Project Summary

For

Project Evaluation and Review Committee

Portland, OR

September 13, 2012

Bruce Schmidt

Pacific States Marine Fisheries Commission

What is StreamNet?

- **Cooperative project under the Fish and Wildlife Program**
  - Data sharing project, not a 'database project'
    - Majority of project is working with the data
    - Develop databases and tools just to support data sharing
    - Specific types of data, usually summarized annually
  - Cooperative:
    - We work among the agencies to locate, assemble and share data
    - Agencies have not had a need or mandate to share data regionally
    - We bridge the gap between agencies' local data and regional needs
    - No single agency has a mission to support a regional scale program

What is StreamNet?

- Cooperative project under the Fish and Wildlife Program
- **Services to provide fish data at regional scale**
  - Disseminate data across agencies and tribes
  - Standardize data
  - Source references in StreamNet Library (CRITFC)
  - Georeference data to the stream network (hydrography)
  - Customized response to requests
    - Frequent requests for help, specific data, etc.
    - Larger requests from partner agencies, regional entities:
      - Less frequent, but can take time, $

What is StreamNet?

- Cooperative project under the Fish and Wildlife Program
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  - Standardize data
  - Source references in StreamNet Library (CRITFC)
  - Georeference data to the stream network (hydrography)
  - Customized response to requests
  - Save and provide access to historic data sets
    - Protected Areas
    - HSRG data
    - Subbasin planning data
    - Archive data (StreamNet 'Data Store')

What is StreamNet?

- Cooperative project under the Fish and Wildlife Program
- Services to provide fish data at regional scale
- **Services to data source agencies**
  - Shoulder workload for data requests
  - Provide data support
  - Provide system development support
    - Idaho Fish & Wildlife Information System
    - Data flow to Salmon Recovery Tracker
    - Support development of JMX, other databases
    - Needs assessment for Shoshone-Bannock Tribes
    - Promote means to improve data efficiency
  - Disseminate only approved data

Who is StreamNet?

- Steering Committee:
  - CRITFC – Phil Roger
  - IDFG – Bart Butterfield
  - MFWP – Dawn Anderson
  - ODFW – Cedric Cooney
  - USFWS – Steve Pastor
  - WDFW – Brodie Cox
- Program Manager (leads SC)
  - Bruce Schmidt
- BPA COTR (not a voting SC member)
  - Anne Creason

Steering Committee Roles

- Technical steering group
  - Data standardization
  - Data availability
  - Formatting
  - Timing
  - Manage respective projects
  - Decision making on technical issues
  - Interact with Technical Committee
- Members do not represent policy level in their agencies
- Members tasked with coordinating with their agency
- Represent their agency as directed from policy level

PSMFC Staff

- Bruce Schmidt, Program Manager
  - Project management, administration, coordination
- Bill Kinney, Database Manager
  - Receives & loads data, QA/QC, database design, data management
  - Manages Technical Committee
- Mike Banach, Project Biologist
  - Customer service, integrates biology and IT, assures data display makes biological sense, Data Exchange Format, Data Store
- Van Hare, GIS Specialist
  - All location related issues, mapping, hydrography
- Greg Wilke, Web Programmer
  - Built and maintains data query system, manages website

Project Scope

- Four States
  - Washington
  - Oregon
  - Idaho
  - Montana
- Columbia Basin
- Data from outside the Columbia Basin
  - Oregon coast: ODFW contract with NOAA Fisheries
  - Puget Sound, coast: data from corporate WDFW databases
    - Barriers and Spawning Ground Surveys
    - 'Snapshot' gets all. Easier to keep it all than take time to cull data
    - No StreamNet funding to support internal WDFW databases
 - Approved by BPA years ago

StreamNet History

1984   1988   1990   1992   1994   1996   1998   2000
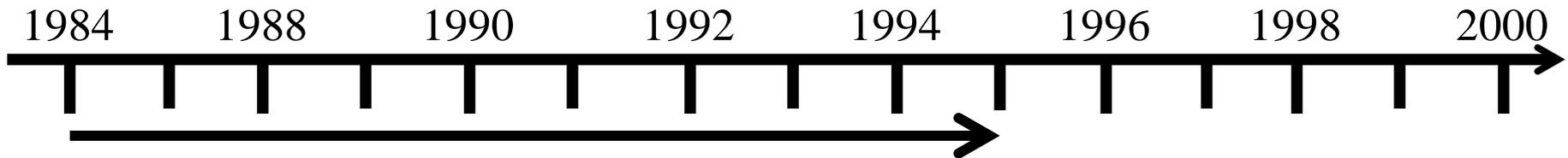
Hydro Assessment Study /Pacific Northwest Rivers Study (PNRS)

