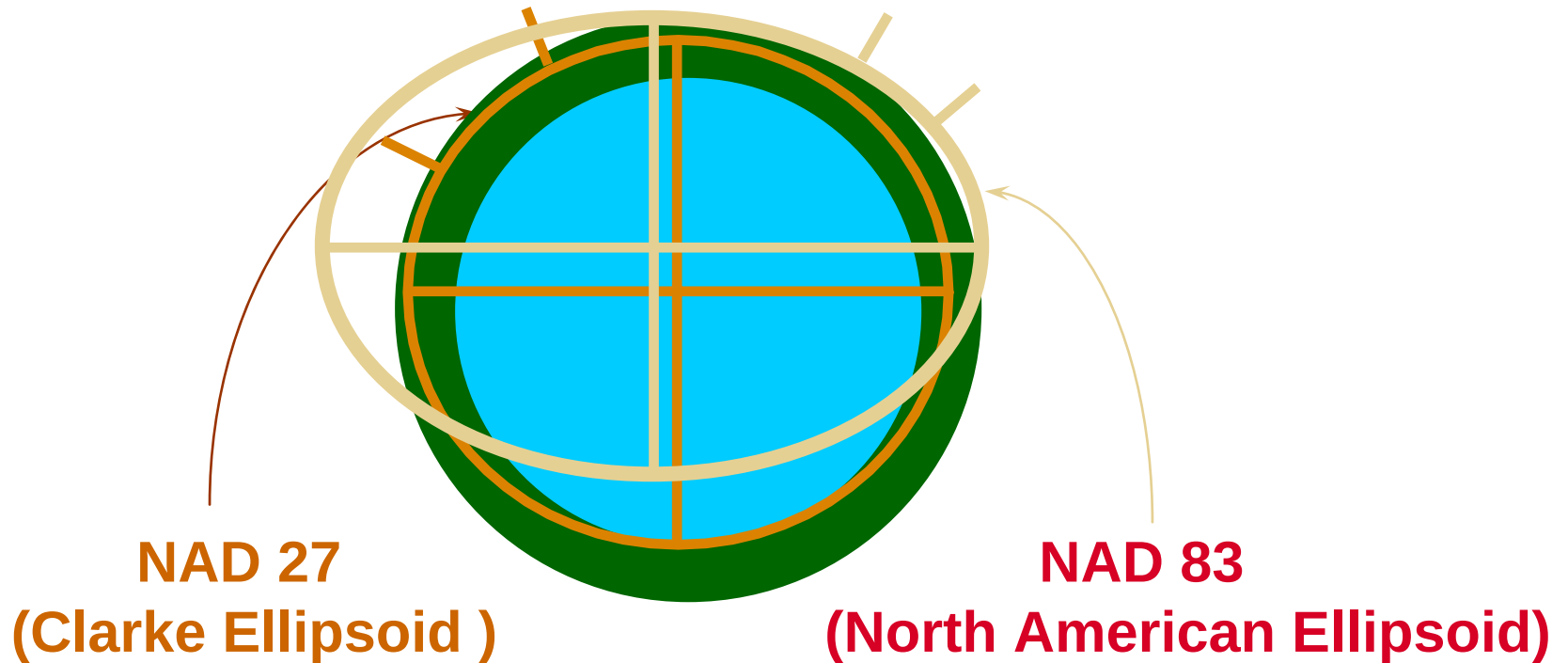
European Remote Sensing satellite, ERS-1 from 780Km

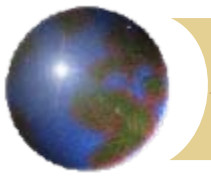


ERS-1 depicts the earth's shape without water and clouds. This image looks like a sloppily peeled potato, not a smoothly shaped ellipse.



