

Mat-Su Salmon Partnership

Revisiting the Strategic Action Plan: A Scoping Document

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for the Steering Committee of the
Mat-Su Basin Salmon Habitat Partnership

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I. Introduction

In 2007 the Mat-Su Salmon Partnership embarked on an 18-month-long process to develop a Strategic Action Plan. The Partnership used the [Conservation Action Planning \(CAP\)](#) methodology to identify the species and ecological systems that represent and encompass the biodiversity of salmon and salmon habitat in the Mat-Su. Stresses and potential threats to salmon and salmon habitat that were anticipated in the next 10 years were ranked. Some potential threats have multiple impacts to salmon and their habitat, and situation analyses helped to focus on the more discrete issues upon which the Partnership could act (Table 1). The Partnership selected eight focal issues (i.e. stresses to salmon and their habitat) to address plus three over-arching science strategies to increase our knowledge about the location and characteristics of salmon habitat in the Mat-Su: fish distribution and life-cycle use, water quantity, and water quality. Then strategies to abate the threats and resulting focal issues were developed.

Table 1. Potential Threats and Focal Issues for Salmon and Salmon Habitat	
Potential Threat	Focal Issue
Housing and Urban Areas	Alteration of riparian areas
	Filling of wetlands
	Impervious surfaces and stormwater runoff
Household Septics & Urban Wastewater	Septic systems
Roads and Railroads	Culverts that block fish passage
Ground and Surface Water Withdrawals	Loss or alteration of water flow or volume
Development in Estuaries	Loss of estuaries and nearshore habitats
Invasive Northern Pike	Increased predation

In the last five years, much has happened in the Mat-Su Basin. Population growth and the accompanying development have continued in the Knik-Wasilla-Palmer core area and along the Parks Highway. Industry interest in coal mining in the Matanuska Valley has returned, and the state is reconsidering a decades-old plan to dam the upper Susitna River for hydroelectric power. Invasive aquatic plants have found their way to south-central Alaska. Scientists have learned more about predicting climate change and the impacts it will have to precipitation, temperatures, and other climatic attributes. Some salmon populations have been listed as Stocks of Concerns and the state has closed fisheries each summer.

The Mat-Su Salmon Partnership has also been busy in the last five years addressing the strategies of the Strategic Action Plan. Partners have replaced over 70 culverts that blocked migration of adult and juvenile salmon on Mat-Su streams. The state started a streambank restoration cooperative program that has helped restore riparian areas on private and public lands. Over 5000 acres of wetlands, riparian areas, and uplands important for salmon habitat have been protected through conservation easements, transfer to state conservation units, and wetland preservation banks. In the core area, wetlands have been mapped and characterized more accurately, the borough has a Wetlands Management Plan, and

the Corps is working with partners to develop a functional assessment of wetlands. Throughout the borough, a higher resolution and more recent map of impervious surfaces has been created, and the borough is working on a Stormwater Management Plan.

Given all these changes and activities, the Partnership's original intent to revisit the plan in 3 to 5 years seems warranted. A scoping process to gauge the need to update or revise the plan began in late 2011. This brief scoping document summarizes input from partners that was solicited through an online survey, a discussion session at the Mat-Su Salmon Science and Conservation Symposium, and various discussions with partners in the past year. Progress toward the current goals in the Strategic Action Plan was also considered. Partners voice consensus on the priorities for conserving salmon habitat. With this information, the steering committee has set out a process for revising the Strategic Action Plan to reflect changes in conditions and progress on goals.

II. Scoping Process

The Nature Conservancy coordinated the development of the Strategic Action Plan and the scoping of the need to revisit it now. We did this through discussions with individual partners and the Steering Committee and in a session at the Mat-Su Salmon Science and Conservation Symposium in November 2011. To ensure that all partners had the opportunity to share their thoughts, an online survey was used to solicit opinions on the greatest threats to salmon habitat in the Mat-Su and the priorities of the Partnership. Presentations at the symposium also provided a starting point for tracking progress on the Strategic Action Plan to gauge where the Partnership has reached or is nearing its goals. The Nature Conservancy has also been following various developments noted in the local and state media that might have impacts on salmon habitat in the Mat-Su. Feedback from these venues and discussions are summarized here.