- Produced a consistent and verifiable river resource database
  - Resident fish, wildlife, cultural & natural features, recreation, stream protection, hydropower development and potential, etc.
- Protected Areas
  - Protected >40,000 miles of stream from hydropower development
  - PNRS was renamed the Northwest Environmental Database (NED)
- Funding outside FWP, each agency direct contract w/ BPA, 1984-1995
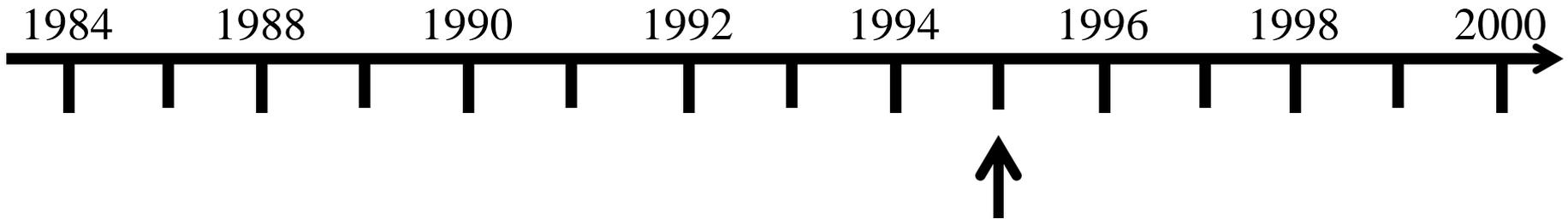
StreamNet History

1984   1988   1990   1992   1994   1996   1998   2000
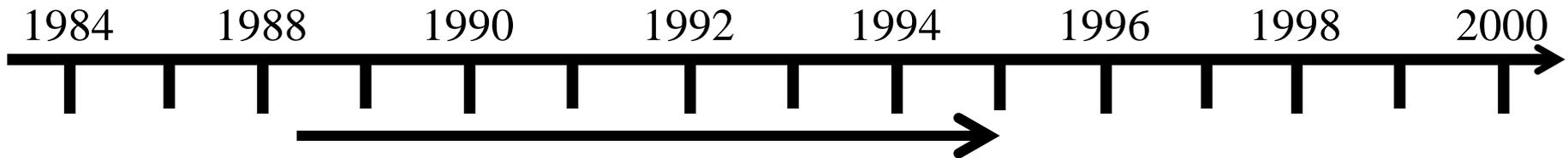
Coordinated Information System (CIS)

- From first Subbasin Planning effort
- Created a regional data system
- Scope: anadromous fish range in Columbia Basin
- Described in Section 3.3 of CRB Fish & Wildlife Program

StreamNet History

1984   1988   1990   1992   1994   1996   1998   2000

StreamNet formed

- Merged Coordinated Information System (CIS) and Northwest Environmental Database (NED)
- Administration by PSMFC
- Subcontracts with participating agencies/tribes
- Funding from Anadromous Fish Group under FWP

StreamNet History

1984   1988   1990   1992   1994   1996   1998   2000
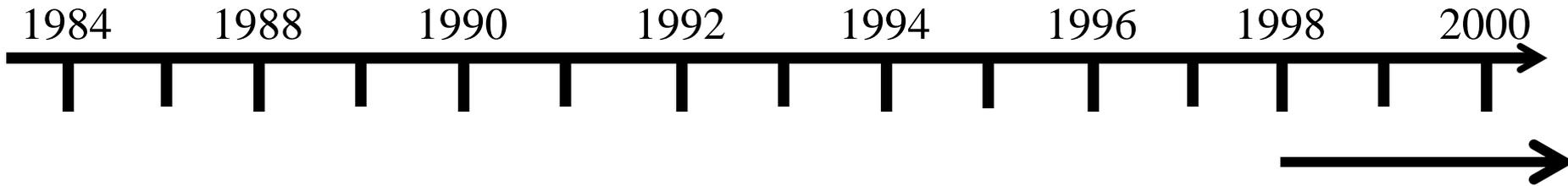
Data dissemination by Internet initiated

- Custom built online data query
- Powerful, advanced for its time
- Consolidated data assembled by a contractor
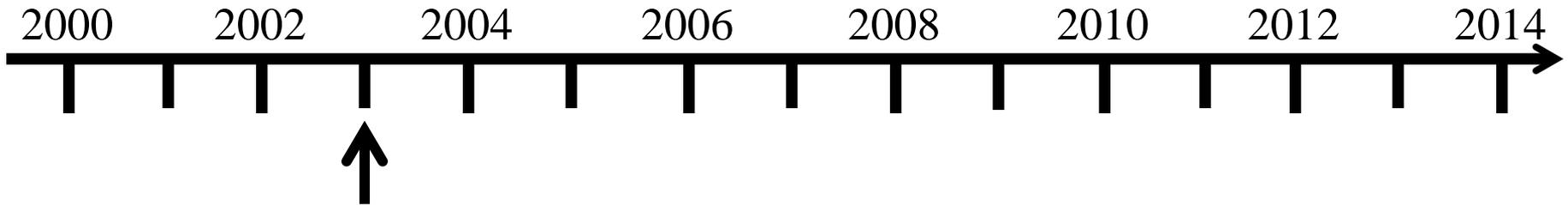- Subsequent data management by StreamNet partners

