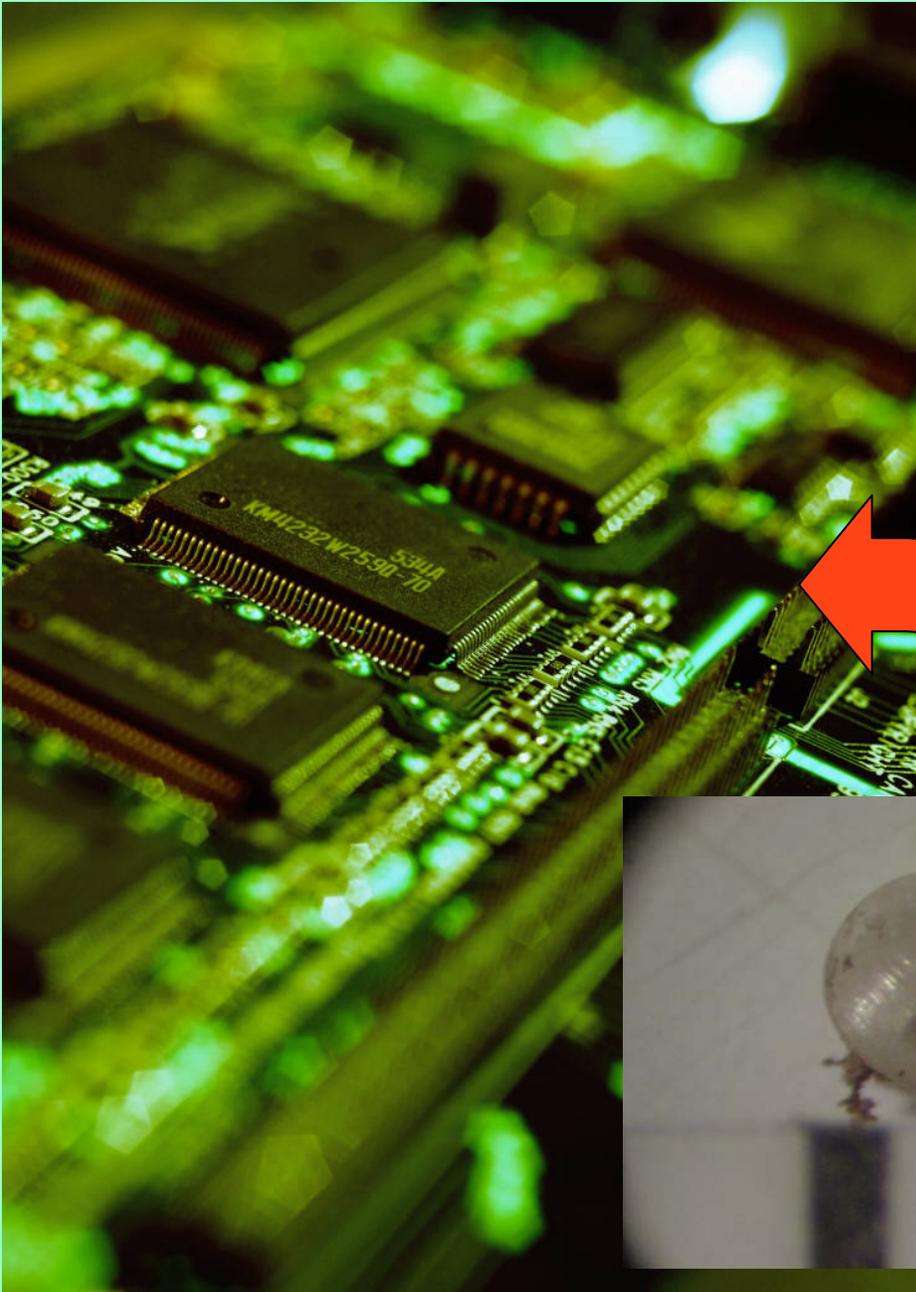


# DATA MANAGEMENT FOR INVERTEBRATES



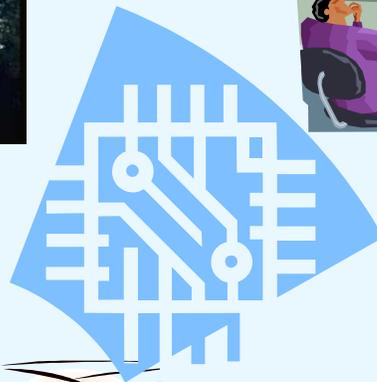
**Nancy  
Duncan**

Federal  
Interagency  
mollusk  
taxa "lead"



