



MONTANA CREEK WATERSHED STEWARDSHIP PLAN

Our mission is to promote watershed integrity in the City and Borough of Juneau through education, research and communication while encouraging sustainable use and development.

MONTANA CREEK WATERSHED STEWARDSHIP PLAN

Drafted by:

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Cover photo:

View of Montana Creek from footbridge. Photo by Mark Kaelke, Juneau Chapter of Trout Unlimited.

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Introduction

The Juneau Watershed Partnership (JWP) with support from the U.S. Forest Service facilitated the creation of this collaborative and stakeholder-based stewardship plan for the Montana Creek watershed. The overall goal of this Stewardship Plan is to conserve, protect, and enhance the water quality, fisheries and wildlife habitat, and recreational values found in the Montana Creek watershed.

The Montana Creek watershed is located in the Mendenhall Valley area of Juneau, Alaska. The Montana Creek watershed is notable for being a mostly pristine watershed, in spite of its proximity to an urban center. This is the defining characteristic that makes the Montana Creek watershed an important recreational area, as well as important fish and wildlife habitat.

Stewardship, or careful and responsible management, is necessary to protect these qualities. As part of this Stewardship Plan, the JWP convened Montana Creek Task Force meetings to identify potential threats to the Montana Creek watershed and potential management solutions to address those threats. The JWP also conducted a public survey to gain insight to the public's perspective on the Montana Creek watershed including its health, values and threats.

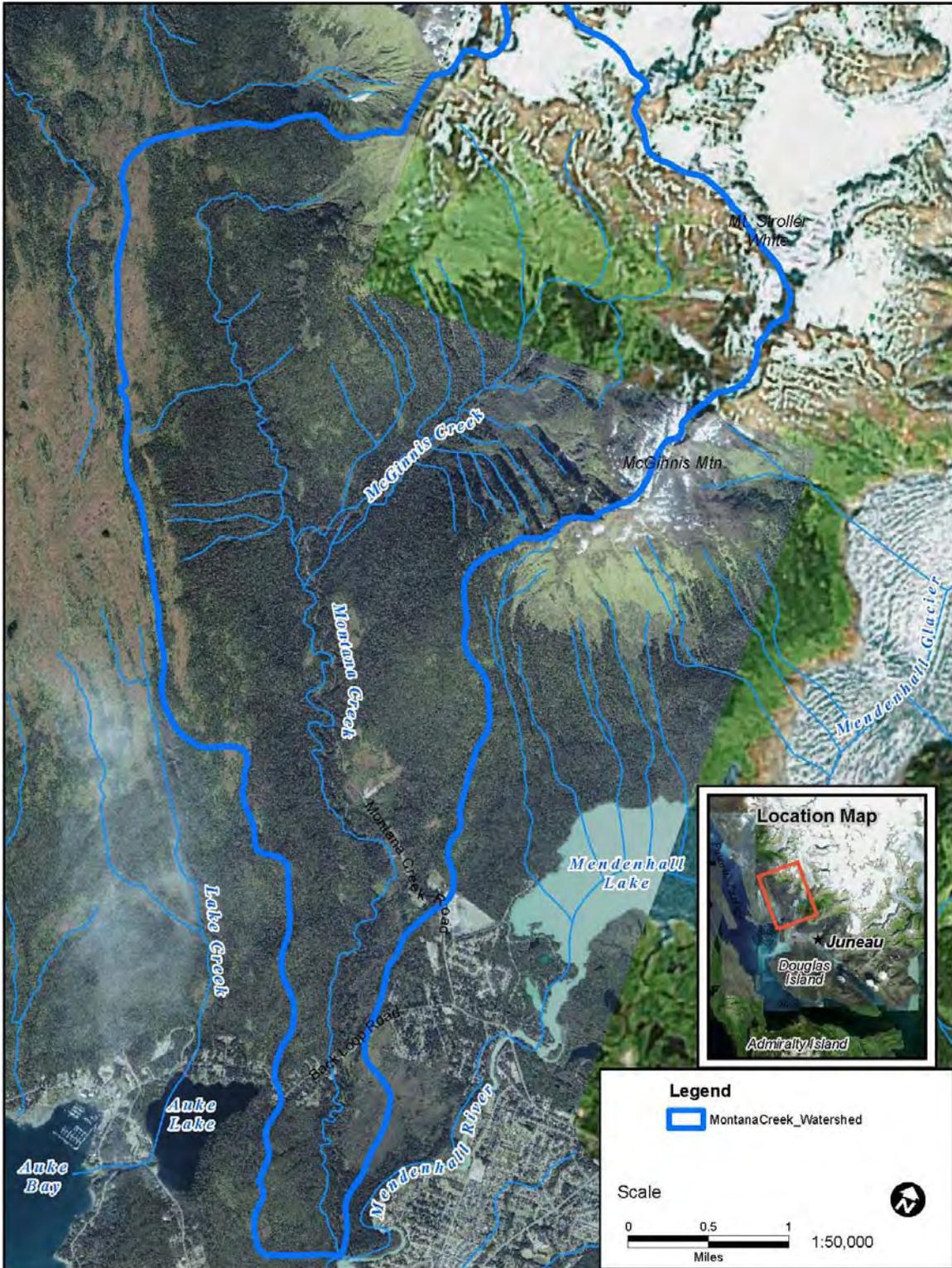


Figure 1. Montana Creek just below the confluence with McGinnis Creek. Photo courtesy of Erik Norberg, JWP Board Member

Setting

Juneau is located on the Southeast panhandle of Alaska, approximately 900 air miles northwest of Seattle, Washington and 577 air miles southeast of Anchorage, Alaska. Juneau is the state capital, but is only the third largest city in the state with a population of approximately 33,000. The Montana Creek watershed is located in geographic area of Juneau known as the Mendenhall Valley. The Montana Creek watershed is approximately 9,722.2 acres that primarily consists of undeveloped alpine, forest, and wetland habitats as well as pockets of urban areas (Figure 2). The main tributary to Montana Creek, McGinnis Creek, originates from the meltwater of McGinnis and Stroller White Mountains, which border the Juneau Ice field. Montana Creek's headwaters come from a smaller, unnamed mountain to the west. The Montana Creek system discharges into the Mendenhall River, approximately one mile upstream from where Glacier Highway crosses the river.