StreamNet History

2000   2002   2004   2006   2008   2010   2012   2014
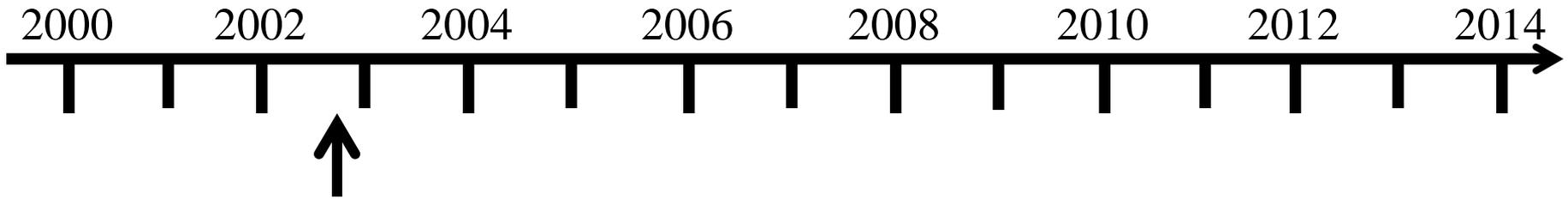
- **Interactive Mapper**
  - View data on map
  - Query data by map
  - Locate and download data

StreamNet History

2000   2002   2004   2006   2008   2010   2012   2014
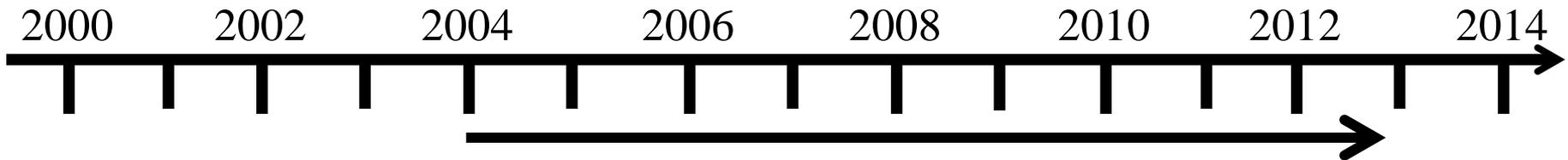
- **Upgraded tabular data query to 'off the shelf' software**
  - ○ Easier maintenance, upgrade
  - ○ Simple to add new features
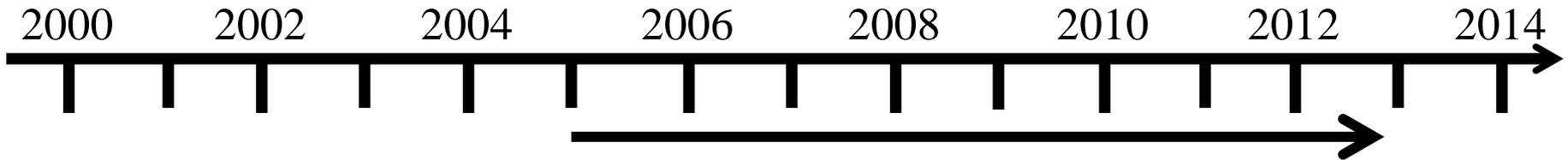 - ○ Less dependent on a single programmer

StreamNet History

2000   2002   2004   2006   2008   2010   2012   2014

- **Opened the "Data Store"**
  - Online archive for data sets
  - Accepts data in any format
  - Means for projects to share data
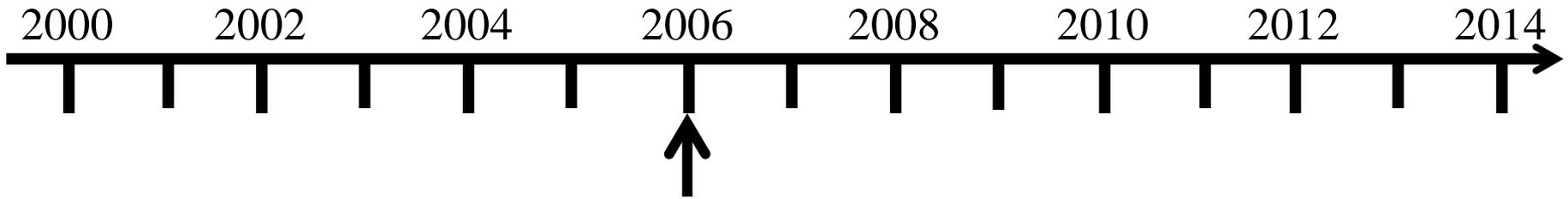 - A location to look for and obtain data sets

StreamNet History

2000   2002   2004   2006   2008   2010   2012   2014

Critical Habitat mapper

- Developed under contract with NOAA Fisheries
- Displays areas of designated Critical Habitat, by species

StreamNet History
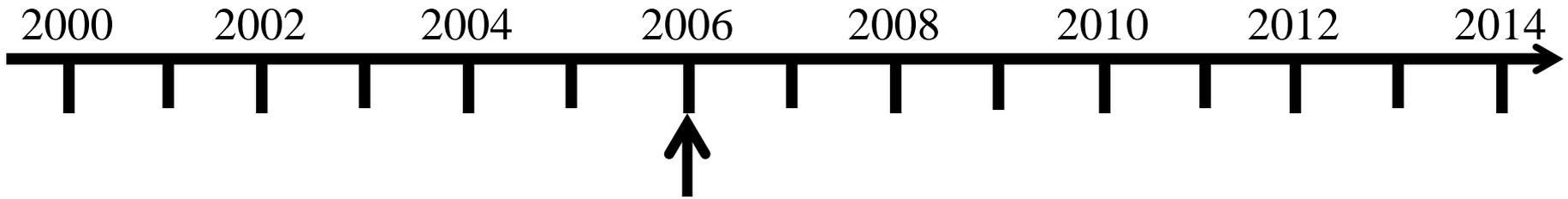
2000　　2002　　2004　　2006　　2008　　2010　　2012　　2014