# The power of electronic data storage ...and the problems

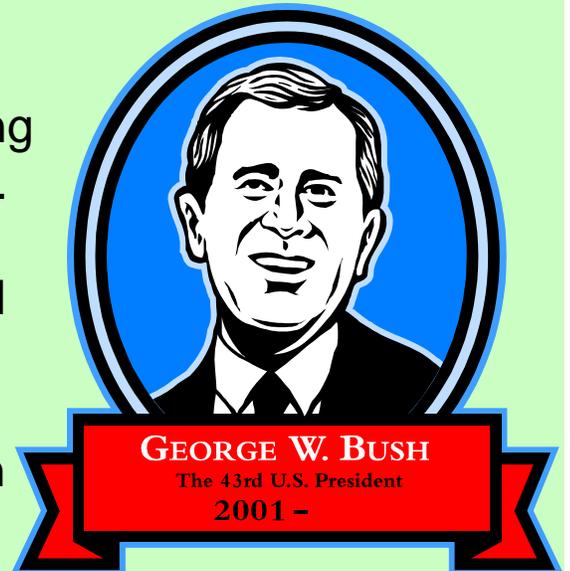
In order to use data to prove a point, someone first has to collect it and then enter it into a database...in an organized manner.



Then someone has to figure out what it all means.

Don't expect a benevolent "government" to make costly conservation decisions without having scientific information, AKA **PROOF**.

Most data on invertebrates is found scattered in many separate databases and file drawers – not centralized or available for decision makers to cite.



**This information is of various qualities, from unverified historic site "observations" .."near the town of" to precise demographic data from continuously monitored populations at known UTM coordinates.**

Risks of providing access to sensitive site locations  
(over-collecting, sabotage, mis-interpretation of data)  
vs. Benefits  
(prevent inadvertent loss or harm to sites, provide  
evidence of natural condition, trends)

**The more information is on  
the table, the better the  
decision will be.**

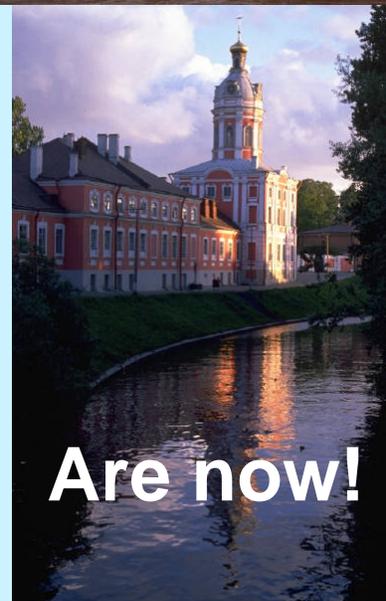
**Tighter requirements for listing species as sensitive:  
(Federal Special Status Programs, State T&E listings, ONHP)**

