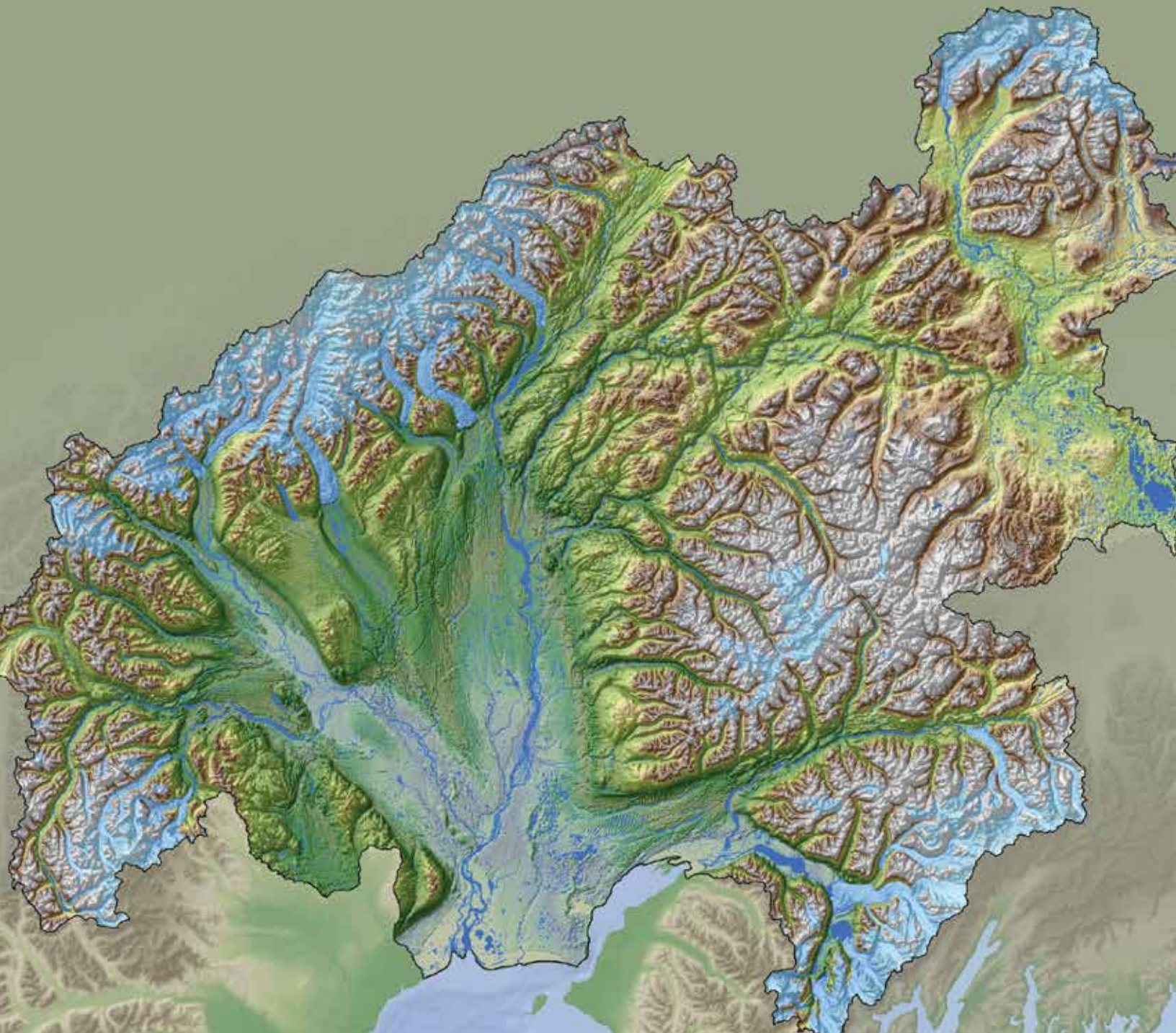


MATANUSKA-SUSITNA BASIN SALMON HABITAT PARTNERSHIP

Healthy Salmon / Healthy Communities

2014–2015



Mat-Su salmon

PARTNERSHIP



Three happy girls after a day of fishing on the Little Susitna River. *Patty Sullivan/Mat-Su Borough*

On the cover: The Matanuska and Susitna watersheds, covering nearly 25,000 square miles and near in size to the state of West Virginia. Recent updated stream maps doubled the number of mapped stream miles to a total of over 50,000 miles.