- **Posted data from Subbasin Planning**
  - CRITFC consolidated the data
  - StreamNet archived the data

StreamNet History

2000 2002 2004 2006 2008 2010 2012 2014

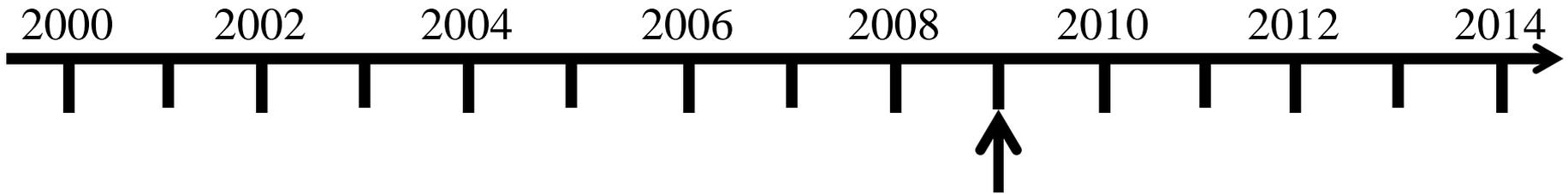- **StreamNet Strategic Plan**
  - First edition
  - States goals of:
    - Increased efficiency
    - Need for data priorities
    - Strategy to automate data translation

StreamNet History

| 2000 | 2002 | 2004 | 2006 | 2008 | 2010 | 2012 | 2014 |

StreamNet Strategic Plan

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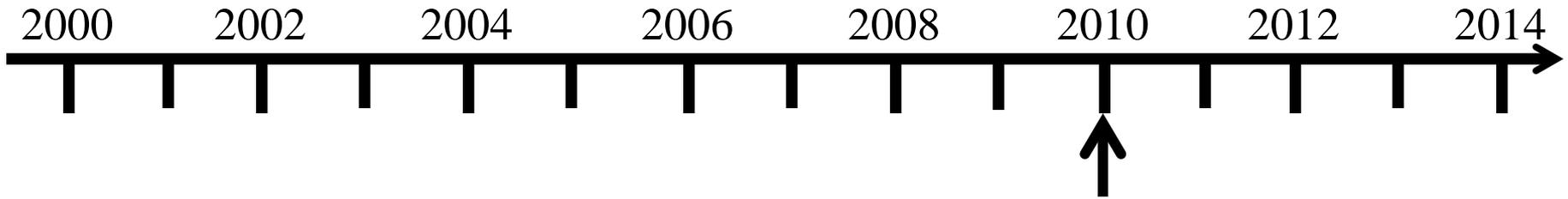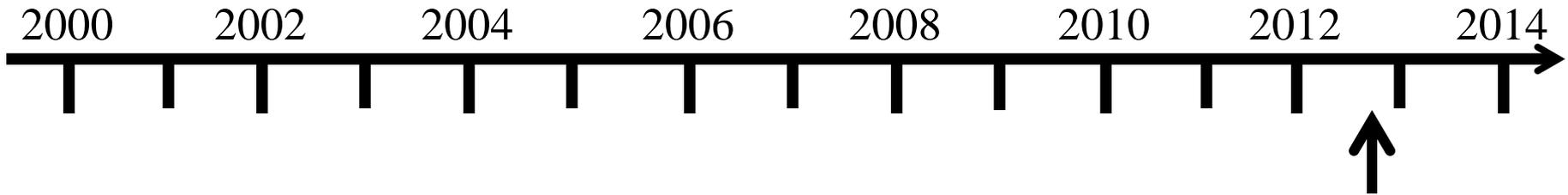 - Strategy to automate data translation
- Second edition

StreamNet History

2000   2002   2004   2006   2008   2010   2012   2014

- **Enhanced data query capability**
  - ○ Added means to locate streams by typing name

StreamNet History

2000 2002 2004 2006 2008 2010 2012 2014

- **Integrated Query System**
  - Integrates tabular and map based query approaches
  - Instantly view data set location
  - Instantly view data on chart
  - Multiple criteria at once
  - Create your own groupings of data (label)
  - Flexible layout
  - Adding types of data
    - Coordinated Assessments indicators and metrics
    - Data Store