As both Montana and McGinnis Creeks flow out of the mountains, much of the watershed is undeveloped Sitka spruce-Western hemlock forest characteristic of Southeast Alaska temperate



Service Layer Credits: Alaska Mapped Program; UAF-GINA; USFS Tongass National Forest; ADF&G Sport Fish Division; USGS National Hydrography Dataset; Southeast Alaska GIS Library; University of Alaska Southeast

Figure 2. Montana Creek watershed boundaries. The boundary shown is based on the 12-digit HUC boundary developed by the U.S. Geological Survey.

rainforest. Wetlands such as sedge meadows and muskeg also occur throughout the mid and lower sections of the watershed (Figures 3 and 6). The intact forest and wetland habitats in the Montana Creek watershed provide habitat for a variety of wildlife such as black and brown bear, Sitka black-tailed deer, wolves, porcupine, beaver, weasels, mink, otter, and a variety of raptors, waterfowl and song birds. The extent of suitable bear summer habitat and deer winter habitat in the Montana Creek Watershed are shown in Figures 7 and 8, respectively.

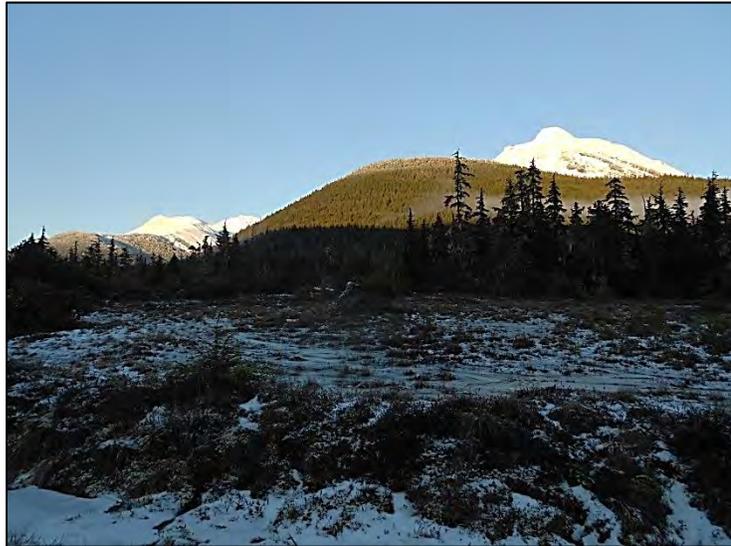


Figure 3. View of wetlands and Mt. McGinnis from Montana Creek Road. Photo courtesy of Amy Sumner, JWP.

The Montana Creek watershed supports both anadromous and resident fish including chum salmon, coho salmon, chinook salmon, pink salmon, cutthroat trout, steelhead trout, and Dolly Varden. The extent of anadromous habitat, as mapped in the Anadromous Waters Catalog, is shown in Figure 9. Excellent spawning and rearing habitat for both anadromous and resident fish is present throughout the watershed (Bethers et al, 2012). Spawning and rearing habitat is shown in Figure 10.

The urban pockets occur along Back Loop (Mendenhall Loop) Road and Montana Creek Road in the mid to lower portion of the watershed. Urban development largely consists of residential areas, though light commercial development and recreation facilities also exist. Notable infrastructure and developments include the Montana Creek Trail, the Community Garden, the Hank Harmon Rifle Range, an archery range, an RV park, gravel mining, and construction equipment and material storage areas.



Figure 4. Hank Harmon Rifle Range. Photo courtesy of Amy Sumner, JWP.

The Montana Creek watershed is known for its numerous recreational opportunities such as fishing, hunting, hiking, skiing, snowshoeing, horseback riding, recreational gold panning and mining. Due to its proximity to the population center of Mendenhall Valley and its plentiful wild stock of salmon and trout, Montana Creek is especially popular for freshwater sport fishing. The Alaska Department of Fish and Game Area Sport Fishing Reports for Juneau identify Montana Creek as a good fishing spot for coho salmon, Dolly Varden and cutthroat trout, and the best time for freshwater sport fishing is July through September.



Figure 5. Cross-country skiing in the upper Montana Creek watershed. Photo courtesy of Nina Horne, former JWP Executive Director.