James DePasquale/The Nature Conservancy

Dear Salmon Friends,

There are few places in the world where salmon still run up the rivers and feed communities; Mat-Su is one of them. From the fishermen who make a living catching salmon, to guides who take anglers up the rivers and residents who fish to put food in their freezers, salmon are an essential part of our lives.

Mat-Su Basin Salmon Habitat Partnership (the Partnership) members believe that thriving fish, healthy habitats, and vibrant communities can co-exist in the Mat-Su. We've been busy these past two years protecting and restoring salmon habitat through science, conservation, restoration and outreach projects. This report highlights just a few of the projects and collective achievements in 2014–2015.



Partnership Coordinator Jessica Speed (far left) and Partnership Steering Committee members Corinne Smith/The Nature Conservancy, Bill Rice/ U.S. Fish & Wildlife Service, Frankie Barker/Mat-Su Borough and Christy Cincotta/Tyonek Tribal Conservation District.

Thanks to the National Fish Habitat Partnership, the Partnership was able to award grants to local and regional organizations totaling \$258,000 in 2014 and \$236,000 in 2015 for 17 projects focused on conserving or restoring salmon habitat or improving knowledge about Mat-Su salmon and their habitat.

Our annual Mat-Su Salmon Science and Conservation Symposia, held in November every year, continue to be our premier outreach event and annual general meeting for the Partnership. A new endeavor last summer took community leaders on a

summer site tour of partner projects around Big Lake and Shell Lake, giving exposure to what partners are doing and why it matters.

The Partnership has several conservation priorities going forward. A main focus continues to be improving our knowledge of the location and presence of salmon in streams to provide essential information for protecting key existing habitat. In addition, as development continues, the Partnership is concerned about the alteration of riparian areas along lakes, streams and rivers; the filling of wetlands; and culverts that block fish passage. The latter is an ongoing priority that has seen many successful efforts over the years.

It takes all of us to keep our salmon habitat healthy. Please contact us if you want to know how you can help protect salmon in the Mat-Su.

Sincerely,

Mat-Su Basin Salmon Habitat Partnership Steering Committee and Coordinator

PARTNERSHIP

The Mat-Su Basin Salmon Habitat Partnership formed ten years ago to address increasing impacts from human use and development on salmon habitat in the Mat-Su. With the Partnership's existence came an opportunity to leverage past efforts and catalyze diverse interests around salmon and the conservation of their habitat. Today the Partnership is a diverse and dedicated group of over 60 organizations and individuals who are proactively addressing salmon habitat issues in the Mat-Su Basin. From the beginning, the Partnership has been united by a common vision where thriving fish, healthy habitats, and vibrant communities co-exist. An important role, and one we pride ourselves on, is bringing people together to gain and share knowledge, resources, and a vibrant appreciation for salmon.

day, over 30 oral and poster presenters, a 9-person planning committee, over 25 volunteers, and dozens of supporters, it is unquestionably a partnership event that embodies a spirit of cooperation and collaboration. Each year the Symposium continues to evolve and mature. These past two years have brought a record turnout of 140 people in a day, college and high school student participation, greater general public and local business involvement, and incredible keynote speakers. Perhaps its greatest asset, the Symposium provides a friendly forum where a range of ideas, collaborations and a diversity of views can be shared. We are looking forward to further involvement of the general public and broader community in future years.