Traditional Horizontal Datums

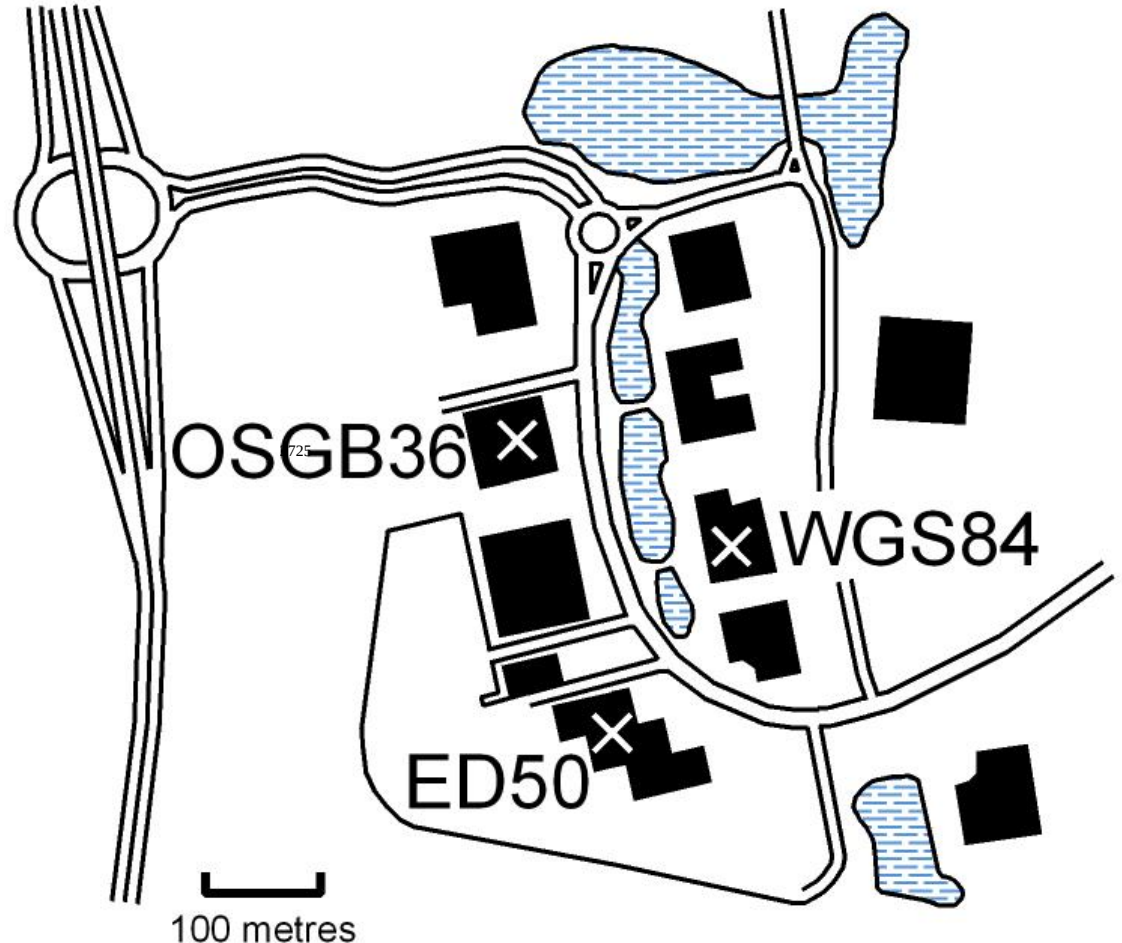


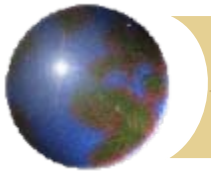


Example of various datum with same Latitude/Longitude

Datums are critical!

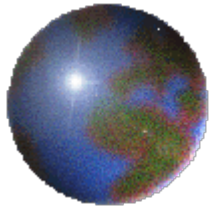
Report them in WGS84 or NAD83





NEXT STEPS!

- We want your data in the EPA's Central Repository (FRS) !
- We want it documented with MAD fields.
- We want it kept current as new values are generated or discovered.



Questions?

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