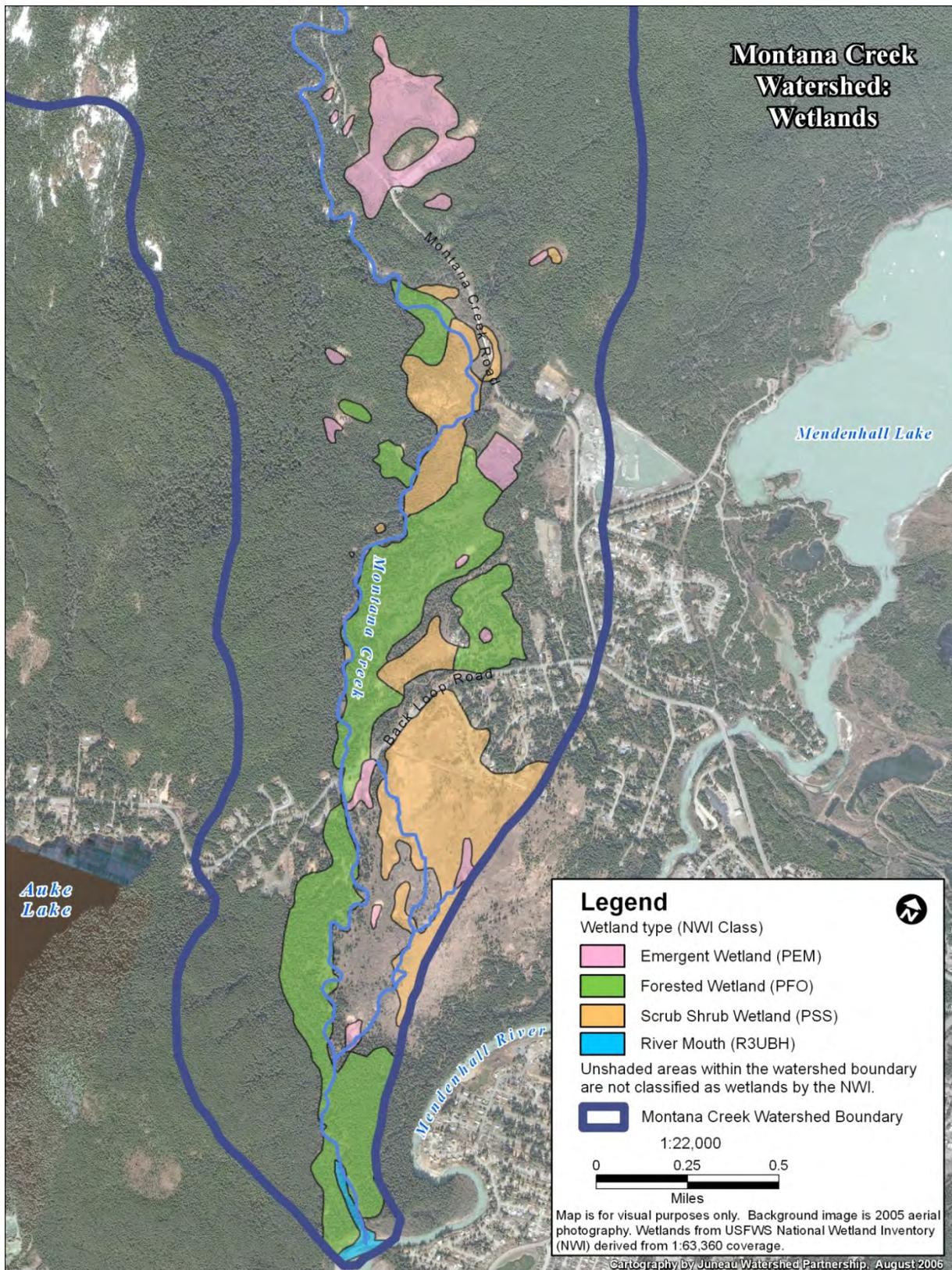
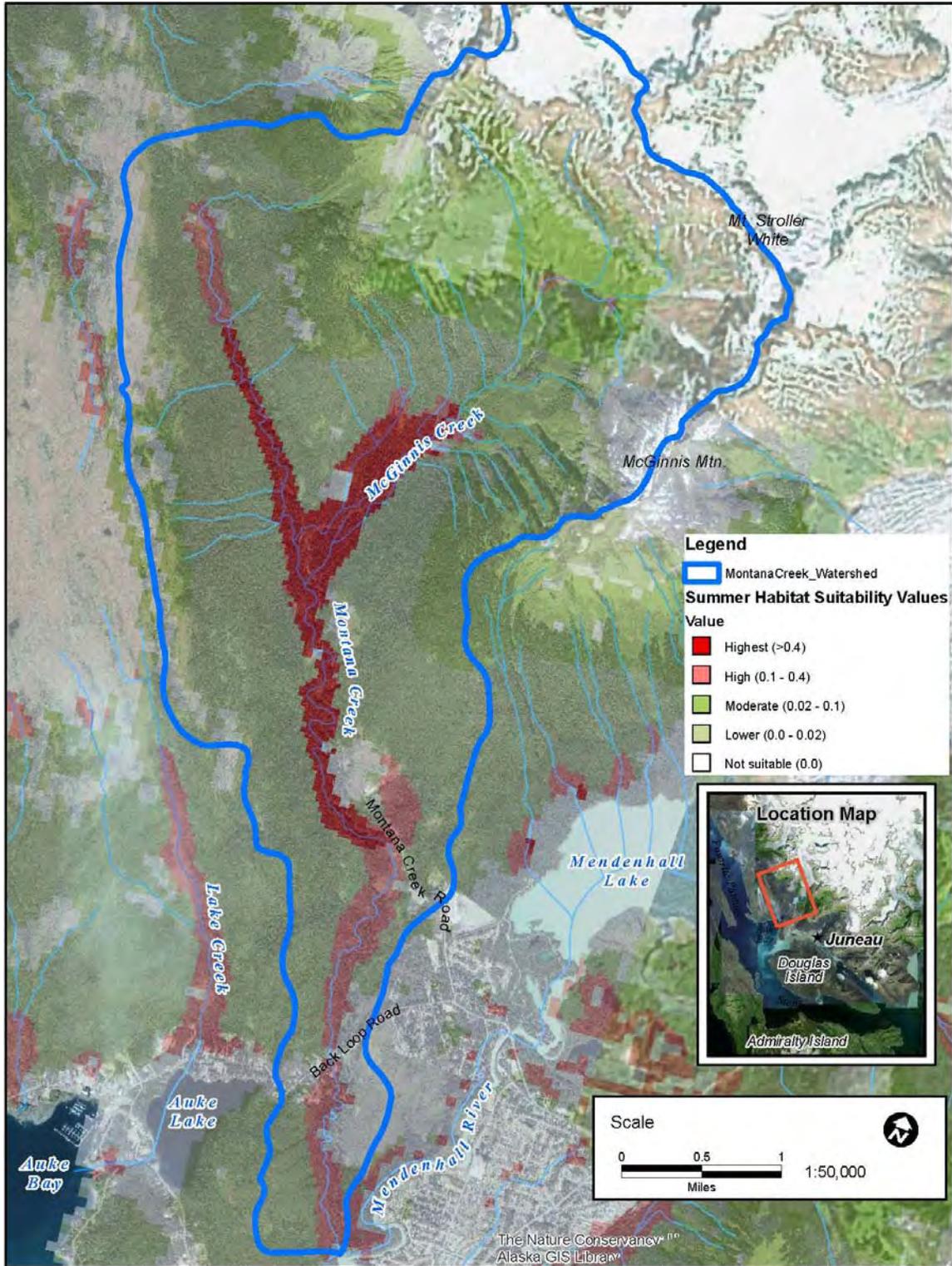


Figure 6. Wetlands in the lower Montana Creek watershed. Figure originally appeared in the *Lands Assessment and Recreation Corridor Conservation Proposal* (Trout Unlimited, 2006).