1. Mat-Su Salmon Science and Conservation Symposium

At the 2011 symposium one session was devoted to getting partner feedback on Partnership priorities, changes in threats to salmon habitat, and allocation of funds from the National Fish Habitat Partnership. Frankie Barker, the facilitator for the session, encouraged thinking about how the Partnership can have success at the 700 year timeframe, as suggested by the keynote speaker David Montgomery. The discussion was framed broadly so responses were not limited and partners offered suggestions on overall priorities, threats to salmon, and strategies. Partner interest in threats was also indicated by participation in the open space discussion groups.

An interactive session at the symposium with David Montgomery solicited many challenges and issues for conservation of salmon in the Mat-Su. Montgomery emphasized that we should try to make decisions on a generational, if not geological, timeframe. Partners identified areas where better science is needed and noted challenges that current management presents. Several people noted education about salmon and protection of their habitat as priorities.

Notes from the flipcharts at those sessions are in Appendix B.

2. Partnership Survey

Fifty-five people responded to an online survey with eight questions about current and potential threats, funding priorities, and overall Partnership priorities. The survey questionnaire and results are in Appendix A.

Partners still view housing and urban development as the greatest potential threat to salmon habitat in the Mat-Su Basin. Inadequate culverts on roads and railroads ranked as the second greatest threat of those identified in the Strategic Action Planning. The other five potential threats in the plan were perceived somewhat equally. Septic systems and urban waste water had the lowest overall rating average, and Invasive northern pike received the most votes for lowest priority and for threats that the Partnership shouldn't be addressing.

Only nine respondents answered the question about potential threats in the current plan that should be removed. Over half of those (5) chose Invasive northern pike. All other threats, except Septic Systems, received one or two points. Given this low response rate, it is difficult to draw any conclusions from this survey question. Some people may have selected threats because they think the Partnership has made great progress, is not qualified, or that the activity is not a potential threat.

In response to what new potential or likely threats the Partnership should consider including in the plan, four received a majority of votes (respondents could identify up to 5): invasive aquatic plants, recreational activities, dams and hydroelectric power, and mineral and coal mining. Eighty percent selected dams and hydroelectric power. Almost half (47.3%) of respondents selected climate change as a potential threat to consider.

Answers to several questions indicate partner preferences for priority strategies and actions. Partners ranked priorities for funds from the National Fish Habitat Action Plan with protection highest, followed by education, restoration, and science, in that order. Additional responses supported assessments of impacts and policy changes. An open-ended question about partnership priorities for long-term salmon habitat conservation elicited 36 responses, with protection, improved information about salmon habitat usage, and education included in a majority of those. See Appendix A for all responses.

3. Progress on Goals and Objectives in the Strategic Action Plan

In the last five years, the Partnership has made great progress each year in three areas: adding waterbodies to the Anadromous Waters Catalog; protecting wetlands through conservation easements and management, mapping their location, and assessing function; and replacing culverts that block fish passage. Success on these objectives can be attributed to one or more of the following: organizational priority, financial investment, and collaboration of multiple partners.

Other objectives in the plan have seen lower effort and may not be on track to meet intended time lines. Partners have worked in varying degrees on water studies, water quality monitoring, restoration and projection of priority riparian habitats, assessing and minimizing the impacts of impervious surfaces and stormwater runoff, preventing new barriers to fish passage, protecting instream flow, understanding salmon use of Cook Inlet, and controlling the spread of invasive northern pike.

The Partnership has not begun efforts in several areas of the plan – improving wastewater disposal, assessing community water needs, and conserving estuaries through policy. Lack of engagement may be due to ambitious goals or the lack of a partner organization who can lead the effort and bring sufficient financial and political support to address the objectives.

III. Conclusions about Partnership Priorities

As would be expected in a diverse partnership, there are many ideas about what the priorities of the Partnership should be, yet consensus on some areas exists.

*** The greatest potential threat to salmon habitat in the Mat-Su Basin is still development due to population growth.** Even though good progress has been made on the plan goals for wetlands, riparian areas, and fish passage, partners express a consensus that the negative impacts of development on salmon habitat should remain a focus for the partnership.

***Science is a core need and tool for conserving salmon habitat.** Partners continue to emphasize the need to improve and expand the science about salmon and their habitat in the Mat-Su. They want good science to inform strategies and actions and to educate decision-makers and the public.