**Must show evidence of a trend, threats.**



**“Document the decline.” Joe Lint 1989**

# Document current conditions – (soon to be) historic, reference conditions of the future.



**Don't let the current baseline slip by unnoticed!**

**For mussels, there is no “image” of the reference condition – no data (must rely on water quality monitoring data)**



**Establish photo plots now!**

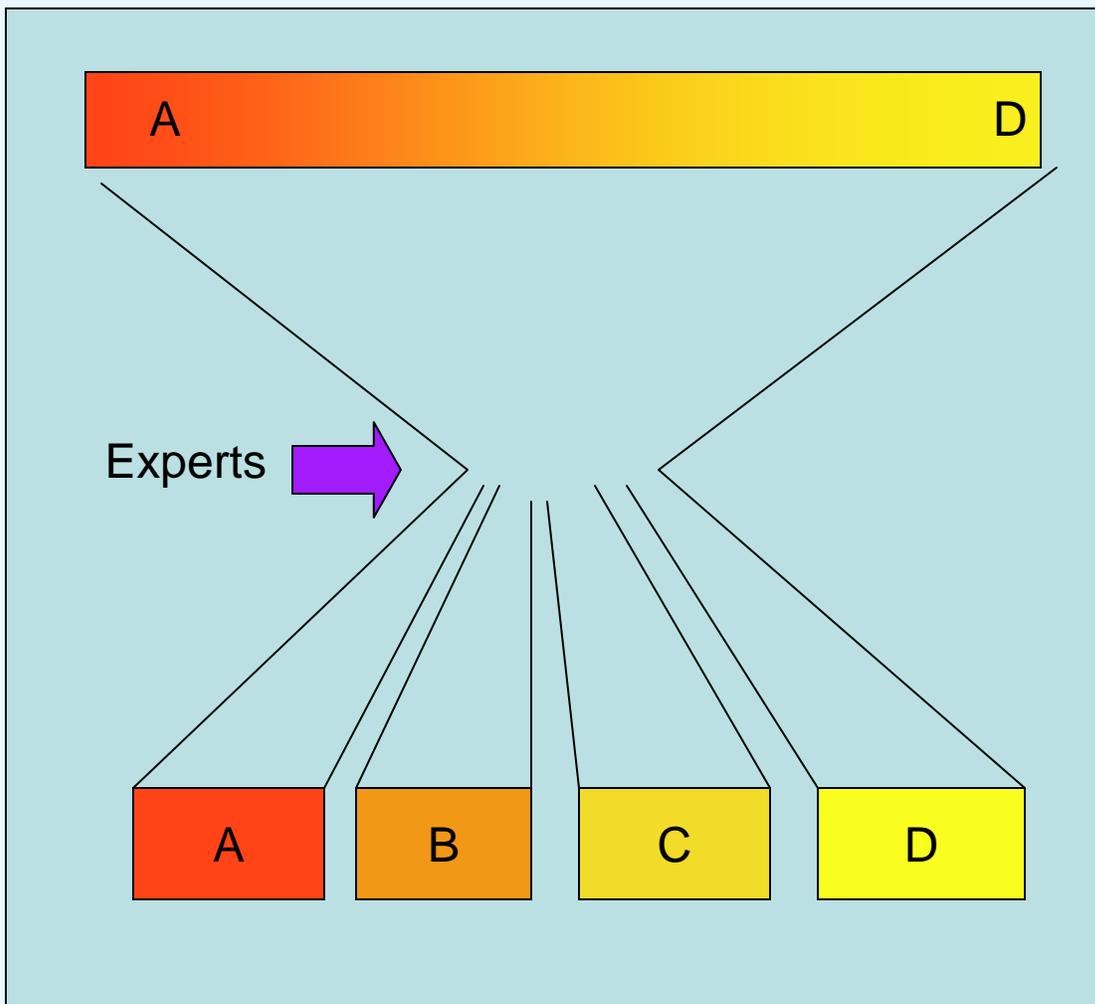
**Monitor the same place over time**

# DATA ACCURACY

## Taxonomic Identification

the human need to attach a name to something before we can think about it

Invert taxonomy takes a continuum and makes groups. Agencies manage species by species.



The smaller the entity, the finer the difference used to make a species – which results in more species described.

