INTERAGENCY HYDROLOGY COMMITTEE FOR ALASKA
Spring 2011 DRAFT Meeting Minutes
April 14-15, 2011
ADOT&PF Conference Room 140
3132 Channel Drive, Juneau, Alaska

Minutes by MWK

Attendees:

Trey Simmons	National Park Service
Lee Koss	Bureau of Land Management
Rick McClure	Natural Resources Conservation Service
Steve Frenzel	U.S. Geological Survey
Crane Johnson	U.S. Army Corps of Engineers
Scott Lindsey	National Oceanic and Atmospheric Administration, National Weather Service, Alaska Pacific River Forecast Center
Cindy Gilder	Alaska Department of Environmental Conservation, Division of Water (Water Quality Standards, Assessment, and Restoration)
Charlie Palmer	Alaska Department of Environmental Conservation, Division of Environmental Health (Drinking Water)
Ted Deats	Alaska Department of Natural Resources, Division of Mining, Land, and Water
Terry Schwarz	Alaska Department of Natural Resources, Division of Mining, Land, and Water (Alaska Hydrologic Survey)
Michael Knapp	Alaska Department of Transportation & Public Facilities, Statewide Design and Engineering Services Division (Bridge)
Bob Trousil*	Alaska Department of Transportation & Public Facilities, Southeast Region (Hydraulics)
Jim Sweeney*	Alaska Department of Transportation & Public Facilities, Statewide Design and Engineering Services Division (Research, Development, and Technology Transfer)
Taunnie Boothby**	Alaska Department of Commerce, Community, and Economic Development, Division of Community and Regional Affairs, (Flood Plain Management)

* Partial Attendance
** Attendance by phone

Action Items:

- (Still Pending) John Trawicki of USF&W to seek a formal cost proposal from the Alaska Regional Library and Information Service (ARLIS) for scanning and indexing of IHCA documents.
- IHCA members to read through Crane's metadata repository vision paper and send him feedback via email.
- IHCA members to provide feedback to Lee Koss on his Draft Resolution Proposal on NHD/WBD stewardship. Provide edit/revision suggestions to Lee Koss immediately. He will send out a revised draft that IHCA members should circulate within their respective agencies for consideration.

Legislative Updates:

- State legislation. Ted Deats provided information on one bill and two resolutions. This information is attached to the DNR agency report.
- Federal legislation. No update provided.

Presentations and discussions:

USACE Silver Jackets Program, by Crane Johnson

- See handouts with an overview of this flood-focused program, involving the collaborative efforts of the USACE, FEMA, and other federal, state, and local agencies.
- Of particular interest to the IHCA members may be greater coordination in the recording of high water marks during and after floods.
- Crane will arrange for a presentation on the Silver Jackets Program at the fall 2011 meeting in Anchorage. Clark Hemphill is a Senior Planner at USACE and the point of contact for more information.
- Other disaster planning efforts were mentioned briefly, such as the Water and Wastewater Response Network (WARN).
    - http://www.awwma.org/AKWARN/akwarn.html

ARLIS Archival Services.

- At the Fall 2010 meeting, IHCA decided to investigate the costs of archiving files through the ARLIS system. John Trawicke (F&WS) had offered to do so, but was unavailable to provide a status update.
- Crane Johnson (USACE) offered a potential alternate, using the Department of the Army's "DAPS" system. We will revisit this topic at the Fall 2011 meeting.

ADOT&PF Research, Development, and Technology Transfer, by Jim Sweeney

- IHCA participants with research ideas in the area of hydrology and transportation are encouraged to contact Jim Sweeny (451-5322, jim.sweeney@alaska.gov) or Mike Knapp (465-8893, michael.knapp@alaska.gov). They will provide guidance on how to develop a research need statement. For previously completed research, you may search topics using the following search engines:
    - http://www.dot.state.ak.us/stwddes/research/search_lib.shtml
    - http://goldmine.uaf.edu/uhtbin/cgisirsi.exe/dhBj2aezya/GIIARC/326620034/60/1185/X/BLASTOFF
    - http://ntlsearch.bts.gov/repository/index.do
- For DOT&PF-sponsored training opportunities, see following website:
    - http://dot.alaska.ecatts.com/lmsTrainingCalendar

Metadata Repository Vision, by Crane Johnson.

- See handout with three ideas of varying complexity for sharing metadata and data collection locations between IHCA members. The general consensus is the simpler the better. This tool would be useful and informative for the public too.

- We discussed using web mapping services (like DEC's system) with web links and the Google Earth .kml "snap shot" approach.
- One participant expressed concern for potential inconsistencies between data sources. Another suggested that we update and publish the IHCA email list so that people may contact agency staff for more information.
- We discussed several efforts by others to accomplish similar goals:
    - Department of the Interior Arctic LCC's database, modeled after "CUAHSI".
    - State of Alaska's Statewide Digital Mapping Initiative (SDMI), a cooperative state program implemented by the University of Alaska. (Currently, there is an investigation underway by the SDMI technical team to determine needs across the state. One participant suggested that we table discussion on this topic until the findings from this inquiry are published.)
    - BLM's "Ecoregion Assessments" with its data source compilations.
    - The Alaska Ocean Observation Sysem (AOOS) could serve as a hydrologic clearing house with links.
- ACTION: IHCA members to read through Crane's proposal and send him via email feedback. He will revise the proposal prior to the Fall 2011 meeting.

NHD/WBD Stewardship Needs, by Lee Koss.

- Lee presented IHCA with a Draft Resolution that included a Draft Memorandum of Agreement proposal for consideration and discussion. The agreement would commit funds from the IHCA agencies to pay for NHD/WBD stewardship.
- The need for coordinated stewardship has been discussed at the last several IHCA meetings.
- We discussed how the prioritization of work flow would occur, given the differing priorities between participating agencies. No clear answer. In theory, if protocols and criteria for proposed edits are followed well, there should not be much of a problem. A backlog is anticipated at the start, but not over the long term.
- Several IHCA members noted a need to coordinate with the USDA Forest Service and the challenges associated with QA/QC of data.
- We also briefly discussed concerns about coastal boundary delineations in the NHD. These concerns seem to stem from differing datum references to sea level (MLLW versus MHW). A power point presentation prepared by FEMA is available that details its concerns on this issue.
- ACTION: Over the next month, share the Draft Resolution Proposal within your agency and provide feedback to Lee.

USGS Hydrologic Needs Meeting in April 2011, by Steve Frenzel.

- Attendance at this meeting is by invitation only, but the IHCA Chair has been asked to represent the IHCA membership, generally.
- The meeting will help USGS make internal management decisions on hydrologic data and important science needs in the state, and how best to address those needs.

- We had a general discussion of state perspectives, given the limited state representation at the meeting. Crane will represent these perspectives on behalf of IHCA.

NRCS Snow Survey System Upgrades, by Rick McClure

- The NRCS is switching from "meteorburst" to iridium telemetry systems. Rick provided a Powerpoint presentation on the Snow Survey Program, highlighting the cost-savings and smaller site requirements of the new systems.
- A map illustrating the snow fall across the state, in terms of percent of normal, was provided.

General Discussion Topics:

- We discussed the possibility of IHCA formally stating the benefits drill log documentation and data access. (Relates to the well-driller certification program being considered by Alaska DEC.)
- We need updates on contact information from IHCA participants. Please send this information to Crane Johnson.
- The USGS will be dropping a few gages next year due to budget reductions, including the Wolverine glacier study site.
- The 4th Interagency Conference on Research in Watersheds is scheduled for September 26-30, 2011 at the Westmark Hotel in Fairbanks, Alaska.
    - Organizers have announced a call for abstracts.
    - http://copeh-can.typepad.com/blog/2011/01/interagency-conference-on-research-in-the-watersheds.html
- The NOAA-NWS River Forecast Center has started a Facebook page that would allow information and observations of flood conditions to be posted by community members.

Agency Reports: (See attached)

DNR -DMLW -Water Resources Section.
IHCA Meeting Spring 2011

MATSU GW Studies:

The MATSU groundwater modeling study is progressing as expected. Colin Kikuchi, a dedicated Master's student in Hydrology at the University of Arizona, is working with the USGS on this project. He presented several papers at the AWRA Conference in Chena in this regard. For the coming season, his interim results have indicated a more intensive examination of the aquifers and also a requirement for evaporation rates from local lakes.

He has used new techniques to measure upwelling in streams, and was able to quantify it in specific reaches. He verified the upwelling with chemistry and temperature and was able to show that the confined aquifers were upwelling into the mid section of Meadow Creek and that they dominated flow from that point downstream.

He is working on "model development" so as to provide us with a tool to assist in the management of the local aquifers. He is assisted in this study by similar studies being performed in Europe in similar geomorphological environments where similar management issues have arisen.

Stream Stats.:

This is a USGS-based program funded through DNR and the Coastal Impact Assistance Program (ClAP}. This project is designed to model stream flow at specific points in the drainage in real-time from current and antecedent meteorological conditions. The primary objective of this study is to provide a web-based interactive tool (StreamStats) for determining streamflow statistics at any stream location within the Cook Inlet Basin. StreamStats is a web-based geographic information system (GIS) application for computing streamflow statistics at any stream location. It is a nationally-standardized analytical tool that is being developed by the USGS and is simple to use, requiring only that the user click on a map to identify the stream location of interest. If the location is at or near a streamflow gaging station, the web tool will calculate streamflow statistics based on available records. If the location is ungaged, the web tool will delineate the basin boundary, determine basin characteristics, and calculate all streamflow statistics that can be estimated using regression equations reported by USGS. The user can then download a map of the basin and a streamflow statistics summary that includes confidence intervals and an explanation of the results. Funding for this project has been received and work is on-going. Janet Curran from USGS is heading up the effort which began this winter. $375,000 has been budgeted for the three year project.

During this past quarter, in summary from the USGS report, they gathered geospatial datasets and began a review of their suitability and need for revision. Initial results suggest that the 30 m DEM published for the USGS NAWQA project will be suitable for use. Differences between the Watershed Boundary Dataset (WBD) and gaging station and HUC-8 boundaries prepared by the USGS Alaska Science Center are considerable and a method for merging the datasets will need to be resolved. Regardless of which dataset is adopted as the final watershed boundaries for the project, revisions will be required to make the two sets of boundaries match. For the user interface in the completed product, we selected 1:63,360 topographic maps to serve as the background images.

Pebble:

"Nunamta Aulukestal et al vs. DNR and Pebble Limited Partnership". The hot topic of temporary
water use at the proposed mine site for exploration drilling is under litigation. The trial was held just before Christmas and final written finding of fact and conclusion of law have been submitted to the judge. A decision can come at any time, but is not expected until late spring or early summer. The basic question under litigation is "should the Department of Natural Resources, prior to issuing a Temporary Water Use Authorization or a Miscellaneous Land Use Permit, conduct a public notice" and issue a "Best Interest Finding". There were lots of other issues related to the harm caused, if any, by the taking of water, and the drilling of exploration holes. These issues have been addressed during the trial as they relate to public notice. The current Alaska Statutes and Regulations do not require public notice, or a Best Interest Finding.

