SUBCOMMITTEE ON SEDIMENTATION

Report to the Advisory Committee on Water Information

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SOS MEMBERSHIP – 15 organizations

- Agricultural Research Service
- American Society of Civil Engineers
- Consortium of Universities for the Advancement of Hydrologic Science
- Bureau of Land Management
- Colorado Water Resources Research Institute
- Federal Highway Administration
- Forest Service
- National Center for Earth-surface Dynamics
- National Oceanic and Atmospheric Administration
- Office of Surface Mining
- Bureau of Reclamation
- University Councils on Water Resources
- Army Corps of Engineers
- U.S. Environmental Protection Agency
- U. S. Geological Survey

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DAM REMOVAL/SEDMENT MANAGEMENT

- Goal: Develop guidelines for managing sediments impounded by dams slated for removal
- Workshops held in 2008 (Portland, OR) and 2009 (State College, Pennsylvania)
- Guidelines written and evaluated via test cases
- ASCE might publish the guidelines
- Bureau of Reclamation Lead

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- Goal: Render river morphology data accessible for scientific and management community.
- EPA, NRCS, NOAA, BR, CUAHSI, USGS
- Draft database elements identified (June 2010)
- Workgroup deliberating – progress slow

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Workgroups

- Federal Interagency Sedimentation Conference
- Dam Removal Sediment Analysis
- National Geomorphic Database
- Reservoir Sedimentation Database

RESSED

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What Is RESSED?

- Originally an SCS paper database
- Changes in capacities computed from surveyed bathymetric data (+/- acre feet/year)
- 1,824 reservoirs, 6,618 surveys, lower US, 1:PR
- Based on Soil Conservation Service Form 34 (1953)
- ?Presumed to be largest such database for US?
- From an unmarked cardboard box, 1993… a…work…in…progress

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RESERVOIR SEDIMENTATION DATABASE (RESSED: http://ida.water.usgs.gov/ressed/)

- Short-Term Goal: Render current static database dynamic (updatable and queryable).
- Long-Term Goal: Develop a truly national, robust, reservoir sedimentation database
- Status: On-line as static MS Access DB (4/2009)
- COE-USGS RESSED-Filemaker Pro project: Render RESSED updatable/queryable, FY10 (COE-USGS project, COE funded – J. Webb)