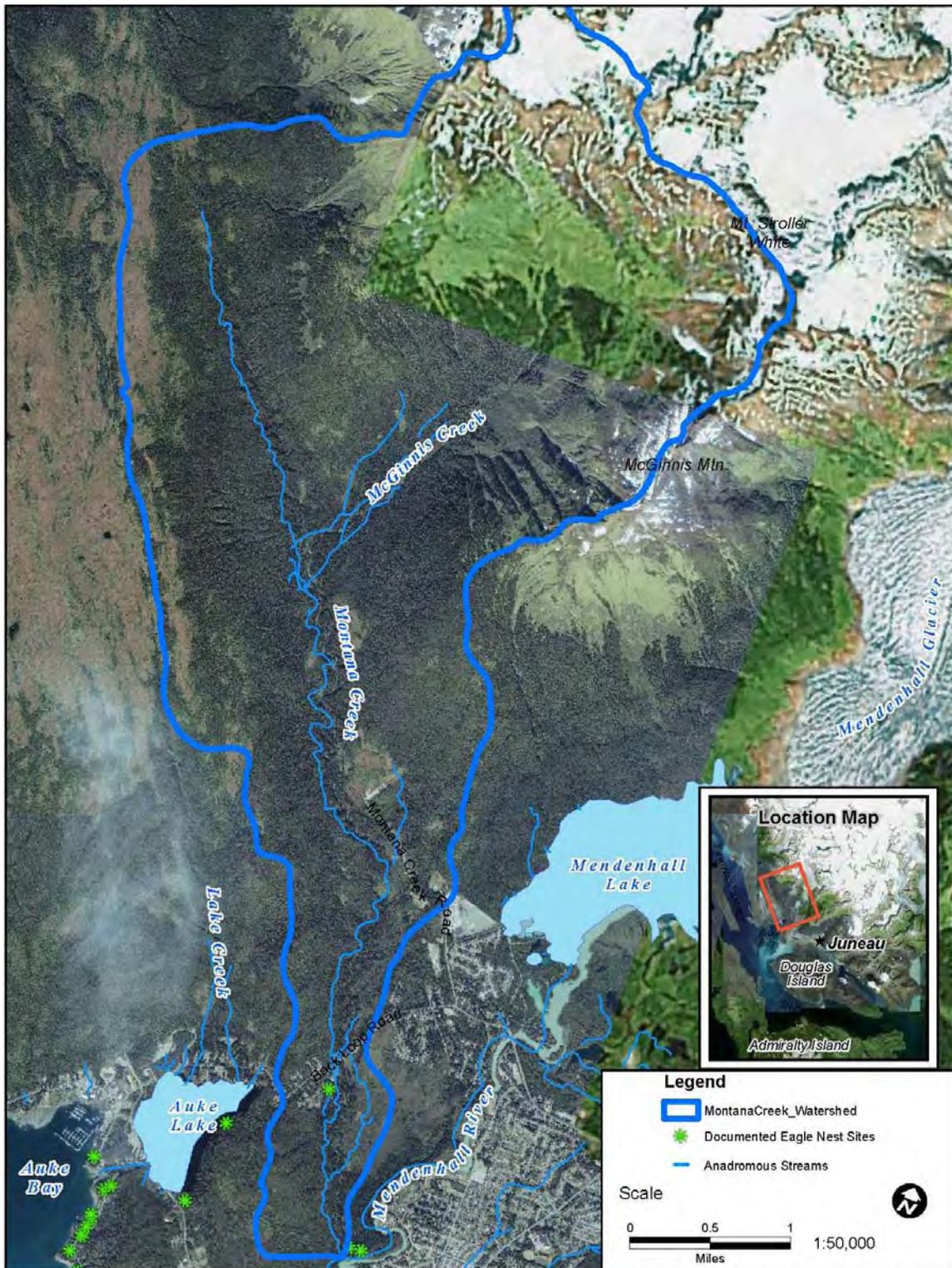
Service Layer Credits: Alaska Mapped Program; UAF-GINA; The Nature Conservancy; USFS Tongass National Forest; ADF&G Sport Fish Division; USGS National Hydrography Dataset; Southeast Alaska GIS Library; University of Alaska

Figure 7. Suitable bear summer habitat in the Montana Creek watershed. The best suited bear habitat is in the mid-section of the watershed along the stream corridor.



Service Layer Credits: Alaska Mapped Program; UAF-GINA; The Nature Conservancy; USFS Tongass National Forest; ADF&G Sport Fish Division; USGS National Hydrography Dataset; Southeast Alaska GIS Library; University of Alaska

Figure 8. Suitable winter habitat for deer in the Montana Creek watershed. The best suited deer winter habitat is located primarily below the confluence with McGinnis Creek.



Service Layer Credits: U. S. Geological Survey; U.S. Fish and Wildlife Service; Alaska Dept. of Fish and Game; Southeast Alaska GIS Library; University of Alaska Southeast

Figure 9. The extent of anadromous fish habitat in Montana and McGinnis Creeks, as mapped by the Alaska Dept. of Fish and Game in the Anadromous Waters Catalog. Known bald eagles nests are also shown.

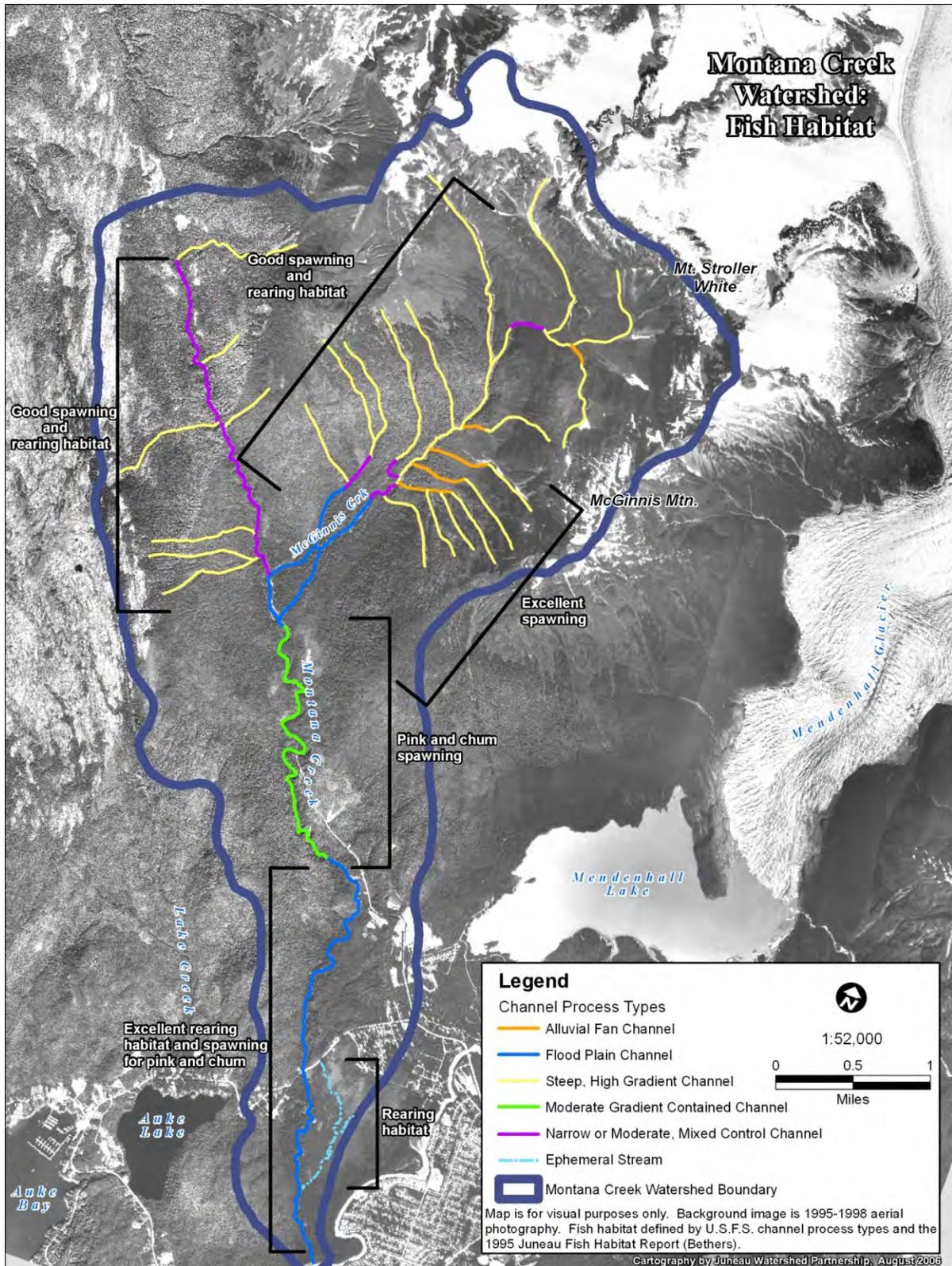


Figure 10. Spawning and rearing habitat on Montana and McGinnis Creeks, as identified in the 1995 Juneau Fish Habitat Report. Figure originally appeared in the *Lands Assessment and Recreation Corridor Conservation Proposal* (Trout Unlimited, 2006).