*** Five human or human-induced activities not in the current plan have potential to negatively impact salmon habitat.** Partners identified five human activities that ranked low as potential threats to salmon habitat in the current plan that should be re-considered now because of changes in their extent or likelihood in the Mat-Su:

- 1. Climate change:** Predictions of climate change impacts has advanced in the last five years and monitoring efforts on stream temperatures around Cook Inlet provides local data to help track and predict which Mat-Su waters may see the greatest or least effects. The US Fish and Wildlife Service Landscape Conservation Cooperatives are directly addressing climate change and may be able to incorporate Mat-Su salmon priorities into their efforts.
- 2. Dams and hydroelectric projects:** The state's reconsideration of damming the upper Susitna River highlights the need to better understand potential impacts of dams on anadromous rivers.
- 3. Invasive aquatic plants:** The invasive aquarium plant *Elodea* has been documented in south-central Alaska, including a float plane lake very close to Lake Hood, which means that it could be spread to remote parts of Alaska via float planes or by boats to more developed areas. The Partnership might want to consider aquatic invasives as a whole (e.g. plants and northern pike) and include invasive species that have an impact on riparian habitat (e.g. alder sawfly).
- 4. Mining :** In the last few years coal mining in the Matanuska Valley has resurfaced, and some mines would be near salmon streams where partners have invested in restoration. The Mat-Su continues to be a source of gravel for development in the area and Anchorage.
- 5. Motorized off-road recreational activities:** There was disagreement among partners about the inclusion of recreation in the current plan and partners would like it to be reconsidered.

***Protection of salmon habitat is considered a top priority for the Partnership.** In discussions about general priorities and specific strategies and use of funds, partners voice the overall importance of protecting habitat.

* **Education about salmon and salmon habitat is needed in the Mat-Su.** This includes education at all levels – schools, children, general public, land managers, and elected officials. Education actions are noted throughout the current plan and efforts exist among many partners on various topics related to salmon. The Partnership could play a role in educating the public about how potential development projects could impact salmon habitat.

IV. Recommendations on Updating the Strategic Action Plan

During this scoping process, several partners commented on the need to update or revise the plan without wholly revisiting it. Given the continued consensus that the greatest potential threat identified in the existing plan – Housing and Urban Development – remains the human activity that has the greatest impact to salmon habitat, an entire re-write is not warranted. The general agreement about new potential threats to address indicates that the Partnership can update the plan for new potential threats and focal issues and retain the priorities identified in the existing plan. A streamlined approach to updating the plan will require fewer resources, especially people. At a time when many public and private organizations are experiencing cutbacks and many partner organizations are deeply involved in large issues facing salmon habitat in the Mat-Su, limited resources are best focused on actions that will safeguard salmon and salmon habitat.

* **Update the Strategic Action Plan:** The current plan should be updated through amendments and section revisions instead of being wholly re-written. The current strategies can remain for further action according to the plan and be re-addressed in another 3 to 5 years.

* **Rely on the Steering Committee for setting initial priorities:** With the consensus on several areas in the scoping, the steering committee should take the lead in determining how to include new potential threats and their stresses on salmon habitat in the update. The Steering Committee should engage working groups and experts to develop strategies for particular focal issues and potential threats, similar to the Science and Implementation Working Groups that met for the original CAP process. Based on initial discussions and scoping comments, the Steering Committee can suggest strategies for the focal issues but leave the development of strategies and goals to the working groups. The partnership will review the Steering Committee's suggested modifications and a draft of the updated plan.

* **Stay grounded in the CAP methodology:** The CAP framework helps to focus on human activities that have the greatest potential impact to salmon habitat and to hone in on the most significant stresses from those activities. In the current plan, these stresses were termed focal issues and led to specific strategies for addressing potential threats to salmon habitat. Assessing potential impacts to salmon habitat with the CAP methodology will allow comparison between threats in the current plan and the updated plan.

* **Focus on addressing focal issues for salmon habitat:** The human activities identified as potential threats through the CAP process are not intended to demonize any industry or development but to focus on opportunities to mitigate, minimize, and avoid the harmful impacts of those activities that have

the greatest potential to negatively impact salmon habitat. In the existing plan, the focal issues help to identify the actual habitat stresses that the Partnership should address. Focal issues can include non-biological factors, such as loss of fishing opportunity or lack of understanding about a human activity. Revisions to the plan should identify focal issues that are specific enough to guide the Partnership in developing appropriate strategies. Focal issues from the current plan may be reframed to improve consistency with the update.