Chuitna – No Coalition:

The Chuitna-No Coalition, represented by Trustees for Alaska, had filed a suit with the Superior Court questioning DNR's ability to require additional applications and fees after DNR had already accepted an application for a Reservation of Water. The application was for a stream in the area of the proposed Chuitna Coal project. The stream reach applied for was from the headwaters to the confluence with the Chuitna River. DNR suggested that the Chuitna-No Coalition review the reach requested and based on hydrologic data, segment the long reach into two or three additional reaches. Each reach would require a new application and fee. The priority date of the new applications would be the date the new applications were accepted by DNR. The Chuitna-No Coalition felt that DNR had no authority to request that they segment the Creek into specific hydrologic based segments, file new applications, pay the additional fees, and have a new priority date established. The trail took place in February, and the decision was rendered in April. The judge determined that he had no authority to tell DNR how it accepts applications, because the acceptance or non-acceptance of an application by DNR is not an appealable decision.

Budget:

The legislature is still in working on the Operating Budget and Capital Improvement Budget (CIP), so no details are available. What we can say is that both the House and Senate have approved an increase of $250,000 in general funds to the Water Resources Section to make up for unrealized funds from other sources such as federal, local governments, and fees. The Division of Mining, Land and Water also requested six additional positions (one water position) to work on the backlog applications. The House has approved this increase; the Senate cut the funding in half (no water position). This is now in Free Conference Committee.

CIP funding for the final year of the Mat-Su Groundwater study is also under consideration. Hearing on this project seems to have gone well, but nothing is sure until the final vote is taken. In addition to the final field work, model design and final report, there is also funding for training in the use of the model.

Staffing:

Two recently hired Anchorage-based adjudicators are Raymond Nix and Merry Johnson. Vacant positions now include one adjudicator and two hydrologists.

Interesting Water Rights: Removal of water from Alaska

The Water Resources Section continues to evaluate water right applications by former Director of Water Ric Davidge's Aqueous Northern Holdings for four sites in Southeast Alaska comprising 22 million gallons per day (25,000 acre feet) per each site per year. Aqueous needs to more fully refine their development plans (points of take, access, property rights, fisheries resources, etc) before DNR can continue to process the applications.

The Aleut Corporation's three applications on Adak Island, comprising 500,000 gallons per day (560 acre feet) per each site per year are now in the data collection and adjudication process. Fish data is being collected by the applicant in the lakes (reservoirs) and once we know if there are fish in the lakes (we assume there are) we can start working with ADF&G on the reservation for the lakes and streams downstream of the dams.

Alaska House of Representatives

Rep. Neal Foster, Co-Chair
Alaska State Capitol, Room 434
Juneau, Alaska 99801

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House Special Committee on Energy

Sponsor Statement

HJR 23
Hydroelectric Power; Renewable Energy

House Joint Resolution 23 urges the United States Congress to classify hydroelectric power as a renewable and alternative energy source.

The U.S. has long used targeted tax credit programs to incentivize investment and innovation in the energy sector. This is true for fossil and renewable projects resources alike — and the Investment and Production Tax Credits for renewable energy have been highly successful. According to the National Hydropower Association, tens of thousands of jobs and billions of dollars in private investment across industries — not to mention gigawatts of affordable, reliable, and renewable power — have been driven by smart tax policies.

Hydroelectric has extraordinary potential in Alaska, and the ability to displace diesel generated power with little to no environmental impact. However, hydropower receives only one half the credit available to other renewable energy sources. Equalizing the tax credit for hydropower will help Alaskans in their efforts to displace costly non-renewable generation of power.

HJR 23 sends a strong message urging Congress to develop a working definition of renewable and alternative which includes our hardest working renewable resource, hydropower. Please join me and sending this unified resolution to our elected Representatives in Washington D.C.

Alaska State Legislature

Interim:
50 Front Street, Suite 203
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Session:
State Capitol, Room 114
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Fax: (907) 465-3793

Representative Kyle Johansen
House District 1

HJR 20 – "Urging the President of the United States, the United States Congress, and the Secretary of the United States Department of Agriculture not to implement protection of inventoried roadless areas under the "roadless rule" or otherwise restrict the development of necessary hydroelectric projects in the Tongass National Forest and the Chugach National Forest."

The current version of the Roadless Area Conservation Rule, "Roadless Rule", will have an adverse impact on potential hydro-power and renewable energy projects in Southeast Alaska. Construction of access and maintenance roads or transmission tower placement would become exceedingly difficult with the continuation of this policy.

The Obama administration has set a goal of having 25% of the energy generated in the United States come from renewable, "green", resources by 2025. Alaska, through the Energy Policy passed by the legislature in 2010, has a goal of 50% by 2025. The implementation of the Roadless Rule in the Tongass National Forest will create additional hurdles for the permitting and construction of hydro-power projects and their connectivity to electrified grids through interties and will not help the State or Federal Governments towards their goals.

This resolution will send a message to Washington, stating that Alaska is committed to both responsible conservation of our forests and developing renewable energy projects.

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Governor Sean Parnell
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January 14, 2011

The Honorable Gary Stevens
President of the Senate
Alaska State Legislature
State Capitol, Room 111
Juneau, AK 99801-1182

Dear President Stevens,

Under the authority of Article III, Section 18, of the Alaska Constitution, I am transmitting a bill that would authorize the Alaska Energy Authority (AEA) to move forward on pursuing a large hydroelectric project to supply much needed energy to Interior and Southcentral Alaska. The bill would authorize AEA to acquire, construct, own, and operate new power projects; create a new Alaska Railbelt energy fund as a fund of AEA; repeal the existing Railbelt energy fund (AS 37.05.520) after the balance of the existing fund is appropriated and transferred into the new fund or appropriated and expended for other purposes; address quorum requirements of the AEA board; and allow for the adoption of regulations to govern the procurement of supplies, services, professional services, and construction.

Alaska's State Energy Policy target is to reach 50 percent of its electricity generation through renewable energy by 2025. To achieve this goal, we must move aggressively and invest now to develop capacity for a major hydroelectric project on the Susitna River. This legislation allows AEA to continue with environmental and feasibility studies positioning the State to seek preliminary approval from the Federal Energy Regulatory Commission for a project that will provide half of Southcentral's electricity demand.

Alaska must invest now to create new opportunities for economic development and jobs for Alaskans. A Susitna Dam hydroelectric project will provide an important and much needed supply of renewable energy for Alaskan homes and businesses while creating jobs for Alaskans. A sectional analysis is provided with this packet.

I urge your prompt and favorable action on this important measure.

Sincerely,

Sean Parnell
Governor

Enclosure

SB 42

Alaska Department of Natural Resources **14 April 2011**
27th Legislature(2011-2011)

Bill History/Action for 27th Legislature

Bills Related to Hydroelectric Power

BILL: HJR 23
BILL VERSION: HJR 23 AM
CURRENT STATUS: (S) RES
SPONSOR(s): ENERGY

SHORT TITLE: HYDROELECTRIC POWER; RENEWABLE ENERGY
STATUS DATE: 04/07/11

TITLE: Urging the United States Congress to classify hydroelectric power as a renewable and alternative energy source.

BILL: HJR 20
BILL VERSION:
CURRENT STATUS: (H) RES

SHORT TITLE: ROADLESS RULE & CHUGACH AND TONGASS HYDRO
STATUS DATE: 03/23/11

SPONSOR(s): REPRESENTATIVE(s) JOHANSEN, Thomas, Stoltze, P.Wilson, Munoz

TITLE: Urging the President of the United States, the United States Congress, and the Secretary of the United States Department of Agriculture not to implement protection of inventoried roadless areas under the "roadless rule" or otherwise restrict the development of necessary hydroelectric projects in the Tongass National Forest and the Chugach National Forest.

BILL: SB 42
BILL VERSION:
CURRENT STATUS: (S) FIN

SHORT TITLE: POWER PROJECT; ALASKA ENERGY AUTHORITY
STATUS DATE: 03/22/11

SPONSOR(s): RULES BY REQUEST OF THE GOVERNOR

TITLE: "An Act relating to the procurement of supplies, services, professional services, and construction for the Alaska Energy Authority; establishing the Alaska Railbelt energy fund and relating to the fund; relating to and repealing the Railbelt energy fund; relating to the quorum of the board of the Alaska Energy Authority; relating to the powers of the Alaska Energy Authority regarding employees and

the transfer of certain employees of the Alaska Industrial Development Export Authority to the Alaska Energy Authority; relating to acquiring or constructing certain projects by the Alaska Energy Authority; relating to the definition of 'feasibility study' in the Alaska Energy Authority Act; and providing for an effective date."

BILL: HB 123

SHORT TITLE: CLEAN WATER FUND: LINKED DEPOSITS

BILL VERSION:

CURRENT STATUS: (H) RES THEN FIN

STATUS DATE: 01/26/11

SPONSOR(s): REPRESENTATIVE(s) SEATON

Other Water Related Legislation

TITLE: "An Act relating to the Alaska clean water fund."

BILL: HJR 17

SHORT TITLE: WATER & WASTE WATER REGULATION

BILL VERSION:

CURRENT STATUS: (H) RLS

STATUS DATE: 03/25/11

SPONSOR(s): COMMUNITY & REGIONAL AFFAIRS

TITLE: Urging the United States Congress to pass legislation concerning regulation of drinking water and wastewater treatment by the United States Environmental Protection Agency.

BILL: SB 96

SHORT TITLE: APPLICATION OF VILLAGE SAFE WATER ACT

BILL VERSION:

CURRENT STATUS: (S) FIN

STATUS DATE: 03/23/11

SPONSOR(s): SENATOR(S) KOOKESH

TITLE: "An Act relating to the Village Safe Water Act."

BILL: HB 183

SHORT TITLE: APPLICATION OF VILLAGE SAFE WATER ACT

BILL VERSION:

CURRENT STATUS: (H) CRA THEN FIN

STATUS DATE: 03/09/11

SPONSOR(s): REPRESENTATIVE(s) DICK

TITLE: "An Act relating to the Village Safe Water Act."

BILL: HB 85

SHORT TITLE: MIXING ZONES/SEWAGE SYSTEMS

BILL VERSION:

CURRENT STATUS: (H) FSH THEN RES

STATUS DATE: 01/18/11

SPONSOR(s): REPRESENTATIVE(s) SEATON, Gara, Gardner

HEARING: (H) FSH Mar 29 5:00 PM CAPITOL 120 TELECONFERENCE

TITLE: "An Act requiring the Department of Environmental Conservation to collect and make available to the public certain information relating to water pollution; prohibiting certain mixing zones in freshwater spawning waters; and requiring a public comment period for certain sewage system or treatment works modifications."

BILL: HB 86

SHORT TITLE: BAN MIXING ZONES IN SPAWNING AREAS

BILL VERSION:

CURRENT STATUS: (H) FSH THEN RES

STATUS DATE: 01/18/11

SPONSOR(s): REPRESENTATIVE(s) GARA

TITLE: "An Act prohibiting mixing zones in freshwater spawning waters."