Land Ownership and Management

Land managers in the Montana Creek watershed include U.S. Forest Service, the State of Alaska, the City and Borough of Juneau, and a number of private landowners (Figure 12). Much of the upper Montana Creek watershed is within the Tongass National Forest and is managed by the U.S. Forest Service. National forest lands, including the Tongass National Forest, are managed for multiple uses as set forth in the Forest Plan. Generally, national forests are managed for resource development (e.g. timber harvest) and recreation, though areas may be designated for protection (e.g. wilderness areas) or for research purposes (e.g. experimental forests). According to the Tongass Forest Plan (2008), the Montana Creek watershed within the national forest boundaries is managed for semi-remote recreation and mineral exploration.

The State of Alaska owns land on the lower part of McGinnis Creek and in the middle section of Montana Creek. State lands are managed by the Department of Natural Resources and management is guided by the policies set forth in the applicable Area Plan. State land on Montana and McGinnis Creeks are within Land Unit 3f in the Juneau State Land Plan, and are to be managed for their high recreation, habitat and harvest values, as well as a potential water source. The state selected these lands from the U.S. Forest Service primarily for its recreational values, and because the City and Borough of Juneau was unable to select these lands as originally intended (DNR, 1993). The lower watershed is largely owned by the City and Borough of Juneau and private land owners. Within the CBJ boundaries, regardless of ownership, land use and development is guided by the policies set forth in the CBJ Comprehensive Plan and regulated by the CBJ's Land Use Code. The Alaska Department of Transportation and Public Facilities (DOT&PF) maintains Back Loop Road and the CBJ maintains the residential roads.



Figure 11. The Montana Creek Bridge located on Back Loop Road. Photo courtesy of Amy Sumner, JWP.

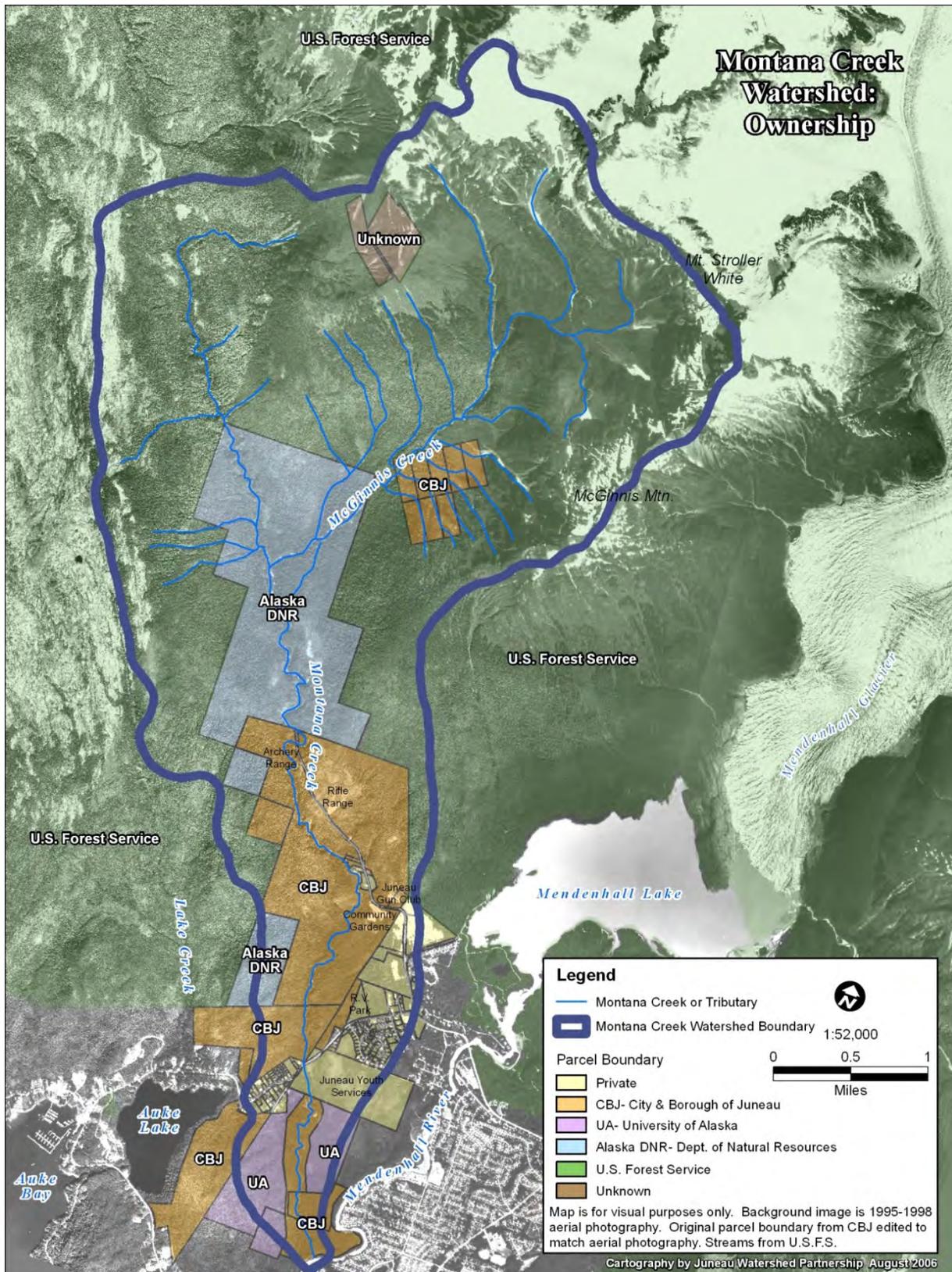


Figure 12. Land ownership in the Montana Creek watershed. Figure originally appeared in the *Lands Assessment and Recreation Corridor Conservation Proposal* (Trout Unlimited, 2006).

Montana Creek Task Force

The purpose of establishing the Montana Creek Task Force was to provide a platform for agencies and stakeholder groups to express their concerns regarding the management of the Montana Creek Watershed.