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A QUICK (AND INCOMPLETE) LOOK AT RESERVOIR SEDIMENTATION RATES

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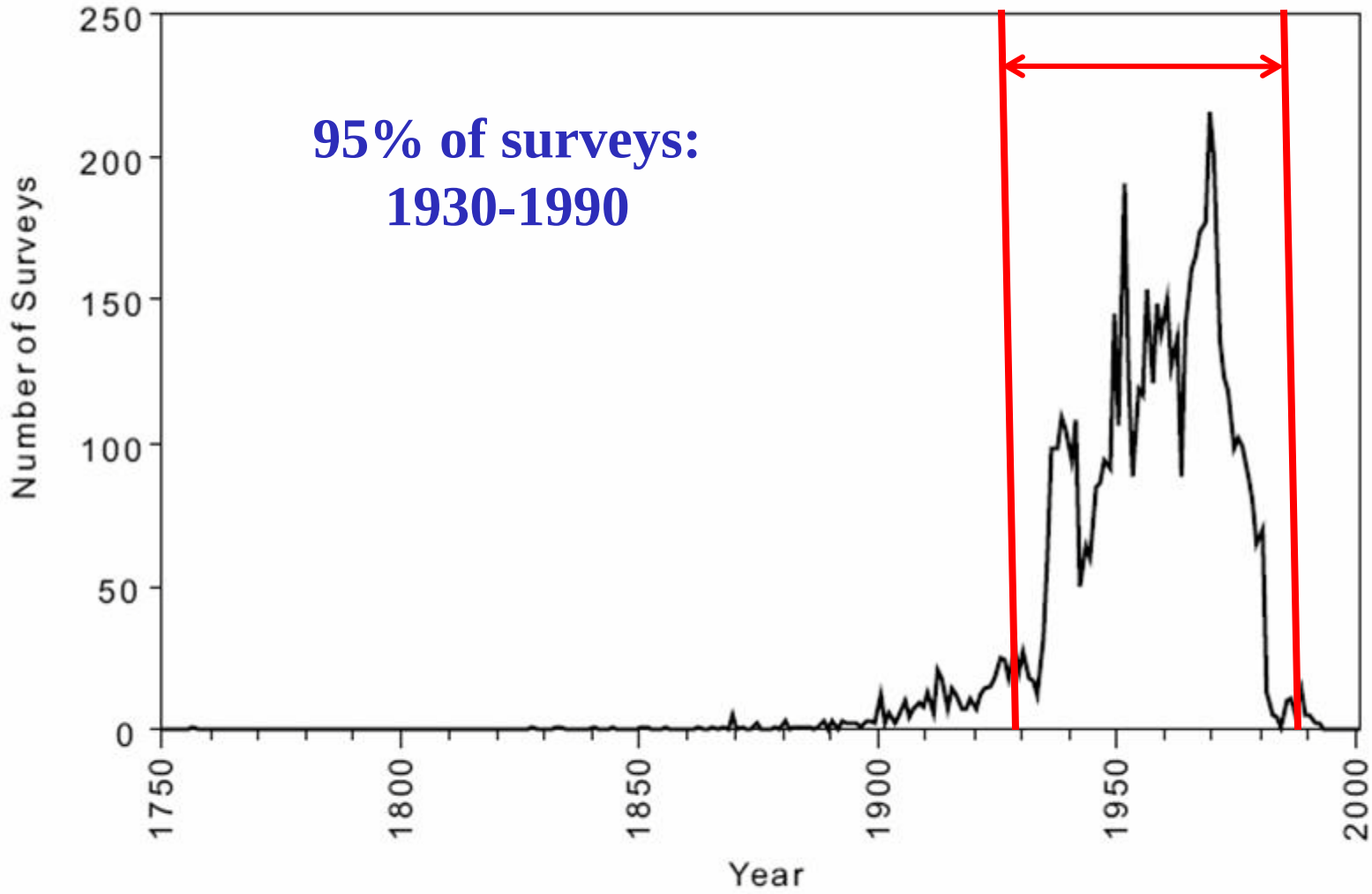
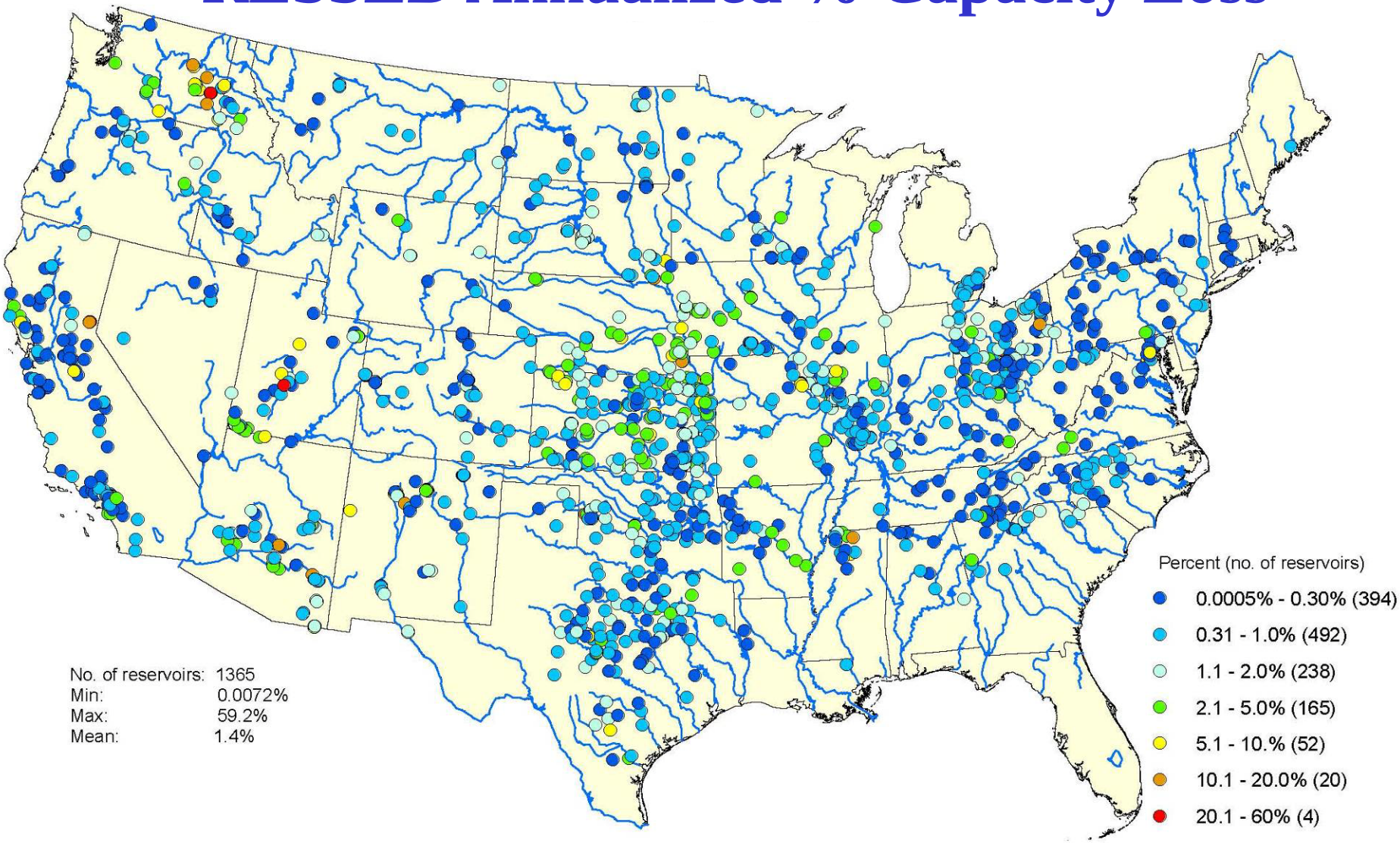
RESSED Reservoir Surveys by Year