Alaska Department of Environmental Conservation

Agency Briefing

DEC REPRESENTATIVE(S) CONTACT INFO:

Charley Palmer, *Hydrologist II* Alaska DEC/Division of Environmental Health Drinking Water Program Public Drinking Water Protection 555 Cordova St. Anchorage, AK 99501 p: 907-269-0292 e: charley.palmer@alaska.gov w:http://www.dec.state.ak.us/eh/dw/DWP/source_water.html	Cindy Gilder, *Environmental Program Manager I* Alaska DEC/Division of Water Water Quality Standards, Assessment & Restoration Nonpoint Source Water Pollution Control 555 Cordova St. Anchorage, AK 99501 p: 907-269-3066 e: cindy.gilder@alaska.gov w:http://dec.alaska.gov/water/wnpspc/index.htm

Division of Environmental Health

Drinking Water Program – Drinking Water Protection Management & Staff:

- Kathy Kastens, Section Manager
- Chris Miller, Lead Environmental Program Specialist
- Anne Gleason, Environmental Program Specialist
- Charley Palmer, Hydrologist

ACWA-Public Drinking Water Protection grant summary

- Purpose: To fund community water systems, or projects supporting community water systems, to implement protection strategies identified in an endorsed drinking water protection plan, or to develop local regulations that explicitly protect community water systems. This funding is available statewide.
- **SFY11**: $17,000 approved.

- Sand Point watershed information display kiosk.
    - Grant cancelled by applicant.
- Matanuska-Susitna valley, Cottonwood Creek.
    - To educate the community on ways to conserve water and minimize polluted run-off.
        - Door-to-door outreach campaign of recommended best management practices for septic systems.
        - To develop an informational web site.
    - Status to be determined by upcoming quarterly report.
- Gulkana Village.
    - To properly decommissioning, as funding allows, seventeen (17) abandoned wells and test holes.
    - The full funding amount will be used, with the possibility of unfunded work remaining at the close of the grant.

- **SFY12**: No funding determinations made yet; no direct applicants, but applications for the ACWA grant are under review to see if slight modifications could qualify them for additional DW Protection funding.

Alaska Well Driller Certification status

There is a growing need in Alaska for well drillers to be held accountable for their work. Compliance with existing regulations, such as with well log submittals and well construction standards, is inconsistent. Currently, Alaska is the only state that does not have a well driller certification or licensing program.

- DEC met with DNR to discuss interagency collaboration related to drinking water wells throughout the state. A product of this meeting has been the development of a draft MOU. The MOU will establish a working relationship that will help each agency enforce existing regulations and provide the framework by which each can work together in filling gaps in current regulations. A well driller certification program was discussed as a means to ensure better compliance.

- DEC (and DNR) staff attended the Alaska Water Well Association (Well driller's group) annual meeting in Anchorage. It was clear at the meeting that most attending well

drillers were opposed to a certification program. However, recent strict enforcement of Dept. of Labor regulations intended for certified electricians and plumbers has generated a concern by well drillers that they may no longer be able to continue to do this type of work without changes to the regulations or the development of a certificate of fitness for well drillers. One potential option would be a well driller certification program.

- DEC and DNR met with the Dept. of Labor to explore the possibility of implementing a well driller certification program. The discussion centered on the question of who has the statutory authority to house regulations requiring well driller certification. The outcome of this meeting has been continued research on legal authority, and the beginning steps of an interdepartmental white paper describing how a well driller certification program may help satisfy each department's needs.

- Future steps:
    - A stakeholders group may be assembled. Would IHCA, or any of its members, want to be involved?
    - We may be seeking agency support; would IHCA, or any of its members, be interested in providing written support?

Division of Water

Management & Staff: Cindy Gilder, Laura Eldred, Drew Grant, Kevin Hanley, Chandra McGee, Shane Serrano, Tim Stevens, and Brock Tabor

<u>Alaska Clean Water Actions (ACWA) grant summary</u>

- **SFY11**
    - Grants provided for the following projects:
        - Granite Creek Recovery and TMDL Implementation (City & Borough of Sitka)

- Onemile (Holgate) Creek Watershed Protection and Education Project (Takshanuk Watershed Council)
- Sawmill Creek Watershed Protection and Education (Takshanuk Watershed Council)
- Kenai River Water Quality Monitoring (Kenai Watershed Forum)
- Little Susitna River Hydrocarbon Evaluation (ARRI)
- Mat-Su Stormwater Assessment (ARRI) – 2 year project
- Stream Temperature Monitoring Network – Cook Inlet Keeper
- Turbidity Monitoring on the lower Kenai River (Kenai Watershed Forum)
- Goldstream Creek and Crooked Creek Turbidity (UAF)
- Stormwater Collection-Sediment Separator

Full project descriptions are found at:
http://dec.alaska.gov/water/acwa/pdfs/FY11GrantProjects.pdf

- **SFY12**
  - Anticipate grant award announcements early April. We received $601K in grant requests for an estimated $310K in funding. Funding for the Mat-Su Stormwater Assessment Project was secured through AK SSF.

Integrated Report

- DEC expects to issue the solicitation for additional water quality information to be included in the 2012 Integrated Report during the summer of 2011. This biennial report on the health of Alaska's waters is due to EPA on April 1, 2012. Current waters which are "impaired" without a TMDL or other plan include: Skagway Harbor, Katlian River, Salt Chuck Bay, Coffman Cove Creeks, Big Lake, Egegik River, Ship Creek, Matanuska River, Popof Strait, Red Lake/Anton Pond, Hood/Spenard Lake, Cold Bay, Cottonwood Creek, Chena River, Chena Slough, Noyes Slough, Slate Creek, Eyak Lake, Goldstream Creek, Crooked Creek Watershed, Kuskokwim River, & Red Devil Creek. The report also sets for the expected schedule for addressing the impaired waters (completed the Total Maximum Daily Load (water quality planning documents). DEC is actively working on completing the TMDL's for Noyes Slough and Big Lake for FY12.

AKMAP

- AKMAP will be surveying about 40-50 wetland sites (water, soil, vegetation) on the Arctic Coastal Plain region (mid-July to mid-August). They will also be completing the second year of the Chukchi Survey. For additional information, contact Doug Dasher.

Interagency Hydrology Committee for Alaska
Fall 2010 National Park Service update

The Alaska Regional Office will be working with the parks and networks to develop priorities for potential expansion of stream gauging in the region. There are possibilities of cooperating with other agencies and groups to continue gauging on waterways with existing long-term records, taking over monitoring from USFWS, and placing new gauges. The regional office will also begin efforts to evaluate park needs for establishing water reserves with the state to support ecosystem health and to protect waterways from future development.

Klondike Gold Rush NHP – still operating Taiya River gage. Comparison of 2004-present data with data from 1970-1977 suggests that peak discharge is occurring earlier in the year and at lower volume. Spring snowmelt onset is also occurring earlier in the year.

Kenai Fjords NP is still having a recurring issue with flooding on Exit Creek and the Resurrection River. SWAN I&M Network monitoring stage height on Exit Creek, APRFC monitoring Resurrection River. Park, network, and regional staff will be working to develop a method of flow monitoring that will be less susceptible to stream migration and damage from high flows.

Other lingering issues include FERC monitoring of the Bradley Lake diversion and an aggrading creek in Aialik Bay that looks like it may migrate to the point where it will wash the ranger station out to sea. They would like to know more about state monitoring of escapement in McCarty Fjord.

The park is conducting glacial lake outburst flood monitoring on Bear Glacier under the guidance of Dr. Andrew Wilcox from the University of Montana.

Denali NP is continuing restoration efforts in the Kantishna area. The park is also working on design review and environmental evaluation work on the upcoming Doyon micro-hydro project on Eureka Creek near Kantishna.

At the recent AWRA meeting at Chena Hot Springs, Chuck Podolak (USGS) presented some of the results of his work on the streambed dynamics of the Toklat river. There are ongoing issues with streambank erosion affecting park infrastructure.

Wrangell St. Elias –
WRST is pursuing water rights/reserves for our operations at Kennecott and will be working with the state to evaluate data needs and the timing of reviews.

The park is working with EPA on Cabin Creek, a 303d listed stream near Nabesna to develop some solutions to stabilize the mine tailings that are creating the problem.

The Southeast Alaska I&M Network has installed continuously recording sondes at Glacier Bay NP and Sitka NHP – Klondike Gold Rush will get one this spring.

The Southwest Alaska I&M Network continues gaging at outlets of Lake Clark, Naknek Lake and Brooks Lake. Rating curve development for tributaries to Lake Clark is ongoing. They have tested a

RiverSurveyor M9 acoustic Doppler current profiler this summer and will be incorporating its use into the monitoring program including the development of SOPs.

Central Alaska Network stream monitoring program
For the 2011 field season, the stream monitoring program is planning to expand operations to include the first sampling in Yukon-Charley Rivers National Preserve. All sampling locations in Yukon-Charley have been selected using the probabilistic GRTS algorithm, which generates a spatially-balanced sample, whereas sampling locations in Denali and Wrangell-St. Elias are a mix of judgment and GRTS sites. We anticipate sampling approximately 40-45 streams in 2011, split among the 3 park units. We will be reinstalling pressure transducers at several sites, including Jack Creek in Wrangell-St. Elias, where equipment was lost last year in floods, to collect stage data.

Using invertebrate and environmental data collected at 65 sites between 2006-2009, we recently developed a RIVPACS bioassessment model for the Central Alaska Network. Results from this preliminary model are promising, and we plan to expand the model using data from another ~65 sites that were collected by the NPS, EPA and USGS. We will also be using data from historically mined streams in Denali (some of which are in the process of being restored) to test the sensitivity of the model to impairment.

ALASKA DEPARTMENT OF FISH & GAME
IHCA AGENCY REPORT
April 14-15, 2011

- Staffing update: New Commissioner Cora Campbell; new Commercial Fisheries Director Jeff Regnart. Christopher Estes retired last fall.

- Stream gaging: ADF&G is a cooperator with USGS to operate Montana Creek and Wasilla Creek stream gages. ADF&G is operating gages on Fish and Meadow Creeks in MatSu, Stariski Creek with Cook Inlet Keepers, and Sitkoh, Chilkoot, Cowee, and the Lost River in Southeast. ADF&G also received funding from the Western Native Trout Initiative to monitor 3 lakes in SE to protect cutthroat trout habitat and file reservations.

- Monte Miller was recently hired as ADF&G's Hydropower Coordinator. Hydropower interest remains strong statewide. Potential projects include Su Hydro, Cascade Creek near Petersburg, Allison Creek near Valdez, Takatz Lake near Sitka, and Grant Lake on the Kenai Peninsula. Hydrokinetic projects (tidal and river) are pursuing feasibility studies to evaluate device capabilities, project costs, and environmental issues. These have shown a decline but some projects remain active including Cook Inlet, Nenana, and Eagle (Yukon).

- ADF&G and DNR continue to cooperate on instream flow and water resource related actions per a 2002 MOU. Recent activities include issuance of Certificates for the Sagavanirktok River and Nenana River. ADF&G mostly recently filed reservations on Sheep Creek, Skagway River, Sitkoh Creek, West Creek, Ophir Creek, Taiya River, and Old Situk River.

- A special report summarizing the last 10 years of instream flow protection in Alaska was recently published by ADF&G. A copy of the report can obtained from ADF&G's website (see http://www.adfg.alaska.gov/sf/publications/).

- In mid-April the National Fish Habitat Board will release *Through a Fish's Eye: The Status of Fish Habitats in the United States 2010.* This first of its kind report summarizes the results of a detailed national assessment of fish habitat across the entire United States. The report focuses on the freshwater and estuarine fish habitats of the 50 states. (see http://www.fishhabitat.org/).

- ADF&G continues to participate with the Alaska Clean Water Actions (ACWA) program with DEC and DNR. Activities include nomination of new water bodies, grant reviews, and participation in database development. Tom Cappiello is the department lead (267-2395).