Participants in the Task Force meetings included representatives from the following agencies and stakeholder groups:

U.S. Forest Service	City and Borough of Juneau
U.S. Fish and Wildlife Service	Trout Unlimited
Alaska Dept. of Fish and Game	Alaska Fly Fishing
Alaska Dept. of Natural Resources	Raincountry Fly Fishers
Alaska Dept. of Environmental Conservation	Trail Mix
Southeast Alaska Soil and Water Conservation District	Juneau Gun Club

Unfortunately, the Montana Creek Task Force did not include representatives from several stakeholder groups such as ATV enthusiasts and recreational suction dredge miners. However, some perspectives of individuals within these stakeholder groups were captured in the public survey.

Task Force meetings were held on March 21, 2013 and May 27, 2014. Participant sign-in sheets and meeting agendas and notes are included in Appendix A. The concerns and recommendations of the Montana Creek Task Force will be discussed throughout this plan.

Public Survey

A public survey was conducted as part of this planning process. The purpose of the survey was to establish the public's perception of the Montana Creek watershed's health, values, and threats to the watershed. A blank copy of the survey is provided in Appendix B. The survey was created using the free survey development tool on SurveyMonkey, an online survey development and analysis resource. The Juneau Watershed Partnership solicited participants using FaceBook, a social networking site. The survey was released on September 23, 2014 and remained open until October 15, 2014. Responses to the survey were anonymous. Data collected from the survey is provided in Appendix C, and will be discussed throughout this plan.

After survey responses were received, it was noticed that the public survey had several limitations. First, free surveys created on SurveyMonkey will only provide the first 100 participants' responses. Therefore, this limits the responses shown in the data (the Montana Creek Stewardship Plan Survey had 102 participants). However, given the data, it is unlikely the elimination of the last two responses greatly

altered the results. While JWP would have liked to obtain a greater number of participants, timing and funding limited options for conducting a public survey.

Secondly, the selections for the Question 4, “I use the Montana Creek Watershed for,” were limiting. For example, a participant noted in their comments, “that fishing and hunting should not have been grouped together.” On consideration, the two should have been separated, since it is most likely that the many of the participants selecting this option use the creek for fishing only. In addition, it did not allow any suction dredge miners to identify themselves. One participant, in their comments to another question, did identify themselves as a suction dredge miner, but it is unknown whether there were others that participated in the survey.

Another limitation is that each participant did not respond to all questions in the survey. Since all questions were optional, participants could skip any of the questions. In retrospect, all of the questions should have been made mandatory, with maybe the exception of Question 3 regarding gender (which could be a sensitive/personal question). Participants were less likely to skip the questions with multiple choice answers (Questions 5, 6, and 8) than those requiring a typed response (Questions 7 and 9) (Table 1). This inconsistency in participant responses makes it difficult to draw comparisons between the data resulting from the two types of questions. For this reason, when discussing the survey data, the relevant question being referenced will be identified to provide context.

Question	# participants responded	# participants that skipped question
1 – Where in Juneau do you live?	99	1
2 – What is your age?	100	0
3 – What is your gender?	97	3
4 – I use the Montana Creek Watershed for (check all that apply):	100	0
5 – Evaluate the following statements:	95	5
6 – Evaluate whether the following are benefits/values of the Montana Creek Watershed:	93	7
7 – What do you perceive to be the greatest benefit/value to the Montana Creek Watershed?	71	29
8 – Evaluate whether the following are threats to Montana Creek’s health:	92	8
9 – What do you perceive to be the biggest threat to Montana Creek?	62	38
10 – Anything you’d like to share about Montana Creek?	41	59

Table 1. Number of participants that answered and skipped each question in the public survey. The survey had a total of 102 participants, but the free SurveyMonkey application will only provide the responses of the first 100 participants.

Even with these limitations, the survey seemed to reach a good mix of people, relatively representative of the demographics of the community with some exceptions (Table 2). The survey did not reach the portion of the population that is under 18 years of age, but reached a larger proportion of those between 25 and 44 years old. This is to be expected given how the survey was distributed and the nature of the survey itself.

Demographic characteristic	% Montana Creek Survey Participants	% Juneau Residents
<i>Gender</i>		
Male	58	51
Female	42	49
<i>Age</i>		
Under 18	0	26
18 – 24	3	6
25 – 34	28	14
35 – 44	32	14
45 – 54	20	17
55 – 64	14	14
65 – 74	3	6
75 +	0	3
<i>Geographic Location</i>		
Mendenhall Valley	30	
Downtown Juneau	27	
Out-the-Road	12	
Thane	0	
Douglas	26	
Lemon Creek/Switzer	4	

Table 2. Comparison of demographic characteristics between the Montana Creek public survey and Juneau residents.

Watershed Values

For the purpose of this Stewardship Plan, watershed values are defined as the characteristics or qualities of the watershed perceived as good or beneficial to the community. Government agencies with land holdings in the Montana Creek area manage their land for a variety of uses such as recreation, fish and wildlife habitat, resource extraction, and development of community facilities and infrastructure, which are all generally considered as beneficial to the public. However, it is important to understand the community's perspective of the watershed's values and how the community uses the watershed. The public survey conducted as part of this planning process was used to establish public opinion regarding the Montana Creek watershed's health and values.

According to responses received for Question 6 of the public survey, participants ranked fish and wildlife habitat, recreational opportunities, and fishing/hunting/gathering as the top three benefits of the Montana Creek watershed. Undeveloped land and ecotourism were also perceived, although less so, as benefits. Participants seemed to disagree with land to be used for development and resources development (timber/minerals) as benefits of the watershed. When asked to identify the greatest benefit/value of the Montana Creek watershed (Question 7), the majority of participant responses were split between the watershed's healthy, pristine character and the abundance of recreational opportunities.



Figure 13. Mark Kaelke releases a Dolly Varden downstream of the confluence with McGinnis Creek. Photo taken by Darren Dorris, and provided courtesy of Mark Kaelke, Juneau Chapter of Trout Unlimited.

Most survey participants (68.4 percent of those that responded to Question 5) either agreed or strongly agreed with the assertion that the Montana Creek watershed is healthy. Responses to Question 7 identifying characteristics such as “green space,” “fresh water,” “nature,” “beauty,” and “habitat” as being the greatest value of the Montana Creek watershed is reflective of valuing the watershed's healthy, pristine character. This is obviously a defining characteristic of the Montana Creek watershed greatly valued by the public.

Responses to Question 7 focusing on recreation as being the greatest value varied in specificity: some responses listed specific recreational activities such as fishing, skiing, hiking, biking; some responses specified non-motorized recreation, others motorized recreation; and some participants simply stated “recreation” in general. It was also indicated in a few responses that the area provides “non-tourism impacted recreation” (term taken from participant response), which may provide some indication as to why eco-tourism was valued less as a benefit.