# Species description

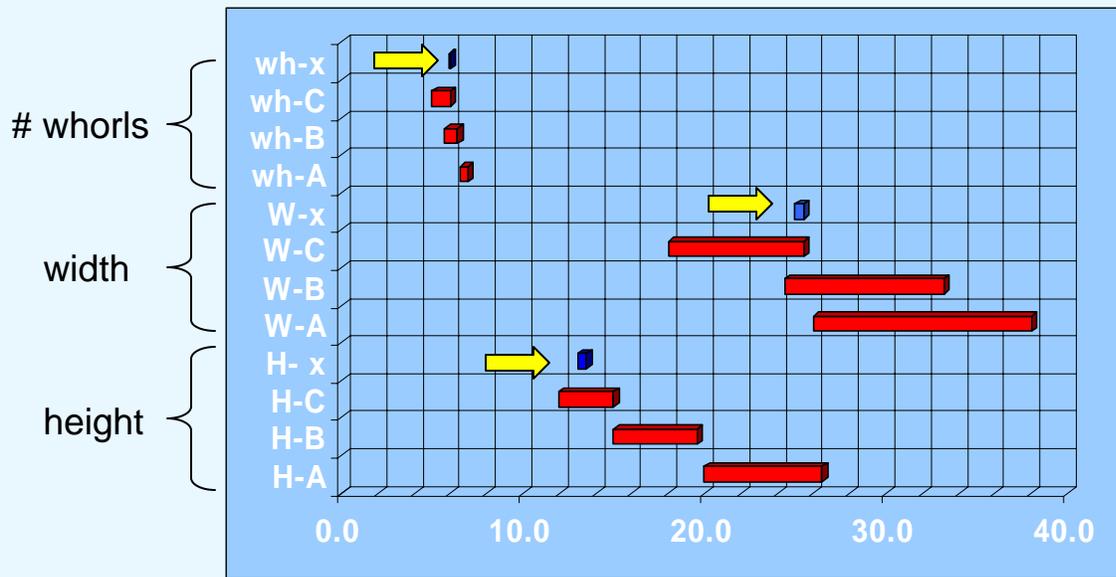
Official definition of “species” based on characteristics of “Type” specimen – may be atypical of the range of characters for others of the same “genetic clade” or population (taxonomy changes based on latest published articles)

**VS.**

# Practical taxonomy

**Invert species descriptions overlap. A species may have a range of values for a feature (such as # whorls, height, width, etc.) which may overlap with the range of values for other species. The whole suite of features for an unknown specimen must be considered together and compared to the range of values for possible described species in order to make the best possible identification.**

Specimen X is within range of values for species C.



What if it doesn't match any described species?

# VOUCHER SPECIMENS

The best way to have consistent data quality is to have a reference specimen on file for each location.

ACCESS to vouchers for comparison and ID is limited, making the ability for amateurs to do identification difficult.

- Digital photo database of NWFP S&M mollusk voucher collection (over 1000 specimens, 4 views each) linked to ISMS location records, on website
- Digital cross section microphotographs of shell layers (to document growth rates, heavy metals, water quality)
- Museum records, private collections ???  
(long response time for loaned specimens, fees)