USGS Alaska Science Center
Water Resources Office
2011 Spring Report

On-going or completed projects

Monitoring streambed scour at Alaska bridges: In cooperation with the Alaska Department of Transportation and Public Facilities (ADOT&PF), the USGS monitors streambed scour in real time at 19 bridges in Alaska. At the request of ADOT&PF, we surveyed ice thickness at the Gakona River in March 2011 where locals are concerned about river ice and aufeis at the bridge. A manuscript on scour at bridge 339 (Copper River) is in review and should be available this summer.

Understanding bank erosion on the Matanuska River: In cooperation with the Matanuska-Susitna Borough, the USGS has developed maps of the extent of the river's braid plain, the distribution of terraces, tributary fans, and other erodible features, and the location of erosion-resistant bedrock banks. These features are in a GIS that will be available through the Borough. The final report has just been sent to peer review and should be available this fall.

Describing water-quality conditions in National Parks: Water-quality data were collected from sites in Denali, Wrangell-St. Elias, Glacier Bay, and Lake Clark National Parks. In Denali National Park, sampling was focused on streams in historically mined drainages in the Kantishna Hills area of the Park. The report for this project will be completed next year. New work on the Toklat River in Denali National Park will be examine the geomorphic aspects of the river in a reach where park infrastructure is threatened by erosion. In Wrangell-St. Elias National Park, streams along the McCarthy Road were examined for their physical, chemical, and biological characteristics that define baseline water-quality conditions. The final report for this study has been through peer review and is near completion. A study of mercury concentrations in water, sediment, and biological tissues from streams in Glacier Bay National Park was begun in 2010. Field work will continue this year.

Understanding groundwater availability and movement in the Matanuska-Susitna Valley: Groundwater interaction with surface water was investigated in detail during 2010. Seepage meters were installed in the streambed of Lucile Creek and synoptic measures of streamflow were made in Lucile Creek and the Little Susitna River to gain understanding on areas of exchange between surface and groundwater as well as to document rates of exchange. A journal article on the work at Lucile Creek is in review. Field work will continue in 2011 with additional work on water budgets including gaining a better understanding of evaporation from free water surfaces. Water quality sampling also will be done this year to help gain an understanding of water sources.

Investigating affects of climate change on productivity in the Gulf of Alaska: As part of a multi-center, inter-disciplinary study, changes in the glaciated Copper River basin are being examined to determine the potential effects on productivity. The USGS watershed model, PRMS (Precipitation and Runoff Modeling System), is being modified to account for changing glacier mass as part of this project. This is a key feature that will make the model more applicable to Alaska, and specifically the Copper River basin. The report dealing with the runoff, including glacier runoff, for the basin will be submitted for review this fall.

Glaciers and climate in Alaska: The USGS Benchmark Glacier Monitoring Program continued collection of mass balance data at Gulkana and Wolverine Glaciers in 2010. However, budget cuts may likely result in the suspension of work at one glacier in 2011. Additional work begun at Columbia Glacier in 2010 will be wrapped up in 2011 as funding for this work also was eliminated.

New projects

StreamStats: StreamStats (http://water.usgs.gov/osw/streamstats/) is a web-based application that provides users with streamflow statistics and basin characteristics through a GIS. The application uses existing regression equations for determining streamflow statistics at ungaged sites. Our project, in conjunction with the Alaska Department of Natural Resources, will be a pilot effort on the Cook Inlet Basin, rather than a statewide effort. As part of this 3-year project, new regression equations will be developed for this region.

Synthesizing hydrographs and streamflow statistics for the Susitna River: The Alaska Energy Authority is pursuing a hydroelectric project on the Susitna River and has expressed the need to understand historical flow conditions in the vicinity of the proposed project. To address this concern the USGS will estimate missing daily values and long-term summary streamflow statistics for streamgages in the Susitna River Basin with incomplete record over the period 1949 to 2010. Regression equations derived from overlapping streamflow records with index streamgages will be used to estimate daily hydrographs for continuous-record streamgages in the Susitna River Basin over this period, and summary statistics will be provided as for USGS Annual Water Data Reports. This project will be completed early in 2012.

Threatened or discontinued streamgages

Meade River at Atkasuk	Discontinued 1/2010
Ikpikpuk River below Fry Creek near Alaktak	Discontinued 1/2010
Fish Creek near Niuqsut	Discontinued 1/2010
Judy Creek near Nuiqsut	Discontinued 1/2010
Ubultuoch River 13.7 mile above mouth near Nuiqsut	Discontinued 1/2010
Cooper River at Million Dollar Bridge near Cordova	Threatened 10/2010
Porcupine River 9.5 mi above mouth near Fort Yukon, AK	Discontinued 10/2010
Beaver Creek above Victoria Creek near Beaver, AK	Discontinued 10/2010
Beaver Creek near Michel Lake near Beaver, AK	Discontinued 10/2010
Hess Creek near Livengood, AK	Discontinued 10/2010
Canning River above Staines River near Deadhorse, AK	Threatened 10/2011
Tamayariak River near Kaktovik, AK	Threatened 10/2011

CHENA RIVER LAKES FLOOD CONTROL PROJECT

- Lidar Mapping for FNSB Complete
  - Data delivered to USGS 'CLICK' and FNSB. We are working to get the data into the NED.
- Major dam modification study began in the Fall 2010 (2-3 year study).
  - Probable Maximum Precipitation Re-Analysis
    - Storms selected and data gathered
    - Estimated completion Sept. 2011
  - Floodway 2-D AdH Hydraulic Model
    - Baseline Modeling completed
    - Dam modification alternatives will be modeled in FY2011
  - 1-D and 2-D dam break modeling
    - Modeling complete.
    - Inundation mapping in progress estimated completion of June 2011
  - HEC-HMS Watershed Model Upgrade and PMF Re-analysis
    - Watershed model developed
    - Currently calibrating/validating
    - Estimated completion July 2011

- Continue to upgrade remote data collection platforms with NRCS, scheduled to be complete in FY11.
  - Two remote sites were converted to the GOES telemetry system
  - USACE will transition off the Meteorburst system completely in August 2011

STUDIES & PROJECTS

- **Whittier Hydropower:**
  Develop interim feasibility investigation for potential hydropower project for the City of Whittier. Interim report complete July 2011.

- **Cook Inlet:**
  Additional hydrodynamic modeling using recent bathymetric survey data for KABATA and USACE.
  - Bi weekly suspended data collection ongoing since Fall of 2006 at the Port of Anchorage

- **New Section 14 Studies**
  Currently working on three Section 14 studies located at: St. Michael, Napakiak, and Emmonak. The Emmonak and Napakiak studies are examining stream bank erosion and the St. Michael study is examining shoreline erosion. Site visits are scheduled for this summer.

- **Lowell Creek Tunnel (Seward)**
  USACE currently has maintenance responsibility of the Lowell Creek Tunnel. The Alaska District is currently reviewing the safety of the Lowell Creek Tunnel project. This will include a risk assessment of the project and 2D hydraulic modeling of areas downstream from Lowell Creek.

- **Unalakleet:**
  Rock revetment continuation funded to protect the spit at the river mouth. Construction expected in 2012.

- **Seward Area Study**
  The purpose of the Seward Planning Assistance to States report is to provide a holistic analysis of flooding issues in the Seward area. It will identify structural and nonstructural measures, as well as management, maintenance and emergency activities that warrant implementation and/or further study. The goal of the report is to assist the Seward Bear Creek Flood Service Area, City of Seward, Kenai Peninsula Borough, and other stakeholders with long-term planning efforts to reduce damages from future flood events. Completion of this planning report is anticipated this summer..

- **Black Lake Ecosystem Restoration**
  - 2011 work will include:
    - Sediment coring of Black Lake with Northern Arizona University and USGS/AVO
    - 2-d Lake thermal modeling in 2011 (ADH)
    - Cross section and bathymetric surveying
    - USGS lake water surface elevation monitoring

- **Denali Commission Mooring Points –** Planning and Design for Kuskokwim mooring points. Site visits for another 14 villages throughout Alaska. Work for Denali Commission also includes:

- **General Hydropower Investigation:** The Alaska Energy Agency (AEA) has entered into a multi-year Planning Assistance to States (PAS) agreement to investigate potential hydropower projects. The initial task will be to create a GIS database. This GIS product will allow users to access digitized reports that are currently available only in hard copy. A draft list of all hydropower reports is available now. Report scanning complete. *The GIS product will be available to public this fall.*

- **Matanuska Watershed Study:** Watershed study initiated with several ongoing initiatives.
  - Wide area Lidar coverage is in progress. Acquisition planned for summer 2011 (USGS - Lead, MatSu Borough, COE and others)

  - A wetlands map has been created for the Mat-Su Watershed. http://CookInletWetlands.info/default.html

- A functional assessment is being conducted for the mapped area. This assessment will be at the watershed level tied to GIS variables and not a data sheet for on-site assessments. The first draft should be complete by the end of FY2011.

- **Shaktoolik**: Coastal flood hazard determination, work based on the previous storm surge and wave hindcasts for western Alaska. The preliminary storm surge modeling has been verified with resident accounts. Next step is to map boundaries of coastal hazards for the community for various return intervals.

FY11 FUNDED STREAM GAGES (15 Total)

Chena River Lakes Project (Moose Creek Dam):

- Chena River MP40
- Chena River near Hunts Creek
- Chena River Below Moose Creek Dam
- Chena River Downtown Fairbanks
- Little Chena River
- Tanana River at Fairbanks
- Tanana River at the Floodway Control Sill (stage only)
- Tanana River at Big Delta (w/NWS)

USACE Cooperative Stream Gaging Program (Sites cost shared with USGS):

- Kenai River, near Soldotna
- Kuskokwim River, near Crooked Creek
- Yukon River, near Stevens Village
- Tanana River, near Nenana
- Kuskokwim River at Liskeys Crossing

Project Funded Gages:

- Whittier Creek (Start up October of 2009) – Funded for two years

Gages Dropped for 2011: Buskin River

2011 Alaska District Construction Projects: Port of Anchorage, Unalaska Harbor, Douglas Harbor and Akutan Harbor. Construction of Barge Moorings for Denali Commision in the Lower Yukon region (7 villages).

An idea for:

Alaska Surface Water Data Inventory Project

Prepared by: Crane Johnson April 12th 2011

Despite Alaska's abundant water resources, there are no streamflow data for over 99 percent of the rivers and streams in the state. The U.S. Geological Survey, the largest collector of streamflow information in Alaska, operated 120 real time surface water stations in 2011 and has collected data at more than 500 sites in Alaska since 1908. There is an average of about one USGS stream gage per 5,500 square miles in Alaska as compared to the "Lower 48" average of about one gage site per 340 square miles. The USFWS is the second largest collector of discharge data in Alaska. Data are available from the USFWS for 76 gaging stations in seven Alaska refuges since 1987. A partial list of agencies that collect surface water data within Alaska include:

- Alaska Boreal Forest Council
- Bureau of Land Management
- Cook Inletkeeper
- National Park Service
- National Weather Service
- State of Alaska Department of Fish and Game
- State of Alaska Department of Natural Resources
- State of Alaska Department of Environmental Conservation
- United State Geological Service
- United States Fish and Wildlife Service
- United States Forest Service
- University of Alaska Fairbanks
    - WERC
    - LTER
- Private companies

Need:

Currently various Federal, State and local agencies collect or have historically collected surface water data within Alaska. There exists a need to provide future users a comprehensive inventory of surface water data collected in Alaska. The underlying principle is that improved access to a statewide surface water data would be beneficial to the hydrologic community for both research and project development. Making the maximum use of existing hydrologic observations requires more effort to share hydrologic data and information on all levels.