StreamNet History – Custom Services

2000   2002   2004   2006   2008   2010   2012   2014
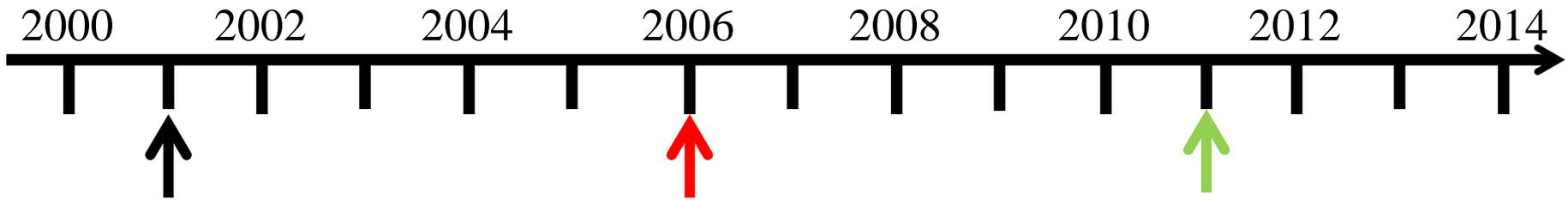
Adipose fin clipping data report for Council
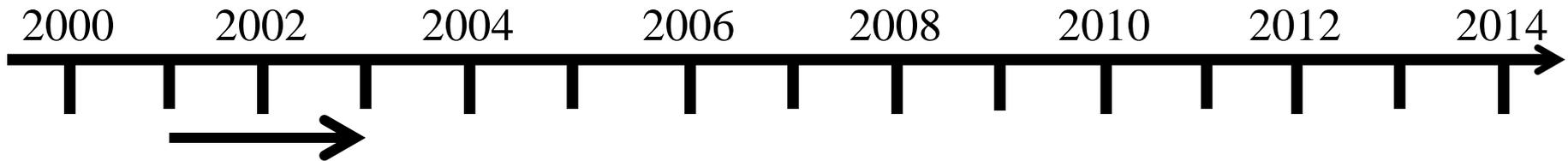
Test 'Monitoring Inventory' for PNAMP

Data Availability Survey for Coordinated Assessments

Regional Data Efforts

2000 2002 2004 2006 2008 2010 2012 2014

Science Application International Corp. data study

- Funded by Council
- StreamNet a strong participant
- Surveyed data needs/desires in agencies
- Participation was voluntary
- Produced a 'needs assessment', proposed regional system
- Not endorsed by data source agencies
- Did not address availability of data to a regional system

Regional Data Efforts

| 2000	2002	2004	2006	2008	2010	2012	2014
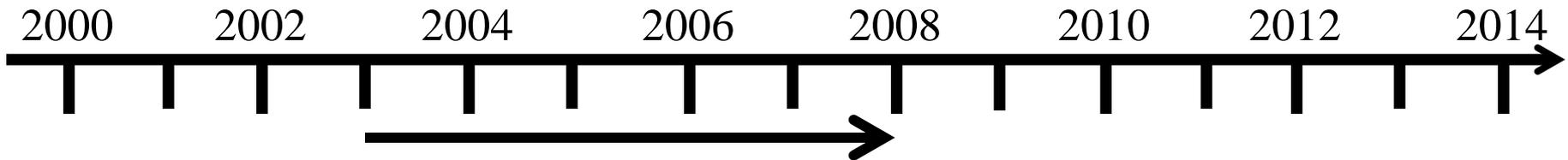
Northwest Environmental Data-network (NED)

- Grew out of SAIC group
- StreamNet a significant component
- Made up of data specialists, voluntary participation
- Produced several 'best practices' documents
- Promoted the CBCIS
- Developed the prototype 'NED Portal'
- StreamNet continued to disseminate data

# Regional Data Efforts

2000   2002   2004   2006   2008   2010   2012   2014
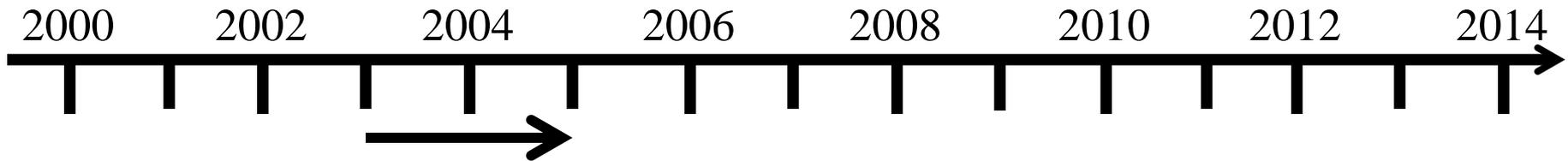
Columbia Basin Collaborative Information System (CBCIS)

- Regional scale data delivery system, promoted by NED
- StreamNet a strong participant
- Low priority for data source agencies
- Focused on the output application
- Hidden assumption: Data are available to the system
- StreamNet continued to disseminate data