NWFP mollusk voucher database

ID	Location	Species	Other Data
KLA02-228	DCA-10	Planorbis orbicularis	...
KLA02-229	DCA-10	Planorbis orbicularis	...
KLA02-230	DCA-10	Planorbis orbicularis	...
KLA02-231	DCA-10	Planorbis orbicularis	...
KLA02-232	DCA-10	Planorbis orbicularis	...
KLA02-233	DCA-10	Planorbis orbicularis	...
KLA02-234	DCA-10	Planorbis orbicularis	...
KLA02-235	DCA-10	Planorbis orbicularis	...
KLA02-236	DCA-10	Planorbis orbicularis	...
KLA02-237	DCA-10	Planorbis orbicularis	...
KLA02-238	DCA-10	Planorbis orbicularis	...
KLA02-239	DCA-10	Planorbis orbicularis	...
KLA02-240	DCA-10	Planorbis orbicularis	...
KLA02-241	DCA-10	Planorbis orbicularis	...
KLA02-242	DCA-10	Planorbis orbicularis	...
KLA02-243	DCA-10	Planorbis orbicularis	...
KLA02-244	DCA-10	Planorbis orbicularis	...
KLA02-245	DCA-10	Planorbis orbicularis	...
KLA02-246	DCA-10	Planorbis orbicularis	...
KLA02-247	DCA-10	Planorbis orbicularis	...
KLA02-248	DCA-10	Planorbis orbicularis	...
KLA02-249	DCA-10	Planorbis orbicularis	...
KLA02-250	DCA-10	Planorbis orbicularis	...
KLA02-251	DCA-10	Planorbis orbicularis	...
KLA02-252	DCA-10	Planorbis orbicularis	...
KLA02-253	DCA-10	Planorbis orbicularis	...
KLA02-254	DCA-10	Planorbis orbicularis	...
KLA02-255	DCA-10	Planorbis orbicularis	...
KLA02-256	DCA-10	Planorbis orbicularis	...
KLA02-257	DCA-10	Planorbis orbicularis	...
KLA02-258	DCA-10	Planorbis orbicularis	...
KLA02-259	DCA-10	Planorbis orbicularis	...
KLA02-260	DCA-10	Planorbis orbicularis	...
KLA02-261	DCA-10	Planorbis orbicularis	...
KLA02-262	DCA-10	Planorbis orbicularis	...
KLA02-263	DCA-10	Planorbis orbicularis	...
KLA02-264	DCA-10	Planorbis orbicularis	...
KLA02-265	DCA-10	Planorbis orbicularis	...
KLA02-266	DCA-10	Planorbis orbicularis	...
KLA02-267	DCA-10	Planorbis orbicularis	...
KLA02-268	DCA-10	Planorbis orbicularis	...
KLA02-269	DCA-10	Planorbis orbicularis	...
KLA02-270	DCA-10	Planorbis orbicularis	...
KLA02-271	DCA-10	Planorbis orbicularis	...
KLA02-272	DCA-10	Planorbis orbicularis	...
KLA02-273	DCA-10	Planorbis orbicularis	...
KLA02-274	DCA-10	Planorbis orbicularis	...
KLA02-275	DCA-10	Planorbis orbicularis	...
KLA02-276	DCA-10	Planorbis orbicularis	...
KLA02-277	DCA-10	Planorbis orbicularis	...
KLA02-278	DCA-10	Planorbis orbicularis	...
KLA02-279	DCA-10	Planorbis orbicularis	...
KLA02-280	DCA-10	Planorbis orbicularis	...
KLA02-281	DCA-10	Planorbis orbicularis	...
KLA02-282	DCA-10	Planorbis orbicularis	...
KLA02-283	DCA-10	Planorbis orbicularis	...
KLA02-284	DCA-10	Planorbis orbicularis	...
KLA02-285	DCA-10	Planorbis orbicularis	...
KLA02-286	DCA-10	Planorbis orbicularis	...
KLA02-287	DCA-10	Planorbis orbicularis	...
KLA02-288	DCA-10	Planorbis orbicularis	...
KLA02-289	DCA-10	Planorbis orbicularis	...
KLA02-290	DCA-10	Planorbis orbicularis	...

ISMS database

Specimen KLA02-244

**United States Department of Agriculture  
Forest Service R-6, R-5  
United States Department of Interior  
OR/WA, CA Bureau of Land Management**

**Reply Refer To:** 2360 (FS)/1736PFP (BLM) (OR-935) P

**Date:** 04/09/2004

**FS-Memorandum EMS TRANSMISSION 04/13/2004**

**BLM-Information Bulletin No. OR-2004-106**

**To:** All District Managers and Field Managers and Field Managers and Forest Service Supervisors

**Subject:** Data Management Decisions for Survey and Manage and Special Status Species Programs

**Interim Data Management**

**Direction for FY04:**

California BLM, Oregon/Washington (OR/WA) BLM, and FS, R-6 will continue to input S&M species that are being recategorized as SSS into the Interagency Species Management System (**ISMS**) until **NRIS** accommodates the information on these species.

FS, R-5 expects to stop using ISMS and transition to NRIS Fauna, or in the case of NRIS TES Plants, to an interim database solution. The exact details will be worked out in the next couple of months.

**Other work in FY04:**

ISMS will be streamlined and upgraded to ArcGIS by the end of FY04. User requirements will be completed for other SSS taxa by the end of FY04. Requirements that are consistent with the geodatabase model will be accommodated in the new geodatabase.

OR/WA BLM will decide by the end of FY04 whether or not to transition all SSS to the upgraded ISMS (both east and westside) or continue using existing district SSS databases.

**NRIS Technical Feasibility Study**

The executives have also directed the ISMS team to work with others in the BLM and FS to develop a Technical Feasibility Study on the BLM using Fauna and TES Plants from the NRIS as a BLM SSS data management system. The following steps will be implemented:

1. Develop an Interagency Agreement with goals, tasks, participants, and schedule.
2. Prepare a Technical Feasibility Study to determine if it makes sense economically and technically for the OR/WA BLM to become a client of the FS NRIS Fauna and TES Plants business areas
3. The executives will decide whether to implement a test pilot to try the NRIS application out at one or two districts in consultation with field office managers.
4. After a test period, another decision would be made on whether the two agencies will bring OR/WA BLM onto the NRIS system.