Purpose:

The purpose of this project would be to provide an inventory of surface water data collected within the State of Alaska. A database would be populated that contains a consistent set of metadata for each data set collected. This information would be made available online through a searchable map based format. Basic metadata would be presented online with agency contact information or a link to the agency data website.

Primary users would be agencies, local governments, consulting engineering firms, and members of the public needing stream flow information for research, planning and management decisions.

Key Points:

- Don't duplicate efforts (USGS-NWIS)
- Start simple
- Balance effort involved vs. benefits realized by users

Current Sites that Supply Alaska Surface Hydrologic Data:

1. Alaska Hydrologic Survey – Streams Database
   http://dnr.alaska.gov/mlw/water/hydro/streams.cfm
2. United States Geologic Survey
   http://waterdata.usgs.gov/ak/nwis/sw
3. University of Alaska Fairbank
   http://ine.uaf.edu/werc/projects/NorthSlope/currentconditions.html
   and various other sites
4. Fish and Wildlife Service
   http://alaska.fws.gov/water/datamap.htm
5. Bureau of Land Management
   http://www.blm.gov/ak/st/en/prog/swa/pubs.html
6. National Weather Service
   http://aprfc.arh.noaa.gov/

The Yugo Version:

A simple yet effective way to increase awareness for hydrologic data collected within the State of Alaska would be to establish a web page dedicated to providing links and basic metadata for the various Local, State, Federal and non- governmental agencies that collected surface hydrologic data within the state of Alaska. The advantages to this system would be that it is simple, effective and easy to establish. Updates could be coordinated every year with the fall IHCA meetings.

The Ford Version:

A slightly more advanced method to help increase usability for hydrologic data would be to establish a statewide online database for hydrologic data collected within the state. This system would include basic site information and metadata for each data set that is searchable geographically via a map interface. A good example of this would be the State of Illinois which maintains a database that catalogues data that has been collected and provides contact information for these datasets. This version would require more effort initially to set up, but could be easier to maintain.

Agency
Website
Agency Contact Name
Agency Contact Number

Agency
Agency Site ID
Site Name
Type
Latitude
Longitude
Altitude
Date Start
Date Stop
Drainage Area

Cadillac Version:

This version of statewide sharing of hydrologic data would include agencies establishing and maintaining a water data services server that serves up data in WaterML format. All of these data would then be available and searchable. One example of this type of network has been developed by The U.S. National Science Foundation and a Consortium of Universities for the Advancement of Hydrologic Sciences (CUAHSI -http://www.cuahsi.org). This Hydrologic Information System (HIS) is comprised of databases and servers, connected through web services, to client applications, allowing for the publication, discovery and access of data.

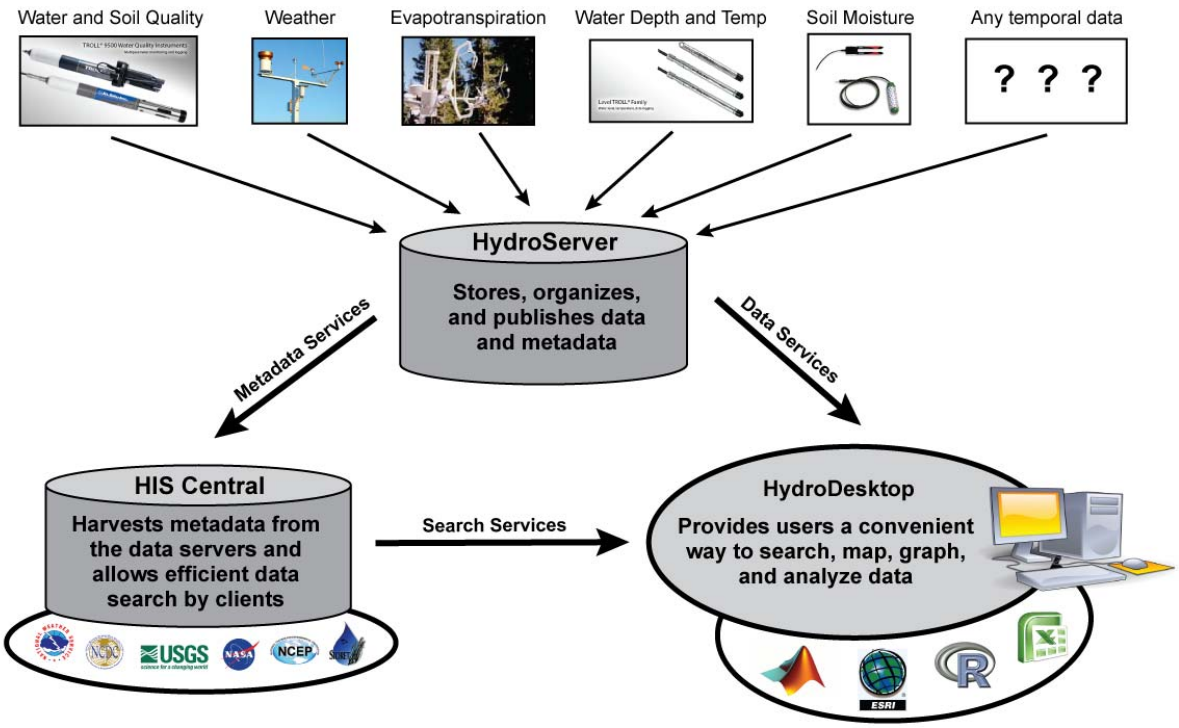

Figure 1: Overview of CUAHSI Architecture (Figure courtesy of http://www.cuahsi.org/)

Statewide Examples:

- Integrated Water Resources Information System (IWRIS) – California
    - IWRIS is a data management tool for water resources data. It is a web based GIS application that allows you to access, integrate, query, and visualize multiple sets of data. Some of the databases include DWR Water Data Library, California Data Exchange Center (CDEC), USGS streamflow, Local Groundwater Assistance Grants (AB303), and data from local agencies.
        - http://www.water.ca.gov/iwris/
- Surface Water Integrated Monitoring System (SWIMS) - Wisconsin
    - SWIMS is the state´s repository for water and sediment monitoring data collected for Clean Water Act work and is the source of data sharing through the federal Water Quality Exchange Network. DNR Fisheries and Water Quality Biologists use the system to locate monitoring stations, providing a gateway to final, reviewed fisheries management datasets housed at the U.S. Geological Survey. SWIMS is also the data system that citizen volunteers use to document water monitoring results for our state´s lakes, streams and wetlands.
        - http://dnr.wi.gov/org/water/swims/
- Water and Atmospheric Resources Monitoring Program (WARM) - Illinois
    - The database identifies each program by name and resource type, and provides various metadata attributes of each project, including descriptions of the variables measured, data collection locations, and the longevity of data monitoring. Each listing concludes with information on the availability and accessibility of archived data, its format, and current contact information at the ISWS. The listing includes similar information on programs conducted by other agencies, observing data in Illinois, but not necessarily with direct collaboration of ISWS staff. This listing is not a data archive, but rather a conduit to a multitude of available data concerning water and atmospheric data resources in Illinois.
        - http://www.isws.illinois.edu/warm/warmdb/WarmList.asp

Many Agencies …

One Solution …

Reducing Risk

The Silver Jackets Program

"*Silver Jackets allows the* ***State and Federal partners to work seamlessly...and anticipate needs during disaster events****. The Silver Jackets program* ***maximizes the funding*** *available… and allows the team members to work together in a synergistic manner, tapping into one another's needs and capabilities, thus* ***creating… services that otherwise would not be available****. The program allows the partner agencies to look ahead and identify potential challenges and identify* ***solutions to address those challenges before they happen****."*

Manuela Johnson, Indiana Dept of Homeland Security

Silver Jackets teams are continuously operating, state-led, interagency collaboratives working together to reduce flood risk at the state level. The U.S. Army Corps of Engineers is teaming with states, the Federal Emergency Management Agency, and other federal, state and local agencies to provide a unified approach to addressing a state's priorities. No single agency has the 100 percent solution -- each has one or more pieces, similar to squares in a patchwork quilt. The Silver Jackets program can be viewed as the quilting bee, the forum where all agencies come together with the state to put their squares together and implement a solution.

The primary goals of the Silver Jackets program are to:

- Facilitate strategic **life-cycle** flood risk reduction,
- Create or supplement a **continuous** mechanism to **collaboratively** solve state-prioritized issues and implement or recommend those solutions,
- Improve processes, identifying gaps and counteractive programs,
- Leverage resources and information, learn about programs and how to combine,
- Improve and increase **flood risk communication** and present a unified interagency message, and
- Establish close relationships to facilitate **integrated post-disaster recovery** solutions.

Pilot teams initiated in Ohio in 2005 and Indiana in 2006 have been very successful. Coordination through the Ohio team enabled a community to acquire detailed mapping of its community by tapping into an ongoing regional watershed study. By integrating the USACE Planning Assistance to States program and FEMA's Flood Mitigation Assistance program, the town gained eligibility for FEMA flood mitigation funds. By bringing together multiple agencies, the Indiana team was able to pair technologies not often used together to identify when specific flood areas will be impacted. Through the use of real time river gage data, the city now knows when to take protective actions and can identify where those actions will be needed. Citizens can monitor flood progression and be more responsible for their own safety.

Efforts are underway to establish a Silver Jackets team in at least one state in every Corps division across the United States this year, with the ultimate goal of offering an interagency team to every state. To date, team development is underway in 20 states. The intent is not to duplicate existing teams, but to supplement and strengthen current efforts, and establish relationships where they do not yet exist.

For further information, please contact Jennifer Dunn, the Program Manager at Jennifer.K.Dunn@usace.army.mil. A Silver Jackets website will soon be available at www.iwr.usace.army.mil/nfrmp/state.

NATURAL RESOURCES CONSERVATION SERVICE AGENCY UPDATE
IHCA –April ?-?,2011 Anchorage, Alaska

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Emergency Watershed Protection

- City of McGrath – This is a levee repair and riprap armoring project. Phase 2 is another 1900 feet of levee repair and riprap bank armor similar to what was done in Phase 1 last year. This design is in process but not in a rush mode as given the state of the federal budget it is unlikely we will see funding come through for this project within the next 6 months or so.

- Gwichyaa Zhee Gwich'in Tribal Government and Crowley are sponsoring an EWP project in Fort Yukon. Funding has been procured for this project. Design is complete and project out for bid. Anticipate contract award approximately mid-April. The project is to relocate the 650,000 gallon fuel tank farm away from the eroding bank of the Yukon River to prevent a catastrophic spill during a large erosion event like break-up in 2009. Construction planned for summer and fall 2011.

- Delta Clearwater Remediation—This project is to restore the partially completed construction site of the original Delta Clearwater Watershed Project. The original watershed project was only 20% complete back in 2001 when it became obvious the design concept was not going to address the original resource concerns. Extensive reconsideration of the design and planning process didn't reveal any acceptable design alternatives that were within the realm of funding reality. Therefore, the decision was made to restore the site to original conditions to minimize the existing negative environmental effects from the partially completed project which is eroding in its current state. The project is currently out for bid and construction will occur May-September 2011 and then again May-June 2012.