Regional Data Efforts

| 2000 | 2002 | 2004 | 2006 | 2008 | 2010 | 2012 | 2014 |
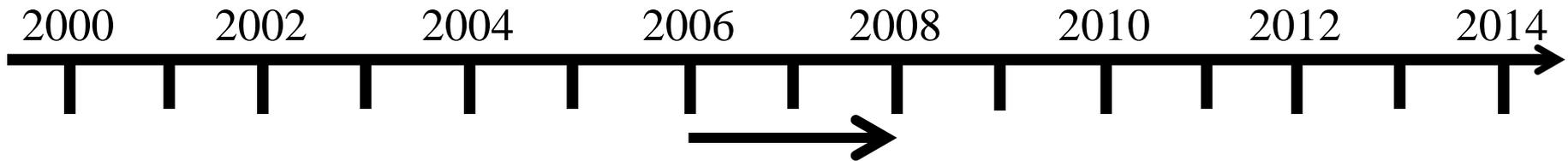
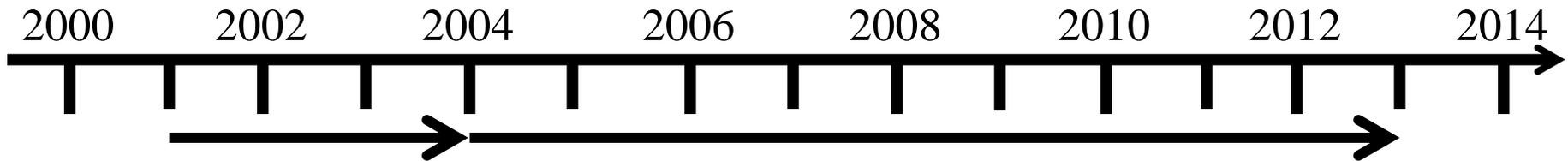**NED Portal**

- GIS technology, promoted by NED, funded by BPA
- Access to published GIS layers, metadata as web services
- StreamNet GIS layers and tabular metadata made available
- Hidden assumption: Data are available on the web
- StreamNet continued to disseminate data

Regional Data Efforts

2000   2002   2004   2006   2008   2010   2012   2014

**Pacific Northwest Aquatic Monitoring Partnership**

- Started as State/Federal Partnership
- Became PNAMP
  - Initially left data management to NED
  - Data Management Leadership Team
  - Metadata Work Group
- StreamNet a regular participant from beginning
- Membership voluntary
- StreamNet continued to disseminate data

Regional Data Efforts

2000   2002   2004   2006   2008   2010   2012   2014
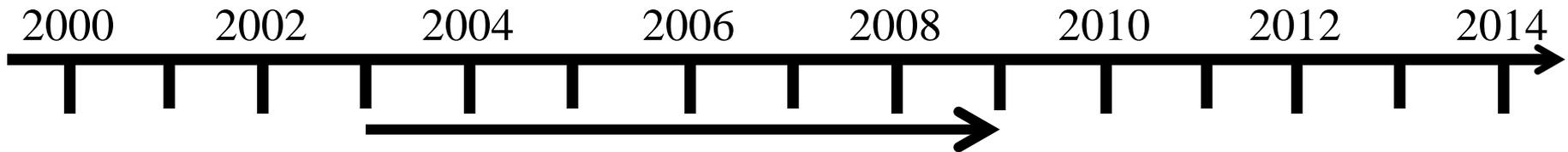
**Collaborative Systemwide Monitoring and Evaluation Project (CSMEP)**

- Managers, facilitated by CBFWA
- Goal: establish basin-wide monitoring approach
- StreamNet participated to support data management once monitoring needs established
- StreamNet goal: obtain consensus on data priorities
- StreamNet continued to disseminate data

Regional Data Efforts

2000   2002   2004   2006   2008   2010   2012   2014
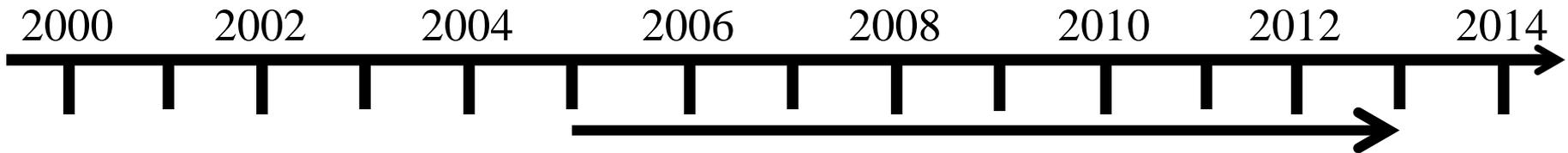
Status of the Resource report (SOTR)

- Developed, managed by CBFWA
- Ongoing tracking of population status
  - Population level indicators
  - 2 formats – reports and website
- StreamNet a significant source of data to SOTR
- StreamNet made SOTR data a priority
- Ready to provide automated data flow

Regional Data Efforts

| 2000 | 2002 | 2004 | 2006 | 2008 | 2010 | 2012 | 2014 |
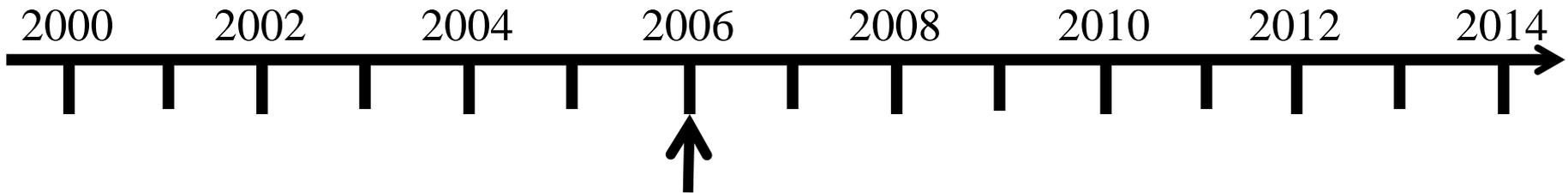
Data Needs Workshop