***Focus on the strengths and capabilities of partner organizations:** The Strategic Action Plan provides an overview of the issues and challenges, and its goal should be to outline what the Partnership and its members can realistically do to address those issues.

*** Develop an implementation plan for tracking partner progress with meaningful indicators:** The existing Strategic Action Plan includes indicators for tracking progress toward objectives. The process for calculating those indicators was not laid out, and some indicators are difficult to measure. With additional strategies, should come additional indicators. The Science Working Group could define a set of indicators and develop an implementation plan for regular measurement that integrates with existing projects and responsibilities.

V. Process and Timeline for Updating the Strategic Action Plan

The Plan Committee reviewed this scoping document in August, and the Steering Committee reviewed a revision at its September meeting. This scoping document has been revised to reflect the decisions that the Steering Committee made about how to include additional potential threats and the process for updating the plan.

The Steering Committee decided to update the plan to add threats while maintaining the goals and strategies for potential threats in the current plan. Focal issues may be reframed to improve consistency in the updated plan and to better identify stresses to salmon habitat. Based on likely Partnership strategies, the Steering Committee decided to combine invasive aquatic plants and northern pike into one threat of Invasive Aquatic Species and to lump hydropower and mining into a category of Large-scale Resource Development. For Invasive Aquatic Species, the committee anticipates that assessment and removal will be large components of partner action. For Large-scale Resource Development, the committee sees a needed role of public education about potential impacts to salmon and salmon habitat from various types of development. The focal issues and potential threats are suggested as shown in Table 2.

Table 2. Potential Threats and Focal Issues for Salmon and Salmon Habitat in the Mat-Su Basin														
		Potential Threats to Salmon Habitat												
		Science Strategies			Current Strategic Action Plan						New or Expanded			
		Salmon distribution and habitat use	Comprehensive Groundwater and surface water studies	Comprehensive baseline and monitoring of water quality	Residential & Commercial Development	Urban stormwater runoff from Impervious surfaces	Roads and Railroads	Household Septics and Urban Wastewater	Ground and surface water withdrawals	Development in Estuaries	Invasive Aquatic Species (including northern pike and plants)	Climate Change	Large-scale Resource Development (including hydropower and mining)	Motorized Off-road Recreation
Focal Issues for Salmon and Salmon Habitat	Alteration of riparian areas				■								■	■
	Filling of wetlands				■		■		■				■	
	Degradation of Water Quality					■		■				■	■	
	Impairments to fish passage						■							
	Loss or alteration of water quantity								■			■	■	
	Loss of estuaries and nearshore habitats						■		■					
	Alteration of native plant & animal communities										■			
	Insufficient Science & data for Policy and Decision Making	■	■	■										

The Steering Committee has laid out a process for engaging work groups and updating the plan by next summer. The partnership-wide discussion about focal issues, threats, and strategies will begin at the 5th Annual Mat-Su Salmon Science and Conservation Symposium in November 2012. In December the Steering Committee will form working groups based on interest at the symposium and through other solicitation. The Nature Conservancy (TNC) will provide a brief introduction to CAP methodology in January, and the working groups will revise or create sections of the plan through March. TNC will compile an updated plan draft for partnership review. The Steering Committee will approve a final plan. The timeline is laid out in Table 3.

Table 3. Timeline for Updating the Strategic Action Plan	
Timeframe	Action
October 2012	Steering committee identifies focal issues and potential threats
November	Partnership discusses issues and threats at symposium
December	Steering Committee forms working groups
January 2013	TNC provides CAP methodology training
Jan – March	Working groups revise or create sections of the plan
April	TNC compiles an updated plan draft
May	Partnership reviews updated plan draft
June	Steering Committee approves final updated plan

Appendix A Results from Survey of Partnership on Plan Update

Mat-Su Salmon Partnership Strategic Action Plan Update Scoping Survey

Design Survey Collect Responses **Analyze Results**

- [View Summary](#)
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Default Report + Add Report

Response Summary

Total Started Survey: 55
Total Completed Survey: 55 (100%)

PAGE: INTRODUCTION

1. The Strategic Action Plan includes three science strategies to increase our knowledge about the location and characteristics of salmon habitat in the Mat-Su: 1) surveying waterbodies for inclusion in the state's Anadromous Waters Catalog; 2) surface and groundwater studies on quantities, flows, and natural variability; and 3) water quality monitoring for baseline conditions and changes over time. Are there additional science studies that the Partnership should endorse, support, and/or highlight? [Download](#)