The majority of survey responses to Question 5 indicate the Montana Creek watershed is important to participants personally, as well as important to the community of as a whole (96.8 and 95.7 percent, respectively). This shows that, whatever their differences on other issues regarding the watershed, the majority of participants at least agree that the Montana Creek Watershed is an important community asset.

In this sense, the Montana Creek survey is highly consistent with some of the findings from the Community Values survey conducted for the City and Borough of Juneau (2007). Responses to the CBJ Community Values survey indicated that Juneau residents value the following:

- Protecting natural beauty and scenery
- Maintaining public access to nature and outdoor recreation
- Preserving and protecting streams and wildlife habitat



Figure 14. View of Montana Creek approximately one-half mile from the upper Montana Creek trailhead on Montana Creek Road. Photo courtesy of Dave Hanna, former JWP Board member.

Threat Analysis

Threats to a watershed are those activities or actions that are perceived as negatively impacting the watershed's values, uses, and health. The goal of a threat analysis is to identify potential threats and develop recommendations to improve the management of, and/or otherwise reduce impacts from, these activities or actions.

The primary threats identified during the planning process were:

- urban development;
- motorized use;
- suction dredge mining; and
- invasive species;

Each of these is discussed separately, in more detail.

However, it is worth mentioning that the responses to the public survey Question 9 identified some concerns that, though not discussed in more detail, are worth noting, as they correspond with several recurring themes throughout this plan.

Irresponsible use – approximately 6 percent of responses to Question 9 identified irresponsible use, over use, and cumulative impacts as being the greatest threat to Montana Creek. Overuse is grouped with irresponsible use, as overusing a resource is generally seen as irresponsible. Irresponsible use and overuse are overarching ideas that can get unwieldy if not discussed in relation to specific resources or activities. Irresponsible use in this plan is discussed in relation to motorized use and suction dredge mining. Overuse is not explicitly discussed in this plan, since the Montana Creek Task Force and public survey participants did not overwhelmingly identify a specific problem with overuse. Two survey comments did specify concerns with over-fishing. One comment identified over-fishing as a concern due to proximity to the residential population; the other noted that serious harvesting impacts occur in the first three weeks of September. While not discussed or analyzed in this plan, over-fishing in the Montana Creek watershed may be worth investigating in the future, given the popularity of the area for fishing.

Over protection/catering to one group's needs over another's – approximately 5 percent of responses to Question 9 stated that over protection and catering to one group's needs over another are the greatest threat to Montana Creek. When watersheds are managed for multiple uses, there is a potential for user conflicts. User conflicts can result when one user group perceives that the activities of another user group are detrimental to their own activities. As one survey participant stated, the greatest threat to Montana Creek "depends on the user group." Because of their nature, user conflicts will often become apparent during a watershed threat analysis, and Montana Creek was no exception. These ideas are grouped into one theme because, as a use becomes restricted or prohibited due to its perceived threat to one or more other user groups, this can be seen as overprotection by the affected user groups.

Urban Development

Juneau is wedged between ocean and mountains, with limited developable land. The Montana Creek watershed is located adjacent to the highly urbanized, populated center of the Mendenhall Valley. Urbanization of the Mendenhall Valley has already led to the impairment of other local watersheds: Duck Creek, Jordan Creek, and Pederson Hill Creek. Though most of the Montana Creek watershed is currently undeveloped, its proximity to the Mendenhall Valley and the increasing need for housing puts Montana Creek at risk for urban development due to the availability of land. Land use planning and zoning changes over the years have reflected the increasing development pressure, as the portions of the watershed designated for residential use have been trending toward higher density residential development. This has spurred concern that urbanization could negatively affect Montana Creek, possibly to the extent that the creek may become impaired.

Current Conditions and Management

Land managers in the Montana Creek watershed include U.S. Forest Service, the State of Alaska, the City and Borough of Juneau, and a number of private landowners (Figure 12). Most urban development occurs within the boundaries of the City and Borough of Juneau, and is not likely to occur on federal or state land due to how this land is managed.

Land use within the CBJ boundaries is governed by the policies outlined in the Comprehensive Plan, which is then implemented by the CBJ Land Use Code and zoning ordinances. The purpose of the Comprehensive Plan is to describe the long-term planning intent for the community through Land Use Designations (LUDs). The CBJ Land Use Code, through zoning and other land use ordinances, provide the regulatory means for the City to ensure the community is developed as intended in the Comprehensive Plan. Therefore, the Land Use Code should reflect the policies in the Comprehensive Plan and zoning districts should be complementary to the LUDs outlined in the Comprehensive Plan.

Land use designations (LUDs) outlined in the 2013 Comprehensive Plan for the Montana Creek watershed include Natural Area Park (NP), Recreational Service Park (RS), Resource Development (RD), Urban Low Density Residential (ULDR), and Mid-Density Residential (MDR) development. There is also a Stream Corridor (SC) LUD (Figure 15).

The Resource Development LUD is used to identify and conserve natural resources until specific land uses are identified for the unit. Land under the Resource Development LUD is meant to be re-designated and re-zoned appropriately, once the specific land use for the area is identified. The RD land unit currently correlates with Rural Reserve (RR) zoning district. This zoning district holds public lands in reserve for the conservation and development of natural resources and for future community growth.

The Urban Low Density Residential (ULDR) LUD allows for densities of one to six units per acre. The ULDR land units in Montana Creek Watershed currently correlate with D-1, D-3, and D-5 residential zoning districts. The use of the D-3 residential zoning district is limited within the urban service boundary, and typically is only used where either lower density is deemed appropriate or where the zoning will be changed to a higher density when sewer/water utility is provided (as in the case of a transition zone).

The Medium Density Residential (MDR) LUD allows for densities ranging from 5 to 20 units per acre. The MDR land unit currently corresponds with a D1(T)D5 residential zoning district. The “T” indicates that this is a transition zone, where the density is currently one unit per acre but will be allowed to increase to 5 units per acre once services (water, sewer) are provided.

The Stream Corridor LUD provides a protective buffer from the impacts of urban development. Development within the Corridor is carefully controlled or, if necessary, prohibited to protect stream functions and values. The baseline corridor is established at 200 feet on each side of the Ordinary High Water (OHW) line, but the Montana Creek corridor has been increased to 500 feet on each side of the OHW line due to information presented in the *Montana Creek Lands Assessment and Recreation Corridor Conservation Proposal* published by the Juneau Chapter of Trout Unlimited (November 2006). Currently, this 500-foot corridor is only applicable on CBJ property adjacent to Montana Creek.

It should be noted that current zoning maps do not have a corresponding zoning district for the Stream Corridor designated in the 2013 Comprehensive Plan. The D-1, D-3, and D1(T)D5 residential zoning districts currently go right up to the creek (Figure 17). However, Implementing Action 9.1-IA2 in the 2013 Comprehensive Plan recognizes the need to “establish one or more discrete zoning districts in the CBJ Title 49 Land Use Code for CBJ-owned lands dedicated to parks and recreation and natural area uses...[to] correspond to the CA (Conservation Area), SC (Stream Corridor), and NP (Natural Park) land use designations.”