- Requested by StreamNet
- Organized by CBFWA
- Purpose: Prioritize data needs for StreamNet, NHI
- Laundry list of data needs
- Did not develop regional priorities
- Strongest recommendation: Data to SOTR

Regional Data Efforts

2000   2002   2004   2006   2008   2010   2012   2014
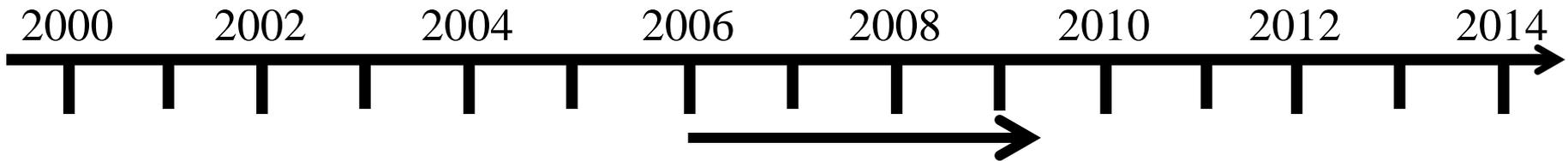
Data Management Framework Subcommittee

- CBFWS subcommittee
- Developed state/tribal input to data framework efforts
- StreamNet a regular participant

Regional Data Efforts

2000   2002   2004   2006   2008   2010   2012   2014
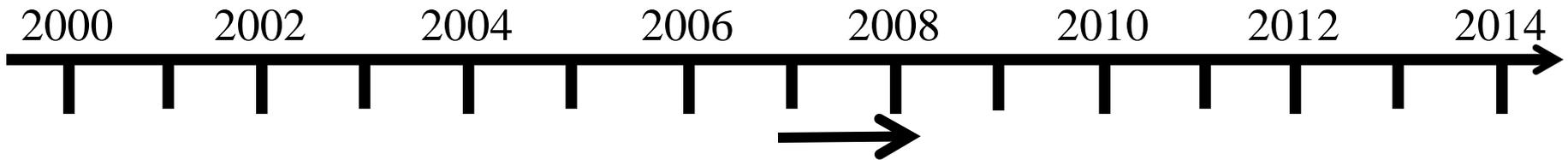
Executive Data Summit (NWEIS)

- ❧ Requested by NED, PNAMP
- ❧ Goal: establish goals and priorities for data sharing
- ❧ Addressed monitoring needs
- ❧ Left data management to last

Regional Data Efforts

2000   2002   2004   2006   2008   2010   2012   2014
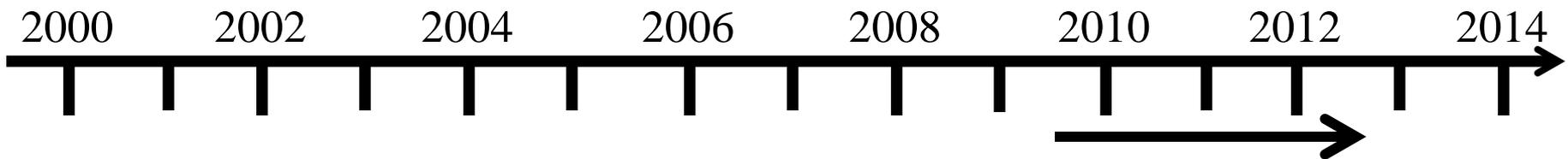
Coordinated Assessments

- Skamania workshops – managers, led by CBFWA
- Produced Anadromous Salmonid Monitoring Strategy
- **<u>Finally</u>**, agreement on data needs
- Coordinated Assessments project
  - Co-leads CBFWA and PNAMP
  - Focused on manageable number of indicators
  - Determined how available the data are (2011)
  - Approach: Build means to share initial indicators,
  - Use that platform to expand to additional data

Regional Data Efforts

2000   2002   2004   2006   2008   2010   2012   2014
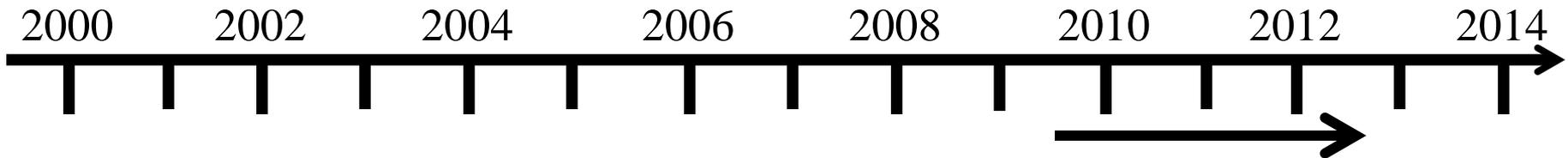
Coordinated Assessments

- Elements for Success:
  - Everyone 'at the table'. Integrated biologists, IT, & policy
  - Biologists led in defining data needs
  - Recognized common need
  - Careful assessment of capabilities, needs
- StreamNet actively involved
  - Supervised data specialists to evaluate data in agencies
  - Led development of Data Exchange Template
  - Needs assessment, support sharing of data