	Response Count
Show Responses	24
answered question	24
skipped question	31

2. The Strategic Action Plan focuses on the following potential threats to salmon habitat. Please rank their relative importance: [Create Chart](#) [Download](#)

	1 highest	2	3	4	5	6	7 lowest	Rating Average	Response Count
Housing and Urban Development (Alteration of shorelines, Filling of wetlands, Impervious surfaces)	57.1% (28)	18.4% (9)	10.2% (5)	10.2% (5)	4.1% (2)	0.0% (0)	0.0% (0)	1.86	49
Stormwater Runoff	2.1% (1)	19.1% (9)	21.3% (10)	14.9% (7)	23.4% (11)	10.6% (5)	8.5% (4)	4.04	47
Roads and Railroads (Culverts that block fish passage)	24.4% (11)	24.4% (11)	22.2% (10)	15.6% (7)	8.9% (4)	0.0% (0)	4.4% (2)	2.78	45
Household Septic Systems and Urban Wastewater	4.5% (2)	2.3% (1)	2.3% (1)	29.5% (13)	18.2% (8)	31.8% (14)	11.4% (5)	4.95	44
Development in estuaries for marine infrastructure	6.1% (3)	12.2% (6)	22.4% (11)	10.2% (5)	6.1% (3)	26.5% (13)	16.3% (8)	4.43	49
Ground and Surface water withdrawals	3.8% (2)	3.8% (2)	15.4% (8)	15.4% (8)	25.0% (13)	15.4% (8)	21.2% (11)	4.85	52
Invasive northern pike	8.0% (4)	24.0% (12)	12.0% (6)	8.0% (4)	12.0% (6)	8.0% (4)	28.0% (14)	4.28	50
									answered question 53
									skipped question 2

3. Are there any potential threats in the current Strategic Action Plan that the Partnership shouldn't be addressing? Create Chart Download

	Response Percent	Response Count
Housing and Urban Development (Alteration of shorelines, Filling of wetlands, Impervious surfaces)	11.1%	1
Stormwater Runoff	22.2%	2
Roads and Railroads (Culverts that block fish passage)	22.2%	2
Household Septic Systems and Urban Wastewater	0.0%	0
Development in estuaries for marine infrastructure	22.2%	2
Ground and Surface water withdrawals	11.1%	1
Invasive northern pike	55.6%	5
	answered question	9
	skipped question	46

4. What other potential threats or likely threats to salmon habitat in the next 10 - 20 years should the partnership consider including in the strategic action plan? Please select 5 or fewer. Create Chart Download

	Response Percent	Response Count
Invasive Aquatic Plants	54.5%	30
Climate Change	47.3%	26
Recreational Activities	58.2%	32
Oil, gas, and coalbed methane drilling	23.6%	13
Dams and Hydroelectric power	80.0%	44
Mineral and coal mining	54.5%	30
Gravel quarrying	20.0%	11
Logging and wood harvesting	12.7%	7
Tidal energy power generation	7.3%	4
Other (please specify) Show Responses	18.2%	10
	answered question	55
	skipped question	0

5. What should be the Partnership's priorities for salmon habitat conservation to ensure that wild salmon are returning in healthy runs to the waters of the Mat-Su 100 years from now? Download

	Response Count
Show Responses	36
answered question	36
skipped question	19

6. The Partnership currently receives about \$300,000 per year from the National Fish Habitat Plan to fund projects in the Mat-Su. We'd like your ideas about how those limited funds should be used. What types of activities should the Partnership fund? Please rank their relative importance Create Chart Download

	1 highest	2	3	4	5 lowest	Rating Average	Response Count
Protection (e.g. conservation easements, instream flow reservations)	63.5% (33)	21.2% (11)	7.7% (4)	7.7% (4)	0.0% (0)	1.60	52
Restoration	7.7% (4)	34.6% (18)	38.5% (20)	17.3% (9)	1.9% (1)	2.71	52
Education	17.6% (9)	37.3% (19)	19.6% (10)	23.5% (12)	2.0% (1)	2.55	51
Science studies	13.2% (7)	7.5% (4)	32.1% (17)	43.4% (23)	3.8% (2)	3.17	53
Other	14.3% (1)	0.0% (0)	14.3% (1)	0.0% (0)	71.4% (5)	4.14	7
If you chose Other, please specify Show Responses							7
answered question							55
skipped question							0