Partnership Summer Site Tour

In August 2015, the Partnership and Cook Inlet Aquaculture Association hosted a first annual tour of partnership projects for community leaders. The goal of the event was to introduce the Partnership and the range of work undertaken by partners to a broader public audience. It was a great opportunity for all of us—participants, presenters and organizers—to get to know each other, learn more about Mat-Su salmon and their habitat, as well as the great efforts to maintain our wild salmon resources in the Mat-Su. We are so grateful to everyone who took the time to attend, demonstrating their commitment to keeping wild abundant salmon in the Mat-Su! Please stay tuned for details about our 2016 site tour.



2015 Mat-Su Salmon Symposium in Palmer. Please consider joining us at this fun annual event—everyone is welcome.

Annual Mat-Su Salmon Science and Conservation Symposium

The Symposium is the most diverse gathering of its kind in the Mat-Su, bringing together a broad range of people to share information and exchange ideas about salmon science and conservation. Presentations span a wide range of topics from the economic value of salmon to prioritizing efforts for strategic conservation. With near 100 people attending each

Wildlife Wednesdays

In 2015 The Mat-Su Salmon Partnership partnered with the Alaska Department of Fish and Game (ADF&G), Alaskans for Palmer Hayflats and The Nature Conservancy on a monthly lecture series about local fish and wildlife resources at Mat-Su College called Wildlife Wednesdays.

Here are just a few of the creative outreach and education initiatives partners are offering:

Clean Boating Cook Inletkeeper’s clean boating campaign addresses hydrocarbon pollution in Mat-Su waters.

Baby Salmon Live Here signs around the valley highlight that baby salmon do live here year round and need us to play a role. Get in touch with Great Land Trust if you want to sponsor a sign!

Septic Smart Mat-Su Conservation Services coordinates and educates about cost share pumping of septic tanks and potential impacts to nearby waterbodies.



Kingmakers Great Land Trust’s Kingmakers initiative celebrates exceptional efforts of individuals for salmon.

Mike Gracz of Kenai Watershed Forum is crowned a King Maker by Kim Sollien of Great Land Trust for all the work he has done to map wetlands important to salmon.

Salmon in the Classroom Alaska Department of Fish and Game helps kids learn about the salmon lifecycle by nurturing salmon eggs to fry in the classroom.

Susitna Salmon Center in Talkeetna Aquatic Restoration and Research Institute has created a new home grown salmon education center, art gallery and gift shop.



Partnership site tour at Shell Lake. Gary Fandrei /Cook Inlet Aquaculture Association

17 With funding from the National Fish Habitat Partnership, the Partnership has provided nearly \$500,000 for 17 salmon habitat projects in the Mat-Su in 2014 & 2015, with over 4 million dollars in direct match and leveraged funds from private and public sources.

72 The Mat-Su Salmon Partnership has funded 72 projects in the Mat-Su Basin since 2006.



Welcome to our 6 New Partners in 2014/15

- Alaska Trails (Non-profit)
- Knik Tribal Conservation District (Tribal)
- Mat-Su Trails and Parks Foundation (Non-profit)
- Sustainable Design Group (Business)
- 2 private individuals—Eagle River & Sutton residents



From an economic perspective, wild salmon may be the world’s most perfect business model: Nature provides the necessary infrastructure, we invest nothing in the wild production system, and every year we harvest an enormously valuable resource.

– Richard Nelson, Keynote speaker at the 2015 Mat-Su Salmon Science and Conservation Symposium



SCIENCE

In the Mat-Su, as in much of Alaska, we are still lacking in some of the basic foundational science needed to inform strategic habitat conservation. Filling in those knowledge gaps has been a priority. In the last two years we have made some great strides in these foundational areas:

Mapping streams to national standards

In December of 2015 The Nature Conservancy and partners completed an update to the U.S. Geological Survey (USGS) National Hydrographic Database. This doubled the number of mapped streams in the Mat-Su Basin, increased the accuracy of stream maps, and brought them up to national standards. Having the many smaller tributary streams in which juvenile salmon mature before swimming to the sea now mapped accurately for the first time, will help us all make salmon-friendly decisions about how to manage and develop our lands and waters. The utility of this publicly-available dataset goes beyond salmon to potentially include enhanced flood preparedness, emergency response, and community and development planning. For the Partnership, it improves our ability to effectively participate in the national fish habitat assessment looking at the status of fish habitat across the nation and helps partners prioritize fish passage restoration efforts.