RESSED Annualized % Capacity Loss



~82%: <2% capacity loss/year (1,124/1,365 reservoirs)

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Extrapolated to 2010 Total % Capacity Loss

- AND ~24% HAVE LOST >100% CAPACITY???
- "I wouldn't bet a penny that this shows accurate current conditions" (data analyst Dave Stewart, USGS, 7/13/10).
- **Unfortunately, *no one knows* (on a national scale).**
- **EVEN IF REALITY IS SOMEWHERE IN BETWEEN**

IF "WHISKEY'S FOR DRINKIN', WATER'S FOR FIGHTIN'" -- WHAT DOES THIS PORTEND FOR THE FUTURE OF THE NATION'S WATER SUPPLIES?

~39% have lost > 60% capacity (535/1,365 reservoirs)

SOME MATH TO PUT RESSED IN PERSPECTIVE

- As of 7/2010,

  -1,824 reservoirs in RESSED

  - ~80,000 dams (ergo reservoirs?) in the National Inventory of Dams

  - ~?6 million – 9 million impoundments in the U.S. (USGS National Hydrography Dataset; Renwick, Miami of Ohio)

- Hence, the number of reservoirs in RESSED are:
  - ~2% of number of dams in the NID (but not all cross-listed)
  - ~0.03% of U.S. impoundments

RESSED Reservoirs are much less than the "tip of the iceberg"

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Ergo….

THE NATION NEEDS A CAREFULLY DESIGNED AND MAX-POPULATED NATIONAL "RESSED-FUTURE"

- UNRESTRICTED ACCESS/USE
- LINKED TO OTHER DATABASES (NID, STREAMSTATS…)
- UPDATABLE AND QUERYABLE
- CAPABLE OF STORING ALL RELEVANT DATA
- ANALYZABLE LOCAL, REGIONAL, NATIONAL SCALES

A PERMANENT RESSED PROGRAM IS NEEDED

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NATIONAL RESSED POST 2010

By September 2011, the SOS will have taken RESSED as far on "internal resources" as possible

- **RESOURCES REQUIRED**

  ~$250K/year for each of 4 years
  ~$75K/year thereafter

- **The SOS seeks the ACWI's assistance toward RESSED program development.**

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The ~~End~~ Beginning?

http://ida.water.usgs.gov/ressed/

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