Regional Data Efforts

2000   2002   2004   2006   2008   2010   2012   2014
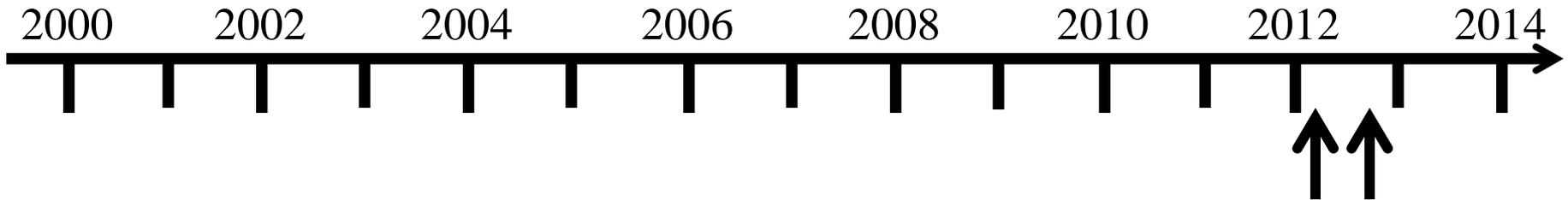
Categorical Review

PERC

Organization

Pacific States Marine Fisheries Commission
Partner sub-projects
      CRITFC – separate contract
      IDFG
      MFWP
      ODFW
      USFWS
      WDFW
Proposed to add:
      Colville Tribes
      Shoshone-Bannock Tribes
Would like to add resident-fish tribes

Staffing

PSMFC – 5 staff, 4.5 FTE

Partner sub-projects

   CRITFC –   2 Library staff

   IDFG –   4 staff, 3.0 FTE

   MFWP –   2 staff, 2 FTE (not project leader)

   ODFW –   8 staff, 4.5 FTE

   USFWS –   1 staff, 0.18 FTE

   WDFW –   4 staff, 3.8 FTE (not project leader)

Proposed to add:

   Colville Tribes – 1 person, 0.5 FTE

   Shoshone-Bannock Tribes – 1 person, 0.5 FTE

Funding Breakdown

PSMFC   35.4%
Partner sub-projects   64.6%

Distribution of spending by line item

Line Item	PSMFC	Sub-contracts
Personnel	89.34%	94.36%
Travel	1.20%	1.25%
Prof. meetings & training	0.40%	0.00%
Supplies/equipment	2.77%	1.77%
Rent/Utilities	6.29%	1.67%
Subcontract w/in state		0.94%
Total	100.00%	99.99%

Functions, PSMFC

Distribution of PSMFC effort across basic functions

Work Elements	Function	Percentage
159	Direct data creation	3.4%
160	System development & maintenance	15.8%
160	Direct data content management	23.6%
161	Data dissemination (Internet & direct)	13.8%
189	Coordination	17.5%
119, 185, 132	Administration	25.9%
Total		100.0%

PSMFC = 35% of project budget

Functions, Subprojects

Distribution of Sub-project effort across basic functions

Work Elements	Function	Percentage
159	Direct data acquisition	38.2%
160	System development & maintenance	15.9%
160	Direct data content management	11.1%
161	Data dissemination (Internet & direct)	10.1%
189	Coordination	17.8%
119, 185, 132	Administration	6.8%
Total		99.9%

Sub-projects = 65 % of project budget

Top StreamNet Users

Organization or source	Visits
Internet service provider (comcast, charter, etc.)	12,842
State of Oregon	2,099
US Forest Service	928
National Oceanic and Atmospheric Administration (NOAA)	719
Headquarters USAISC	727
Bonneville Power Administration	648
US DOI Bureau of Land Management	411
US Fish and Wildlife Service IRM/BFO.hq	370
Washington School Information Processing Cooperative	182
Oregon State University	145
USDA Office of Operations	123
Outsource Technologies Inc.	111
Department of Homeland Security	89
Parametrix Inc	89
HDR Inc.	62
State of Idaho	51

StreamNet's Future?

- Adjusting priorities to BPA funded data
  - Obtain and preserve data
  - Steer data to appropriate repositories
  - Data Store archive
  - Work toward standardization
- Coordinated Assessments
  - Support agencies/tribes in posting data
  - Manage regional data standards
  - Assist development of DETs for additional data types
  - Work toward decentralized approach
- Support efficiency gains
- Update existing data types as possible
- Will be restructuring the project

Would Like to See from PERC

- Broad scale input on project priorities
- Input regarding future directions as we restructure
- Ongoing forum to integrate regional scale direction with agency data capabilities
  - BiOp listed various database needs, but no mechanism to integrate regional needs with state/tribal agency mandates and capacities
- StreamNet is a toolkit. Feel free to use us!

Questions?

Unsolicited Feedback

"StreamNet has a great web page and you seem to be providing a crucial service… You have developed some user friendly query tools and a nicely interactive search environment... What you are doing is exactly what the Great Lakes states need."

James Johnson
Manager, Alpena Fishery Research Station
Alpena, MI
July 25, 2012

You can have it:

   Complete

   Fast

   Cheap

Choose two!

Organization

Pacific States Marine Fisheries Commission

Partner sub-projects

    CRITFC – separate contract

    IDFG

    MFWP

    ODFW

    USFWS

    WDFW