Increasing knowledge of juvenile salmon

Partners have continued to increase our knowledge of juvenile salmon distribution, abundance and important areas for summer rearing and overwintering over the last few years. For example, Aquatic Restoration and Research Institute scientists discovered greater use of the mainstem Susitna River by juvenile salmon. Fisheries biologists from the U.S. Fish and Wildlife Service (USFWS) have found that although widespread in summer in tributaries and mainstem rivers, juvenile coho salmon in the Big Lake drainage have just a handful of key overwintering areas. Knowing how juvenile salmon are using habitat throughout the year, and what areas are most important for them is critical information for making informed decisions regarding development and where to spend limited fish passage restoration dollars to improve access to key habitats.



Left: Using a minnow trap to document salmon presence. *Katrina Mueller/USFWS*
Above Top: Trapping juvenile salmon on Swiftwater Creek to understand how, where and when they use certain habitats. *Katrina Mueller/USFWS*
Above: Juvenile coho salmon from the Big Lake drainage. *Caroline Walls/USFWS*

Long-term stream temperature monitoring and identification of cold water refugia

Scientists agree that, in general, when water temperatures exceed 17°C (~62°F) salmon suffer negative effects. Prolonged exposure to high temperatures can even result in death. Cook Inletkeeper (CIK) and partners are maintaining a network of stream temperature monitoring sites to track long-term patterns across the Mat-Su basin. In addition, CIK and U.S. Fish and Wildlife Service are identifying cold water refugia—areas that will remain coolest in a warming climate and therefore provide important habitat to support salmon resiliency. This knowledge is directly informing land trusts as they work to conserve important lands today and into the future.

Building on their work in Mat-Su, CIK, and University of Alaska Anchorage also established minimum standards for water temperature data collection for Alaska. Acquiring more comparable data across the state will aid in understanding current and future regional temperature trends in Alaska’s freshwater habitat.

Go to the AKOATS website!
<http://accs.uaa.alaska.edu/aquatic-ecology/akoats/>.

Index watersheds

In the last two years, the Partnership’s Science and Data Committee started work to identify representative index watersheds. These areas will be used for focused study on salmon and their habitat, and to detect both change within these individual index watersheds, and across the basin as a whole over time.

Invasive species surveys

Several non-native invasive species like the aquatic invasive plant Elodea and predatory fish northern pike pose threats to salmon and their habitat. Partner organizations are including surveys in their field work for early detection of aquatic invasive species spread. *Read more in restoration section.



The Mat-Su is the fastest growing area in the state by a large margin. How do you conserve habitat if you don’t know where it is? You have to identify where your streams are and that’s what the new stream mapping does for the Mat-Su.

– Larry Engel, retired Alaska Department of Fish and Game and member of the Mat-Su Borough Fish and Wildlife Commission

RESTORATION



Sockeye salmon struggling to move upstream through a road-stream crossing to spawning grounds. *Katrina Mueller/ USFWS*

The quality of salmon spawning, rearing, and overwintering habitat in the Mat-Su is closely linked to the level and location of human activity. Areas that overlap with more developed locations like the Palmer-Wasilla area are more degraded. Impacts are typically related to removal or alteration of native shoreline vegetation, degraded water quality, fish passage impediments and water flow changes.

Fish passage

Adult fish must be able to reach spawning areas and juvenile fish must be able to move both up and downstream to feed, find cover and overwinter: year-round, free passage is critical. Where roads cross streams, many culverts block or impede fish movements. A cost-benefit fish passage prioritization done in 2015 indicated that 290 barriers to fish passage remain in Mat-Su and likely prevent or limit salmon from reaching spawning or nursery grounds. Sixty-three of these barriers account for 75% of the total miles upstream of barriers. This information will help partners prioritize culverts for replacement opening up free passage for juvenile and adult salmon.