7. How should the Partnership distribute these funds from the National Fish Habitat Plan? Create Chart Download

	Response Percent	Response Count
Continue to fund 6 – 8 projects that partners propose on a yearly basis	33.3%	17
Multiple partners should work together on one large project that the Partnership selects	2.0%	1
Some combination of the above two suggestions	52.9%	27
Other (please specify) Show Responses	11.8%	6
answered question		51
skipped question		4

8. We might want to follow up with you to get additional information about any potential threats or other suggestions that you've given. If you are available for further discussion, please provide your name and email here. This is optional. Download

	Response Percent	Response Count
Name Show Responses	100.0%	37
Email Show Responses	100.0%	37
	answered question	37
	skipped question	18

Open Responses to Survey Questions

1. The Strategic Action Plan includes three science strategies to increase our knowledge about the location and characteristics of salmon habitat in the Mat-Su: 1) surveying waterbodies for inclusion in the state's Anadromous Waters Catalog; 2) surface and groundwater studies on quantities, flows, and natural variability; and 3) water quality monitoring for baseline conditions and changes over time. Are there additional science studies that the Partnership should endorse, support, and/or highlight? *Open fill-in-the-blank response*

- I think the studies listed above are good ones. Are they complete? The work on economic value of natural areas is another good project. The work to identify GI areas with community councils is also something that should continue.
- These three are sound and merit continuation. Some attention should also be devoted to mapping and modeling land and water development trends to provide information about salmon to help inform and guide local and regional land use and investment choices.
- Ecological studies; i.e., predator-prey relationships
- obtaining information regarding trends in development impacts and their current and projected locations
- If its salmon stocks that the partnership wants to preserve I'd think exploitation by the commercial salmon fleet would be useful data to gather.
- Mapping critical salmon habitat areas of key life stages (spawning, rearing overwintering) to define the most important areas for conservation actions
- Inclusion of salmon returns into the habit portion of your goal. Without enough salmon returning, reident spices and wildlife the system will die out
- Evaluate the impact of invasive species (i.e., Pike) on Mat-Su Salmon survival, maintain an inventory of adversely affected waterbodies, and, evaluate alternatives for mitigation
- Understanding of anadromous fish utilization of habitats in the Upper Cook Inlet at various life stages.
- Emerging Issues - have an ad hoc committee or method to receive input from partners on issues that come up during the year or planning cycle where the steering committee can decide if the issue should be added to the next year's RFP.
- A great deal of development -- from increased residential housing to coal mining -- has occurred over time throughout the MatSu. I would encourage the Partnership to endorse historical information gathering (from tribes, museums, descendents of settlers, etc) regarding locations of salmon habitat, and how habitat was used (spawning, rearing, migration). This would give further depth to results of recent and future studies.
- Groundwater studies should include temperature monitoring. Groundwater should hold constant temperature, while channeled flow will react to temperature changes in nearby surface waters. This important, as gwater table flows generally show less variation with changes in surface water flows. Confined flows are less reliable for maintaining salmon egg incubation, due to their higher variability.
- Yes, but many are too political for the Partnership.
- Distribution of juvenile salmon in Knik Arm and Northern Cook Inlet
- temperature studies?

- The importance of Estuaries and nearshore marine habitat.
- identifying and mapping rearing and spawning areas including wetlands
- Document and monitor changes in riparian habitat on anadromous systems due to development.
- A community assets identification project/model to build support around. Perhaps this is being covered by future GI efforts.
- Watershed boundaries and streamline generation from new lidar and getting a accuracy in line to utilize new model for fish habitat. Linking habitat types to biological information. Research how climate change could impact habitats/management strategies for what to do. Research on impacts of different development scenarios.
- There health of Salmon stocks in valley streams and rivers.
- Compiling and analyzing water quality data and fisheries science by watersheds (eg Cottonwood Creek)
- Monitoring of watershed health indicators. Improved mapping of waterbodies i.e., NHD+.
- Detailed stream habitat mapping to refine our understanding of "priority salmon habitats".