SNOW SURVEY ACTIVITES

NRCS Snow Survey appreciates the In-Kind Services provided annually to the Snow Survey Program from each of the agencies and private companies. The In-Kind contributions for personal, equipment and air charter are in excess of $250,000 annually with an additional $150,000 plus in reimbursable funds.

The following is brief summary of the antipated summer work for the Alaska Snow Survey/Water Supply Forecasting Program (SS/WSFP) for fiscal year 2011.

- We are planning to install three SNOTEL sites and will be upgrading six automated sites to SNOTEL. The three SNOTEL sites are Exit Glacier, McNeil River and American Creek (near Eagle). The six automated sites to SNOTEL are: Rhoads Creek (SE of Delta Jct.), Kelly Station (Noatak River), Bettles, Sagwon (60 miles south of Deadhorse), Prudhoe Bay, and Moore Creek (N of Skagway).
- We installed six prototype Iridium telemetry modems this Fall, they have worked flawlessly. We have purchased ten additional Iridium modems, and plan to purchase ten more and we are in the process of trading out the meteorbust communications with the Iridium modems. The hardware is about 1/3 the cost of the meteorburst and the power requirement is 1/3 to ¼ of meteorburst. The annual throughput expense will vary depending on how many sensors are at a particular site, the range is $400 to

$570/site/year. The Meteorburst master station is scheduled to be turned off the end of FY2012 having been operational since 1977.

The Alaska Snow Survey Program data records are on the National Water and Climate Center web site http://www.wcc.nrcs.usda.gov/. Many products are now available to use at this National web site.

The Alaska staff currently consists of a Hydrologist, Hydro-tech and Data Collection Officer (DCO). The staff oversees and QC's the collection of the data from 53 SNOTEL sites, 8 additional sites with on site data loggers recording daily data, and 232 snow courses that have monthly readings throughout the winter. From this data, we generate 129 volume stream flow forecasts and snowmelt runoff indices.

NOAA NWS Agency Report

Presented by
Scott Lindsey
Service Coordination Hydrologist

National Weather Service
Alaska-Pacific River Forecast Center (APRFC)
http://aprfc.arh.noaa.gov
April 2011

Management and Staff

Current staffing and contacts are as follows:

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Juneau - Mike Mitchell and Aaron Jacobs, Hydro Focal Points, 790-6824

Operations/Flooding

There were very few floods this past winter, although a heavy rainfall event in November caused breakup to initiate on the Kuskokwim River. Water levels rose to nearly bankfull and breakup progressed downstream to the lower river before more seasonal temperatures returned. This may have some implications for the 2011 Spring breakup. A tremendous amount of aufeis has accumulated on the Gakona River at Gakona Junction. Flooding is likely to occur when any significant snowmelt reaches the area. We have two new staff members. Jamie Montesi took a position in Northern California with the National Marine Fisheries Service and Larry Rundquist retired after a long and distinguished career. Celine Van Breukelen arrived in January after finishing an M.S. Degree at UAF. Dave Streubel worked at the RFC previously before leaving in 2008 for a stint at the NWS Western Region Headquarters in Salt Lake City, Utah. Dave has been hired as the DOH and will be heavily involved in science, training and research to operations at the RFC.

River/Rain Gauge Network

We plan to add a few river observers to our network this summer at locations with previous data collection and/or new locations. We hope to be able to deploy a few new automated gage stations as well. No full weather stations are planned for deployment this summer. Funding challenges will limit fieldwork and may eliminate any additions to the gage network as well.

Climate Reference Network

The Alaska CRN currently has sites in Barrow, Fairbanks, Port Alsworth, Sand Point, Sitka, and St. Paul. Two new Alaska USCRN sites at Red Dog Mine and Kenai were installed this past summer. Two sites installed in 2009 at Port Alsworth and Sand Point became the first fully commissioned stations in the Alaska USCRN. Barrow, Fairbanks, Sitka, and St. Paul Island continue to operate as experimental USCRN sites, bringing the total of operational stations in Alaska to eight. A list of all USCRN stations can be found at: http://www.ncdc.noaa.gov/isis/stationlist?networkid=1.

The USCRN Program has a completed permit for an installation in Tetlin National Wildlife Refuge (NWR), and been working on permit issues for sites at Yakutat Airport and Summit Airstrip. Funding permitting, Tetlin and Yakutat will be installed this summer. Other sites that were surveyed in 2010 and are being considered by a site selection process include locations in Selawik NWR, Nowitna NWR, Katmai National Park, and one near Gustavus, AK.

Climate Services

The new regional climate services director for Anchorage is James Partain. A climate services meeting was held in Fairbanks in March with the climate focal points of the NWS offices in the Alaska Region. See the accompanying Powerpoint presentation for more information on the NOAA Climate Service.

Projects

The development season over the past year and a half has been dominated by the installation and configuration of our new operating environment called Community Hydrologic Prediction System (CHPS). The migration of our old forecast system into CHPS is complete. The new operating environment will allow us to access other hydrologic models and to add new models easily. We plan to operate beginning this forecast season (post-breakup) using the new system. We have also begun a collaborative effort with UAF to ingest MODIS data into CHPS as a proxy for areal extent of snow cover observations. CHPS/FEWS is running on UAF's computer system enabling a PhD candidate there to test the ingest of satellite data into the system. Other development this winter included calibration of our hydrologic model for the Porcupine basin, recalibration of the Bradley Lake system, further development of techniques for producing gridded precipitation, temperature, and freezing level products, web site improvements, computer system maintenance, and staff training. We now have web access to historic data for most of our NWS river gages from the APRFC home page.

NOHRSC Activities for Alaska

The airborne snow water equivalent program started April 6, 2011 and is scheduled to continue over the next 2 weeks of April. A land surface modeling system is currently in operation at NOHRSC for Alaska. It is NASA's Land Information System version 6, driven by Global Data Assimilation System (GDAS) forcing data at 35 km resolution. They are running two land surface models, NOAH and CLM2, at 0.01º resolution, both of which model snowpack and soil conditions. The model is current and running operationally, after a cold start in June 2009. The NASA project under which this work is funded also calls for the future implementation of Land Information System (LIS) satellite data assimilation methods. The River Forecast Center is ingesting modeled snow water equivalent grids in Grib2 format into CHPS for comparison with the snow modeling from calibrated NWS models.

Precipitation Frequency Project For Alaska

The University of Alaska, Fairbanks (UAF) is moving forward on the joint effort with NWS to update precipitation frequency estimates for Alaska. UAF continues with data collection, formatting, and quality control. UAF discussed with Alaska University Transportation Center (partial funding source) the issue of liquid and solid precipitation versus liquid only precipitation frequency estimation. It was concluded to look at rainfall precipitation only. Further details of the progress thus far will be provided by UAF.

Engineering designs are typically based on rainfall frequency estimates for durations between 15 minutes and 24 hours, although there are some applications that may require longer durations. It was decided to proceed with the analysis across all durations (5-minute to 60-day) since logistically the software is already in place, and then decide after the frequency analysis is done if any of the longer durations should be discarded.

In the next reporting period (3rd Quarter 2011), NCDC and SNOTEL data will be updated. Work on station merging, co-located station cleanup and an examination of geospatial data will be completed. The quality control of precipitation annual maximum series (AMS) outliers at all durations will be completed and a review of mean annual maxima will begin. Extraction of rainfall-only AMS using temperature data will also be completed.

The schedule for some tasks has slipped due to technical issues in formatting difficult datasets and revised completion dates are shown. The project is still expected to be completed on time.

- UAF: data collection, formatting, and initial quality control [Complete]
- UAF: extraction of annual maximum series (AMS) for precipitation and rainfall; additional quality control and data reliability tests (e.g., outliers, trend analysis, independence, consistency across durations, duplicate stations, candidates for merging). [February 2010; revised to January 2011*]
- Hydrometeorological Design Studies Center (HDSC): regionalization and frequency analysis [September 2010, revised to March 2011]
- HDSC: initial spatial interpolation of PF estimates and consistency checks across durations

[January 2011, revised to April 2011]
- HDSC: peer review [March 2011, revised to May 2011]
- HDSC: revision of PF estimates [May 2011, revised to July 2011]
- HDSC and UAF: remaining tasks (e.g., development of precipitation frequency estimates for PD series, seasonality, temporal distributions, documentation) [August 2011]
- HDSC: web publication [September 2011 (verified by email 24 March 2011)]

National Water Center

The NWS Hydrology Program was provided an opportunity last summer due to a Congressional mandate to form a NOAA Center at the University of Alabama in Tuscaloosa. In coordination with NWS and NOAA leadership, the Hydrology Program engaged the University in developing a vision for a new National Water Center (NWC). The vision is that this facility will combine operations, operational support, and research and development in water resources. The building is planned to be completed by November, 2013. The NWC will leverage the on-going Integrated Water Resources Science and Services (IWRSS) initiative to engage Federal water agencies. The USGS has committed to dedicating staff to the Center and the USACOE has also expressed interest. The Hydrology Program has developed strategies to staff the building. There are no plans to relocate any RFCs or WFOs to Tuscaloosa. The primary purpose of the center will be to provide national guidance and to support the transition of our River Forecast Centers into Water Resource Centers.

1. National Water Center Update
    - Architects finished schematic phase. Presented to University of Alabama the week of March 21. Will be followed by presentation to U of A Board of Trustees in late April.
    - Next stage – design/develop – to same architectural firm.
    - Hope to advertise for design/build firm in late April with award by end of FY11.
    - Groundbreaking – Jan. 2012 Building completion 12-18 months after.
    - Funded by FY09 and FY10 NOAA earmarks
    - Staffing model – still undecided. Don Cline (Chief Hydrologic Laboratory, Office of Hydrologic Development, NWS) meeting with NWS and NOAA CFOs. NOAA agreed to support budget request for staff.
    - Government realignment mentioned by Obama in State of the Union: IWRSS a good example of government collaboration.

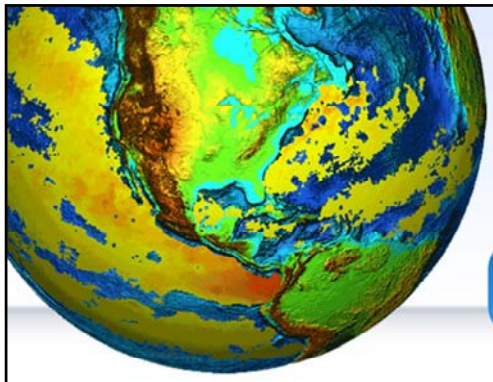
The first employee for the Water Center was transferred there by the USGS; he is an engineer and will work with the university, the builders and the NWS during the construction phase as well as continuing his normal duties in a university provided office.

National Water Managers Meeting

The NWS had planned to have a meeting of its Hydrology Program managers in Anchorage this spring. This meeting has been cancelled as a result of budget cuts.

Flood Safety Awareness Week

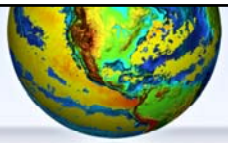
APRFC will be shifting the dates again this spring from March to late April. The Alaska Flood Safety Awareness Week will be April 18-22, 2011. The National Flood Safety Awareness Week webpage can be found at http://www.weather.gov/floodsafety/.