Aquatic invasives

Aquatic invasive species can have significant impacts on salmon and their habitat. Current threats to salmon in the Mat-Su are from water and shoreline plants Elodea and reed canarygrass, as well as the fish northern pike. The Partnership goal is to prevent further invasive introductions. The goals for the existing threats are:

- Eradication for Elodea, which was discovered in Alexander Lake in 2014. Treatment is planned for summer 2016 with partners performing detection surveys and educational outreach on the highest risk waterbodies.
- Containment for northern pike because they are much more widespread and well established than Elodea. Over 100 waterbodies in the Mat-Su have confirmed pike. Alexander Creek, which was formerly the home of a premier Chinook salmon fishery, is a focus area for ADF&G pike containment and localized eradication. Results have been positive and with each year of pike suppression, Chinook fry are being found farther up the stream system.
- Containment for reed canarygrass, which also is much more widespread. Partners have been mapping the extent of reed canarygrass and herbicide control is planned for in 2016.

14 barrier removals opened up 49.5 miles of upstream habitat and 857 acres of lakes.

11 shoreline restoration projects on public and private land through ADF&G/USFWS cost share program.

Stream bank restoration

In 2015, the Partnership identified maintenance of shoreline areas along lakes, streams and rivers as one of its top four conservation priorities. In the last two years the Mat-Su Valley Habitat Restoration and Protection Cost Share Program, administered cooperatively by ADF&G and USFWS completed 11 restoration projects on public and private land in the Mat-Su that conserved 2,500 feet of lake and streamside habitat along salmon streams; restored nearly 1,000 feet; and removed 670 feet of human-made structures that impacted salmon habitat.

Palmer Soil and Water Conservation District completed an assessment of riparian impacts on 35 priority waterbodies in the Mat-Su. Although some waterbodies like Big Lake, Blodgett Lake, and Cottonwood Creek had 27%, 12%, and 4% impacted shorelines respectively, the overall percentage of impacted shorelines remains relatively low. This underscores both the recognition there are areas of concern, and that there is a great opportunity in the Mat-Su to conserve riparian salmon habitats before they are impacted and financial resources expended in their restoration.



By connecting with local experts at annual Mat-Su Salmon Symposiums, we've been able to build relationships and increase our capacity to achieve our fish habitat restoration goals. Through these connections we've successfully opened over 20 miles of salmon habitat through culvert replacements since 2012.

— Christy Cincotta, Tyonek Tribal Conservation District



Restoring streambanks on Wasilla Creek. These vegetated shoreline areas provide cover for juvenile fish; cooler temperatures; have slower moving currents where weaker swimming fish can rest; and have over-hanging plants that fall into the water, creating food sources for aquatic insects that juvenile salmon eat. Photos: Frankie Barker/Mat-Su Borough and Jessica Speed/The Nature Conservancy



CONSERVATION

Katrina Mueller/USFWS

In the Mat-Su, there is still high quality, intact salmon habitat, and our top priority is to conserve and maintain that habitat—so salmon can successfully complete each life stage, from egg, alevin, fry, smolt to spawning adult. Strategically conserving healthy and intact salmon habitat has been one of the Partnership’s greatest areas of success.

Important salmon habitat conserved

Since 2014, Great Land Trust and partners have conserved nearly 2,000 acres of priority estuaries, wetlands, riparian areas, and uplands important for salmon in perpetuity under conservation easements. Priority lands for conservation were identified in a parcel prioritization (started in 2009 and updated in 2014) that identified 1,000 parcels providing important spawning, rearing, and overwintering habitat for salmon on 35 priority waterbodies.

Stream protection

Six streams and 84 stream miles were added to the Anadromous Waters Catalog. Adding waters to the Anadromous Waters Catalog improves information about salmon distribution and affords streams the protections under state law that come by being listed. Currently less than 20% of the miles of mapped streams in Mat-Su are in the catalog.