4. What other potential threats or likely threats to salmon habitat in the next 10 - 20 years should the partnership consider including in the strategic action plan? Responses if Other chosen:

- Invasive aquatic plants distribution correlating to increased pike habitat
- ATV stream and wetland crossings
- people disconnected from fish and their habitat needs
- commercial fisheries harvest
- The partnership (or DEC) should continue monitoring and possibly adjusting levels of hydrocarbons added to Mat-Su stream systems through boat motor use.
- Poor salmon returns
- presenting science / research to provide baseline data where other agency efforts have a gap
- 100-200 ft. non-development set backs for for riparian habitat adjacent to all anadromous lakes and streams
- High sea intercept of salmon stocks on the high seas.
- complicated and draconian laws that inspire backlash and apathy in the community

5. What should be the Partnership's priorities for salmon habitat conservation to ensure that wild salmon are returning in healthy runs to the waters of the Mat-Su 100 years from now? *Open fill-in-the-blank response*

- Maintaining connectivity and viable habitat using a landscape level view
- protection of habitat, MSB policies, education, outreach and restoration

- Attention to whole ecosystem health and recognition/action on recreational activity impacts and enforcement issues.
- Addressing pike and barriers to fish passage are most immediate concerns
- Acquiring private property that has spawning and rearing attributes and protecting them with conservation easements.
- influencing development and human activity so that it does not impair salmon habitat.
- The Partnership must develop specific recommendations to area businesses and governments and landowners for what is going to be necessary to ensure that wild salmon are returning in healthy runs to the waters of the Mat-Su 100 years from now. Developing and periodically revising these recommendations is a critical priority because scientific research and individual projects will not be enough if the agreements and rules guiding human behavior in the Mat-Su are inadequate to sustain salmon.
- Maintain refugia for juvenile salmon in the watershed.
- Continue to improve access to spawning/juvenile habitat, educate, stormwater treatment in more urban areas
- riparian protection, culvert replacement, education and outreach involving salmon habitat and riparian health
- suitable, diverse habitat connected from headwaters to sea and informed/interested public
- Keep commercial land and home development to a minimum in the Susitna drainage.
- Establishing conservation easements in areas most critical to salmon population viability
- Little Susitna River may need some attention and action. ADF&G has failed to achieve it's minimum coho salmon spawning escapement goal for each of the past 3 years and failed to achieve its king salmon escapement goal in each of the past 2 years. ADF&G has no goals spawning escapement goals for Little Susitana River chum, pink, and sockeye salmon, so there are no easy measurements with which to evaluate health of those salmon species.
- Water Quality - (public sewage in Cook Inlet & residential septic systems, runoff from lawns, parking lots & roads) 2) Pike predation 3) blockage / culverts (ARR, Roads, Driveways) 4) Mercury levels - ongoing monitoring 5)
- Ensure that we aren't loosing salmon habitat inch by inch, which in 100 years will equal miles.
- knowledge sharing to our youth and our policy makers regarding healthy watersheds - this could be extension of current educational projects or special informational briefings to legislators or assembly members on issues and success stories for fish habitat and projects
- habitat protection
- Provide Habitat protection of all waters used by salmon.
- Wise use of all resources and respect for our lands and waters.
- Maintain instream flows of excellent water quality. Ensure stream protection from impacts of resource extractive industries and human over use.
- Development - careful planning for irreversible habitat impacts. Prioritize healthy salmon populations, habitat quality, and connectivity.
- curenly, it must be the Susitna Dam's potential impacts
- Fish passage Invasive species
- Monitoring fishing activities and all habitat restruction activities.

- The big picture requires political action. Political leaders need to be convinced that salmon are a natural resource to be protected so that development "plans" place salmon as a high priority plans for urban development plans for energy development plans for invasive species
- besides the ones listed already, working with land management agencies, boroughs, municipalities state and federal agencies and the private sector to establish riparian setbacks on anadromous systems (Pristine habitat is the only way to ensure future survival of salmon).
- Ensuring healthy returns of salmon by working with the Alaska Board of Fisheries will be as important as preserving and restoring habitats.
- Work on finding ways that industry and conservation can co-exist.
- Protecting the best and restoring the rest. Proactive community based planning.
- Salmon habitat connectivity and quality, better knowledge of salmon and their habitat use, future development planning efforts and public/decision maker education.
- Genetically identify of salmon stocks in the Mat-Su valley. To determine where they are being harvested in saltwater.
- Protection of healthy salmon habitat
- Identifying and protecting the most important habitats, emphasizing those that are most resilient to human caused and natural changes. This should be incorporated into state and local planning. Also, informing and engaging the public in habitat. conservation.
- We need to get a better handle on long-term development trends, spatial patterns and better tools to evaluate impacts to fish. What do we mean by "protect priority salmon habitat"? Have these places been identified? Does "protect" mean easements and acquisition, or is it broader? This topic should be described in more detail in terms of specific locations (e.g., systematic mapping of priorities) and prescriptions (e.g., what specific management guidelines do we want to see in place?).
- Protect rights of common man (over that of the \$10,000 fly in trip tourist) to hunt and fish for food and sport to ensure the public continues to care about the future of salmon.