## **Other possible databases to track aquatic species:**

**ARIMS** –Aquatic Resources Inventory Management System  
contains fields for invertebrate water quality data  
linked to points based on distance from mouth of stream

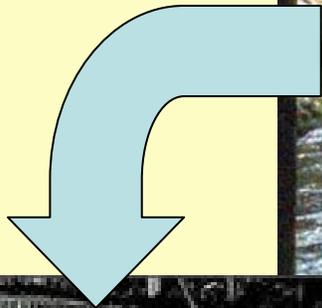
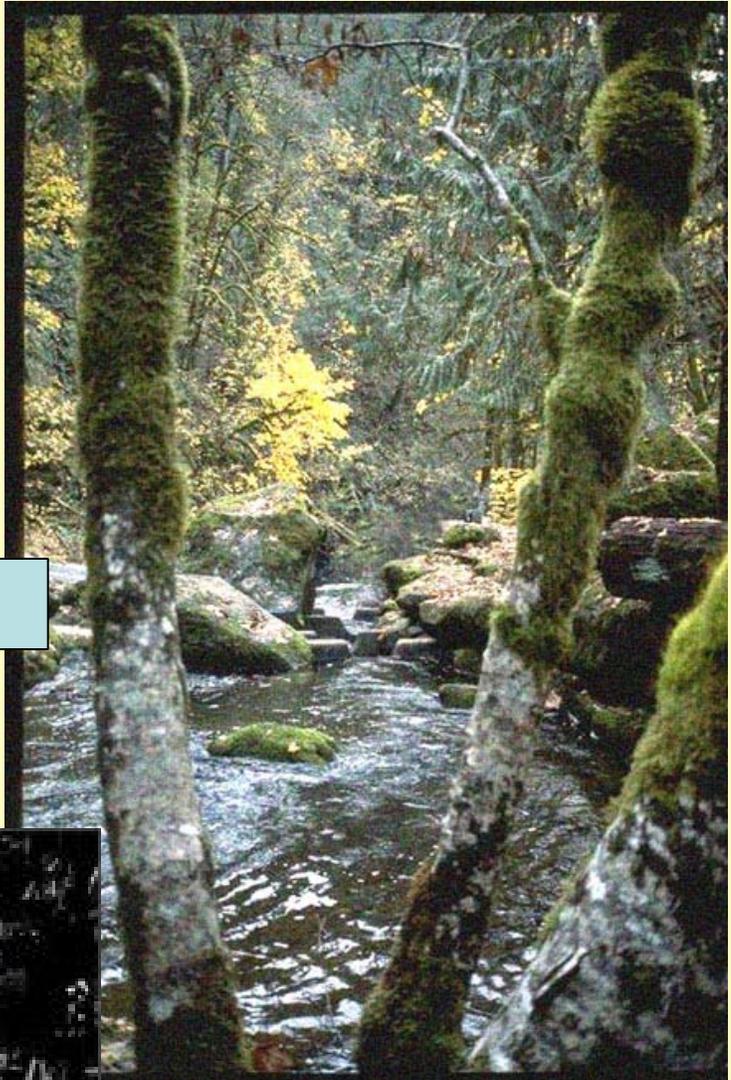
**ODFW fish habitat inventory** – ongoing documentation  
of physical condition of selected streams, from field data  
linked to individual stream segments  
contains fields for fish species occurrence  
could add other aquatic wildlife species location data

**StreamNet** database – (formerly WRIS)  
NED (Northwest Environmental Database) +  
CID (Coordinated Information System)  
managed by WDFW and PSMFC (Pacific States Marine  
Fisheries Commission)  
contains data on fish distribution and abundance  
in Idaho, Montana, Oregon and Washington

**Nature Serve** – Natural Heritage Database  
Global and state rankings  
Linked to point and polygon “occurrences”  
serves as basis for BLM sensitive species lists  
(OR/WA BLM now includes seven species of bi-valves)



**Why do you resist?  
We only wish to raise  
quality of life for all  
species.**



**You will be assimilated.  
Resistance is futile.**