Conserving water quantity

Partners have been completing water reservations on important salmon streams vulnerable to development. This means that as the region grows and demand for water resources increases, or climatic conditions change, water will be reserved to remain in the stream for salmon. Applications for water reservations have focused on covering the most populated ‘core area’—Palmer-Wasilla-Knik area and along the Parks Highway from Willow to Talkeetna. These applications should be complete by 2017. A prioritization is underway by USGS, USFWS and ADF&G to help identify the next set of priority streams.

2000 Nearly 2,000 acres of important salmon habitat conserved.

6/84 6 streams and 84 stream miles added to the Anadromous Waters Catalog.



Great Land Trust partnered with the Student Conservation Association to build a light penetrating wetland boardwalk that provides an easy way for people to experience the Palmer Hay Flats Game Refuge.
Kim Sollien/Great Land Trust

In conclusion

Our Partnership and salmon habitat conservation in the Mat-Su is strong because of the competence and involvement of our Partners. Each has unique knowledge, expertise and resources to achieve together what we could not alone. We invite you to join us—students, teachers, scientists, managers, landowners, fishermen, developers and industry—we can all contribute in positive ways to a future where salmon continue to thrive in the Mat-Su. Looking forward, the Partnership will continue to focus on the goals laid out in our strategic plan, ensuring that salmon have healthy habitat to rear in and return to in the Mat-Su. We have a lot of people to thank for our collective success, many that could not be included in this publication.



The Partnership has been an invaluable resource in connecting Great Land Trust with agency and community partners who have helped us target our conservation dollars toward the lands that provide highest value for salmon and water quality. Thanks to the support of the Partnership, GLT has successfully conserved over 8,000 acres including 6,000 acres of wetlands and 44 miles of shoreline important to salmon in the Mat-Su.

– Kim Sollien, Great Land Trust

Mat-Su Salmon Habitat Partners

- Alaska Department of Commerce, Community and Economic Development
- Alaska Department of Environmental Conservation
- *Alaska Department of Fish and Game
- Alaska Department of Natural Resources
- Alaska Department of Transportation & Public Facilities
- Alaska Center for the Environment
- Alaska Outdoor Council
- Alaska Pacific University
- Alaska Railroad Corporation
- *Alaska Salmon Alliance
- Alaska Trails
- AlaskaChem Engineering
- Alaskans for Palmer Hay Flats
- Aquatic Restoration & Research Institute
- Bureau of Land Management
- Butte Area Residents Civic Organization
- *Chickaloon Village Traditional Council
- City of Palmer
- ConocoPhillips Alaska, Inc
- Cook Inlet Aquaculture Association
- Cook Inletkeeper
- Eklutna Tribal Conservation District
- Environmental Protection Agency
- Envision Mat-Su
- Fishtale River Guides
- Glacier Ridge Properties
- Great Land Trust
- HDR Alaska, Inc
- Knik River Watershed Group
- Knik Tribal Conservation District
- Matanuska River Watershed Coalition
- *Matanuska-Susitna Borough
- Mat-Su Anglers
- Mat-Su Conservation Services
- Mat-Su Trails & Parks Foundation
- Montana Creek Campground
- *National Marine Fisheries Service/NOAA
- National Park Service
- *Native Village of Eklutna
- Natural Resources Conservation Service
- Palmer Soil and Water Conservation District
- Pioneer Reserve
- Pound Studio
- SAGA
- Sierra Club
- Sustainable Design Group
- The Conservation Fund
- *The Nature Conservancy
- The Wildlifers
- Three Parameters Plus, Inc
- *Tyonek Tribal Conservation District
- United Cook Inlet Drift Association
- United Fishermen of Alaska
- Upper Susitna Soil & Water Conservation District
- U.S. Army Corps of Engineers
- *U.S. Fish and Wildlife Service
- U.S. Geological Survey
- U.S. Forest Service
- Wasilla Soil and Water Conservation District

The Partnership includes 59 organizations and two private individuals.
*Organizations on the Steering Committee



Mat-Su salmon

PARTNERSHIP

Learn more and get in touch!

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