6. The Partnership currently receives about \$300,000 per year from the National Fish Habitat Plan to fund projects in the Mat-Su. We'd like your ideas about how those limited funds should be used. What types of activities should the Partnership fund? Responses if Other chosen:

- Recreational activity damage assessments
- Analysis of effects of development on river habitat.
- policy improvement such as an update to the agreement between DOT and ADFG
- I assume the first one listed includes riparian habitat protection (under conservation easement) if not, I believe that riparian habitat protection (nondevelopment zones), documentation of existing riparian losses due to development and monitoring new development projects in riparian areas/zones should be considered the number one priority.
- Working with, the state to determine needs in valley streams and rivers
- Advocacy to policy makers

- Simplifying sport fishing regulations to protect salmon numbers without bewildering public.

7. How should the Partnership distribute these funds from the National Fish Habitat Plan?

- Partnering agencies and npo's to prioritize systems needing pike eradication/control to save existing salmon populations. Rated "extreme", i.e. systems which have declining salmon stocks due to pike, to "low" i.e. systems in which salmon have been extirpated by pike and need rehabilitation.
- Projects need to be decided on that will result in direct tangible and measurable outcomes, regardless of who or how. The partnership may want to come up with a more specific 'needs' list.
- How about a master plan as opposed to small grants for local small projects
- Develop effective education for schools and communities (include parents)
- Continue to work with the borough to develop goals
- Concentrate on projects with proven positive effect on salmon numbers-i.e. fish passage culverts

Appendix B Notes from the 2011 Mat-Su Salmon Science and Conservation Symposium

At the 2011 symposium one session was devoted to getting partner feedback on Partnership priorities, changes in threats to salmon habitat, and allocation of funds from the National Fish Habitat Partnership. Frankie Barker, the facilitator for the session, encouraged thinking about how the Partnership can have success at the 700 year timeframe, as suggested by the keynote speaker David Montgomery. The discussion was framed broadly so responses were not limited and partners offered suggestions on overall priorities, threats to salmon, and strategies. Partner interest in threats was also indicated by participation in the open space discussion groups.

Flipchart Notes:

* Partnership Priorities:

- Protection of salmon habitat
- Overall health of salmon and status of stocks
- Education of school children, user groups, and policy makers
- Use information that partners are learning about salmon and habitat to engage local policy makers
- Studies of estuarine and nearshore habitat
- Socio-economic information on the value of healthy habitat and salmon
- Science -- “the heart of the Partnership”
- Collaboration on joint goals and efforts and sharing information

* Threats to Salmon Habitat not included in current plan:

- Invasive aquatic plants (i.e. *elodea*)
- Education on threats that are difficult to act on, like climate change
- Climate change and changes in stream temperature
- Juvenile salmon passage
- Susitna-Watana Hydropower
- Recreational use of all-terrain vehicles
- Cumulative impacts of development

* Suggestions for updating the Strategic Action Plan:

- Reassess priorities based on science
- Update protection priorities
- Update the plan for Science and Data needs
- Update the plan for Outreach and Education

An interactive session at the symposium with David Montgomery solicited many challenges and issues for conservation of salmon in the Mat-Su. Montgomery emphasized that we should try to make decisions on a generational, if not geological, timeframe. Partners identified areas where better science is needed and noted challenges that current management presents.

Flipchart Notes:

*** Science Needs:**

- Historical and current population data
- Characterization of geomorphological and hydrological processes that form various riverine habitats and information about how developments can affect those processes and habitats
- Indices to measure rates of change
- Identification of areas with high salmon productivity – “natural fish farms”
- Understanding climate change impacts

*** Management Challenges**

- Short term thinking
- Lack of education about salmon habitat
- State policy on use of hatcheries for sustaining fisheries
- Method to evaluate benefits of development projects with the costs to salmon and their habitat over a long timeframe