THE CLIMATE SERVICE

Meeting at NWS Southern Region Headquarters
Fort Worth, TX
November 8, 2010

Eileen Shea
Climate Service Team
NCDC, Climate Services Division



Effectively Anticipating and Responding to a Changing Climate Requires…

A continuously evolving understanding of the integrated "*climate-society system" (Glantz)* to address today's challenges and plan for the future

and

An adaptive management approach that provides for regular evaluation and adjustment of decisions as new scientific insights emerge and socio-economic conditions change

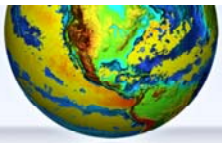
People, Places, Possibilities, Partnerships: Understanding Risks & Enhancing Resilience

Background: February 8th DOC – NOAA Announcement

"We are announcing the intent to reorganize existing assets to make NOAA's Climate Services more responsive to the needs of those who use our services. While additional funds will be needed to increase NOAA's core climate capabilities going forward to meet growing demands, the proposed reorganization is independent of new resources."

—Joint press conference with Secretary Gary Locke and Under Secretary Jane Lubchenco

http://www.noaa.gov/climate.html



Meeting the Rising Demand for Climate Services

1. NOAA's existing framework for climate was established before climate services were recognized as essential, and is not optimized for climate service delivery.
2. While NOAA has continued to build its suite of climate services within its existing framework, including our interagency approach to delivering drought information services, much of the demand remains unmet.
3. To meet climate service demands, NOAA must direct efforts to develop a framework that will:
   - Connect users to existing climate products and services, while continuing to develop new authoritative, reliable services;
   - Transform current science and data into understandable, usable and accessible information; and
   - Actively engage users in service development.
4. NOAA's climate framework must deliver needed climate services while maintaining leadership in observing, research, modeling and assessments

"If America is to avoid the most damaging effects of climate change, we have to first understand it – and that is where the Department of Commerce is instrumental." - Secretary of Commerce, Gary Locke

Progress Since February 2010

- Regional Climate Services Directors hired and plans for early activities completed
- Congressional requested National Academy of Public Administration Study complete
- Development of draft reprogramming package
- Development of Vision and Strategic Framework document
  - Written by NOAA senior climate science and service managers and practitioners from across the line offices

CS Vision and Mission

Vision

By providing science and services, the CS envisions an informed society capable of anticipating and responding to climate and its impacts.

Mission

Improve understanding and prediction of changes in climate and promote a climate-resilient society by:

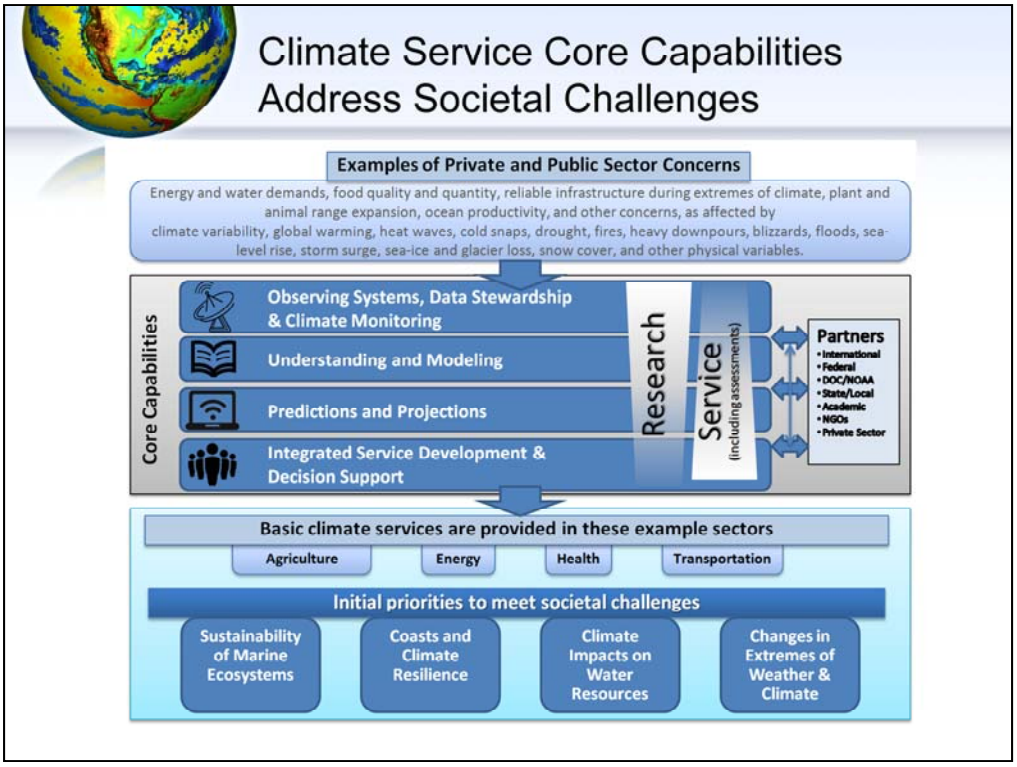
- Monitoring climate trends, conducting research, and developing models to strengthen our knowledge of the changing climate and its impacts on our physical, economic, and societal systems
- Providing authoritative and timely information products and services about climate change, climate variability, and impacts
- Informing decision making and management at the local, state, regional, national, and international levels

The CS delivers products and services in collaboration with public, private, and academic partners to maximize social, economic, and environmental benefits.

CS Objectives

Consistent with Climate objectives from NOAA's Next Generation Strategic Plan (public comment period closed)

- Improved understanding of the changing climate system and its impacts
- Integrated assessment of current and future states of the climate system that identify potential impacts and inform science, services, and decisions
- Mitigation and adaptation choices supported by sustained, reliable, and timely climate services
- A climate-literate public that understands its vulnerabilities to a changing climate and makes informed decisions.


Climate Service Core Capabilities Address Societal Challenges
Examples of Private and Public Sector Concerns
Energy and water demands, food quality and quantity, reliable infrastructure during extremes of climate, plant and animal range expansion, ocean productivity, and other concerns, as affected by climate variability, global warming, heat waves, cold snaps, drought, fires, heavy downpours, blizzards, floods, sea-level rise, storm surge, sea-ice and glacier loss, snow cover, and other physical variables.
Core Capabilities
Observing Systems, Data Stewardship & Climate Monitoring
Understanding and Modeling
Predictions and Projections
Integrated Service Development & Decision Support
Research
Service
(including assessments)
Partners
• International
• Federal
• DOC/NOAA
• State/Local
• Academic
• NGOs
• Private Sector
Basic climate services are provided in these example sectors
Agriculture
Energy
Health
Transportation
Initial priorities to meet societal challenges
Sustainability of Marine Ecosystems
Coasts and Climate Resilience
Climate Impacts on Water Resources
Changes in Extremes of Weather & Climate

NAPA Recommendations

1. Administration Recommendations

- The Administration should take actionable steps to establish an Interagency climate services framework
- NOAA should be designated the Lead Agency if an Interagency framework is established

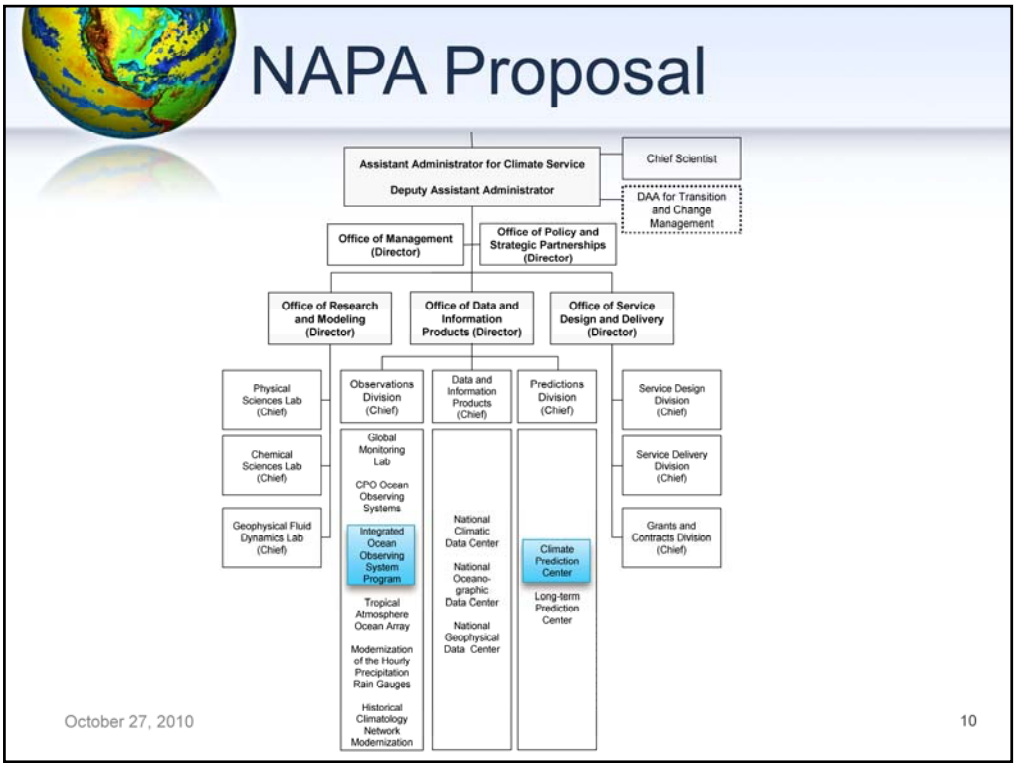
2. NOAA Organizational Recommendations

- A new Climate Service Line Office is the right organizational design choice
- Science and service assets should be combined within one Line Office
- NAPA's overall proposed Line Office structure aligns with the NOAA-DOC proposal

3. NOAA Implementation Recommendations

- Establish transitional leadership focused on Implementation and Change Management
- Examples of lessons learned from previous large reorganizations from the defense and security communities

9



Highlighted are CPC and IOOS. These are the two major areas where NAPA's organizational proposal differs from NOAA. NOAA does not include these two programs within the CS proposal.

NAPA also includes a number of proposals to help with Implementation:

1. The Academy Panel recommends that NOAA hire a Deputy Assistant Administrator for Transition and Change to provide a full-time, systematic focus on managing start-up issues at the new agency.
2. Openly compete all SES positions
3. To fill personnel gaps and bring on new skill sets, encourage details from other Line Offices, across agencies, the private sector, and state and local governments.
4. The Panel recommends NOAA continue the development of its climate portal, and plan for investments necessary to operate a virtual clearinghouse for federal climate information.

Partners

Partners from across the broader climate community both contribute to and benefit from the core capabilities

- Other parts of NOAA, Federal, state, tribal and local agencies, cooperative institutes and other academic partners, the private sector, NGOs and the international community

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Regional Climate Service Directors

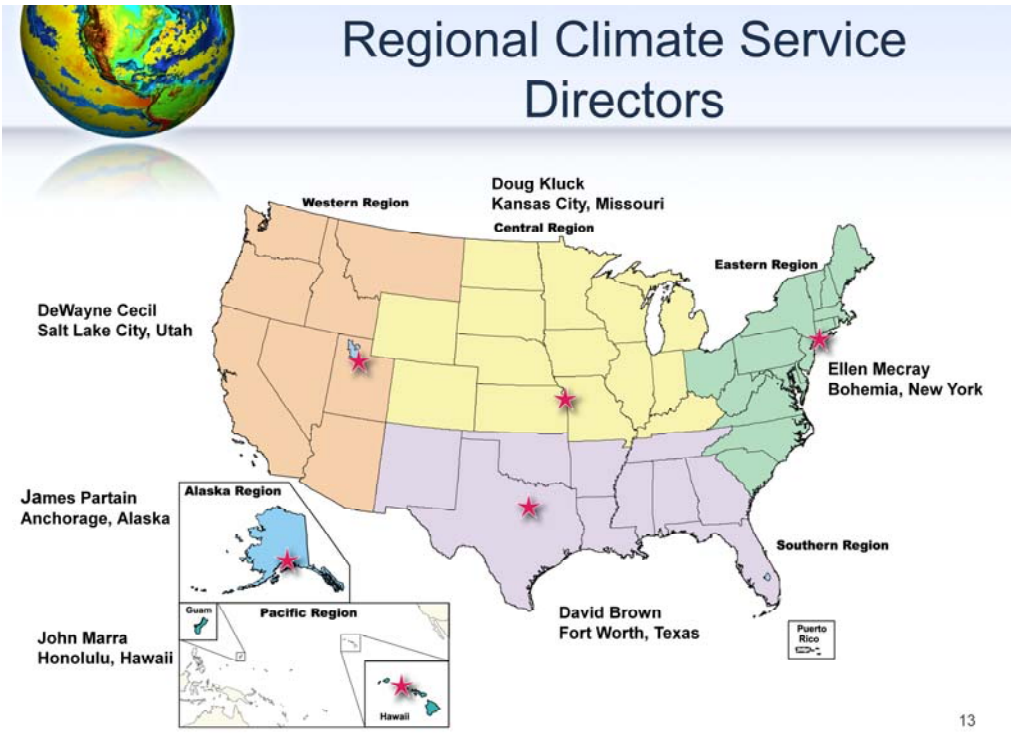
NOAA has created 6 Regional Climate Service Director positions

Announcements are posted on USAJOBs (February 9th, 2010)

The primary functions include:

- Responsibility for providing leadership in the development of an integrated NOAA program of climate services on a regional scale that responds to the needs of stakeholders and draws upon agency-wide assets and capabilities.
- Management of the development and execution of a Regional Climate Services Strategic Plan that combines the unique assets and special capabilities of NOAA programs working with regional partners in other Federal agencies, state, local and tribal governments, universities, the private sector and NGOs.

12



To provide leadership in integrating the climate service portfolio, NOAA is establishing six new positions for Regional Climate Services Directors. These Directors have been hired, and we will be announcing them next week. These directors will draw on NOAA's agency-wide capabilities to manage and execute the Regional Climate Services Strategic Plan that is being developed.

NOAA already has extensive regional climate capabilities and leveraging them will be one of the most important outcomes of establishing a climate line office. The six positions will be co-located in NWS regions. This is a first step, and as NOAA grows its climate service capacity it will use existing relationships and structures to the greatest extent possible.

NOAA does not expect all of its climate service growth to occur based on where our climate science location exists today.

Regional Climate Service Partnership
Key Objectives

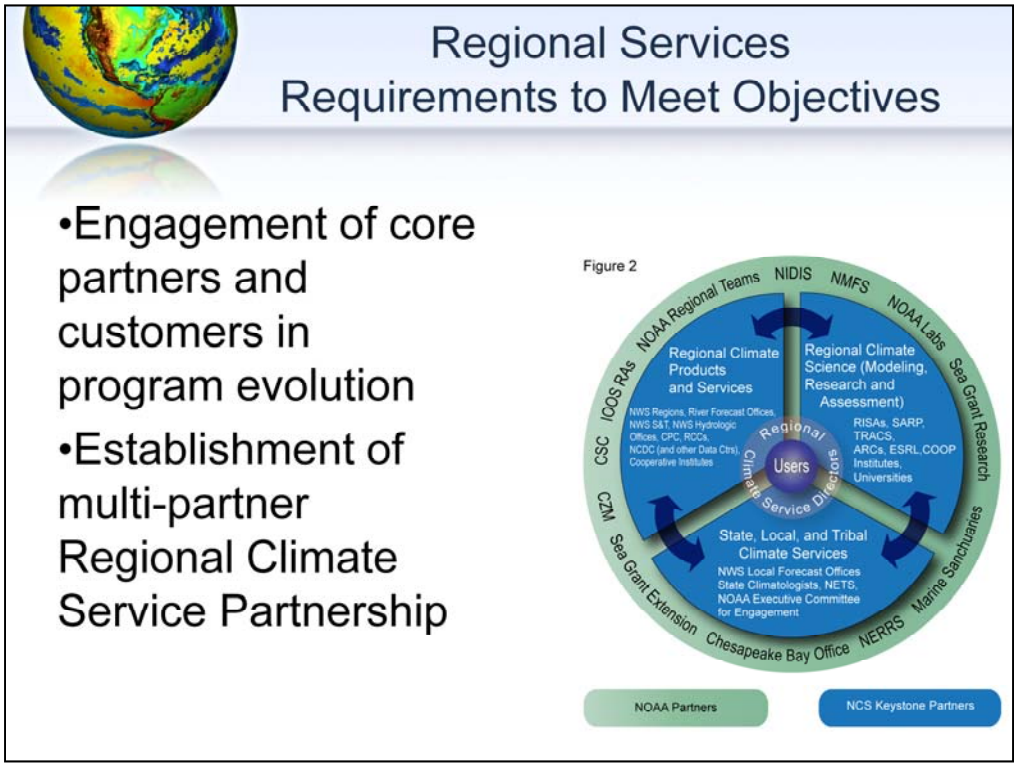
- Develop, deliver and communicate *problem-focused* products, information services and decision support tools
- Connect users to existing climate products and services while continuing to develop new, authoritative, reliable services

Regional Climate Service Partnership
Key Objectives

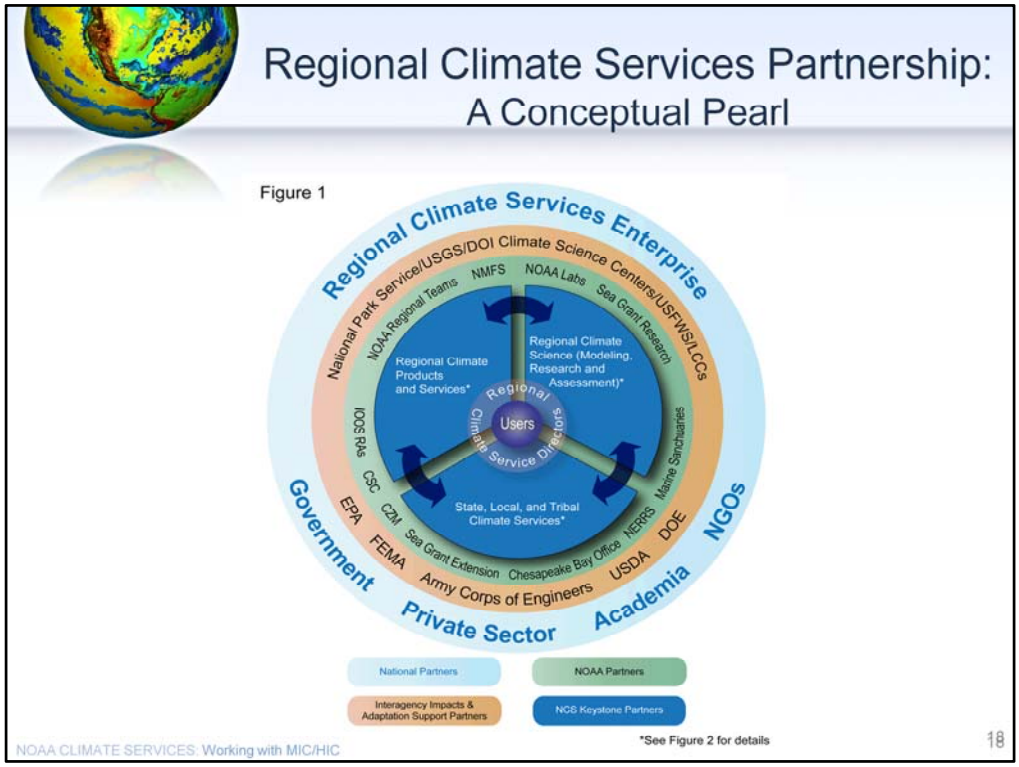
- Support decision-making by providing *place-based information and assessments* that advance understanding of regional and sectoral climate impacts and risks in coordination with USGCRP and other national and regional programs
- *Promote scientifically-based adaptation and mitigation support* by building and integrating NOAA's climate science and service capabilities

Regional Climate Service Partnership: Key Objectives

- Build a robust, *service-centric* program that ensures that *users are actively engaged* in service development through sustained engagement, dialogue and collaboration with users
- Improve the integration of climate science and services across the nation's climate service enterprise by promoting partnerships that *leverage the assets of all levels of government, academia, NGOs and the private sector*



- Institutional/programmatic foundation for understanding climate, impacts, vulnerability & information needs
- Integrated direction and support for keystone Enterprise partnerships (RCCs, RISAs, SCs, Sea Grant, NWS, CSC, others)
- Regional partnerships and action plans
- Regional components of NCS Portal
- Engagement of & coordination with other NOAA, government (Fed, state, local), NGO and private sector partners in regions


Regional Climate Services Partnership:
A Conceptual Pearl
Figure 1
Regional Climate Services Enterprise
National Park Service/USGS/DOI Climate Science Centers/USFWS/LCCs
NOAA Regional Teams
NMFS
NOAA Labs
Sea Grant Research
Regional Climate Products and Services*
Regional Climate Science (Modeling, Research and Assessment)*
Regional Climate Service Directors
Users
IOOS RAs
CSC
CZM
Sea Grant Extension
Chesapeake Bay Office
NERRS
Marine Sanctuaries
State, Local, and Tribal Climate Services*
Government
EPA
FEMA
Army Corps of Engineers
USDA
DOE
Private Sector
Academia
NGOs
National Partners
NOAA Partners
Interagency Impacts & Adaptation Support Partners
NGS Keystone Partners
*See Figure 2 for details
NOAA CLIMATE SERVICES: Working with MIC/HIC
18

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

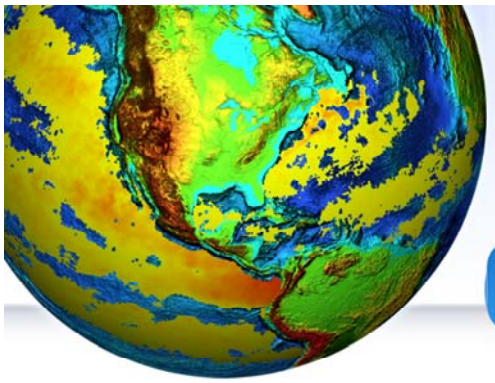
NWS and NCS

- Climate Prediction Center products and services are central to overall Climate Service success
- Shared responsibility for "seamless suite" of weather and climate products
- Critical partners in regional climate services
  - CSD, NWS Regions and WSFOs
  - River Forecast Offices
  - Co-location of Regional Climate Service Directors
  - NWS as trusted information brokers

19

Next Steps

- Submit a reprogramming package to OMB and engage Congress in 2011
- Pending approval, implement the Climate Service
  - FY11 AOP Planning Meeting in Charleston, SC; November 4-5, 2010
  - Implementation Plan completed in SEE process
  - Develop regional services action plans
  - Continuous customer engagement & product development



THE CLIMATE SERVICE

Thank You…

Questions?