Figure 16. SEALTrust conservation properties in the Montana Creek watershed. Montana Creek Wetlands is a 128-acre property containing high value wetlands purchased from Juneau Youth Services. Copied from SEALTrust, 2014.

Current habitat protection ordinances in the CBJ Land Use Code include a 50-foot setback for development on private property adjacent to anadromous streams (CBJ Land Use Code 49.70.950) and a 25-foot no disturbance zone on private property for anadromous streams (CBJ Land Use Code 49.70.310). However, there is a procedure to request a variance from these setbacks.

One positive development towards protection of Montana Creek within the urbanized area of the watershed is that a 128-acre conservation area was established in February 2014 (Figures 16 and 17). The Southeast Alaska Land Trust

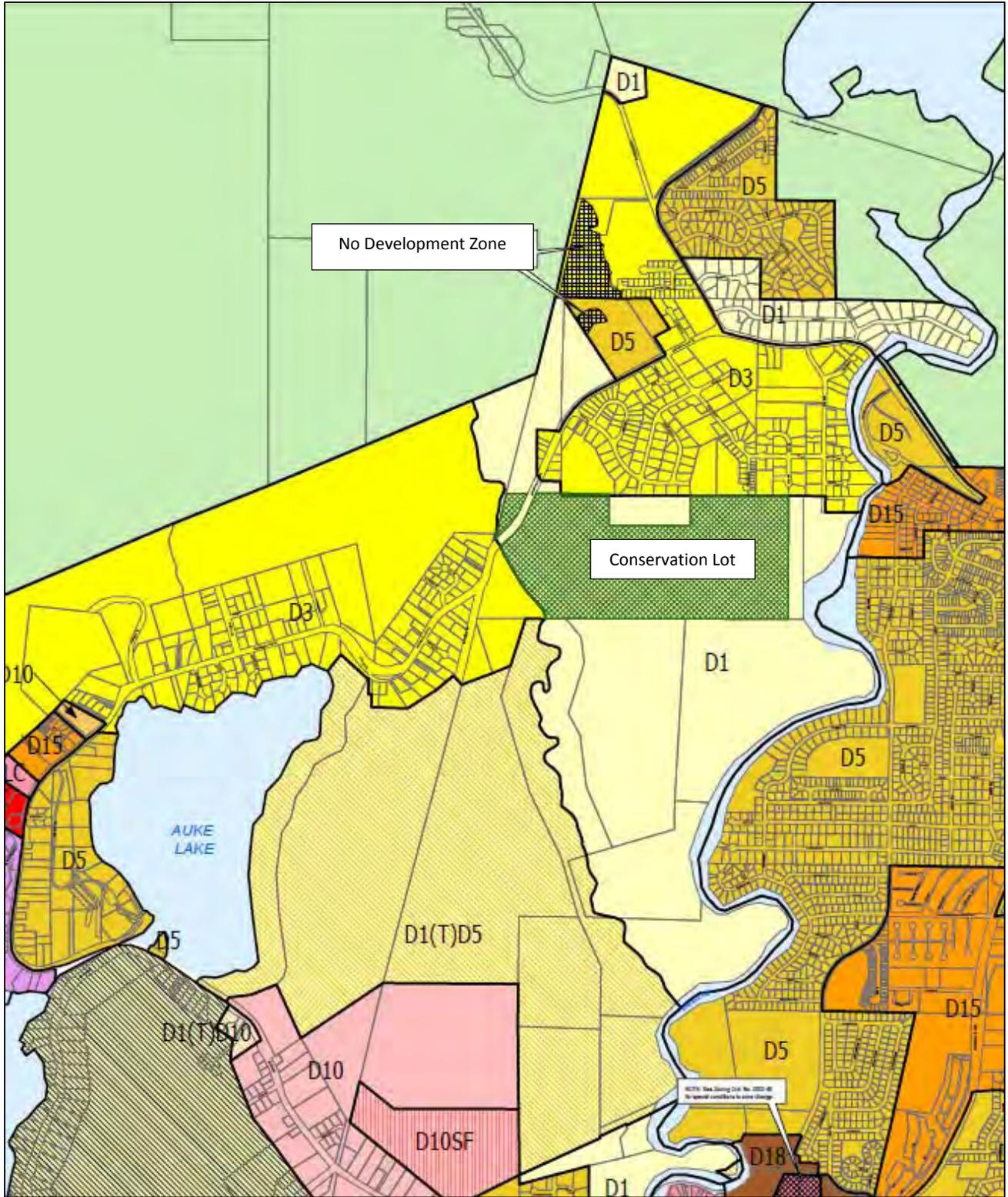


Figure 17. CBJ zoning map current as of October 2014. Image copied from CBJ, 2014 (http://www.juneau.org/cddftp/maps/documents/mend_valley_lemon_10_29_14.pdf)

(SEAL Trust) purchased this property from Juneau Youth Services (JYS), and the property contains approximately 111 acres of high functioning wetlands and a quarter mile of Montana Creek. This is a large portion of the JYS property shown on Figure 6. SEAL Trust hopes to donate this property to CBJ while maintaining a conservation easement to ensure its protection. SEAL Trust holds a smaller conservation easement (Moraine Edge) on CBJ property adjacent to the 128-acre property; this smaller easement was acquired in 2005 (SEALTrust, 2014; Figure 16).

Other properties in the watershed have been protected as well. Over the years, the CBJ has acquired several private properties adjacent to CBJ land that have been incorporated into Natural Area Park lands. The first was in 1990, when Lots 2 and 3 of the McGinnis View subdivision were retained and Ordinance 90-01 was adopted. In 2006, CBJ obtained a vacant parcel Tract B, USS 2337 and then acquired the adjacent parcel Tract A, USS 2337 in Partnership with Trout Unlimited in 2011. Resolution 2573 designated the property as Natural Area Park (Marlow, 2011). In addition to these properties, in December 2005, “No Development Zones” were established via ordinance to protect high quality wetlands in the Montana Creek watershed (CBJ Ord. 2005-31). These No Development Zones were established in association with a zoning change in the West Mendenhall Valley from D-1 to a D-3 (Figures 17 and 18).

Concerns with Urban Development

Approximately 77 percent of participants either agreed, or strongly agreed, urban development is a threat to the Montana Creek watershed (see results for Question 8). However, only about 29 percent of the individuals indicated that urban development or development in general was the greatest threat (see responses to Question 9). The primary concerns regarding urban development identified by the Task Force are:

- Trends toward increased residential housing density
- Development within the stream-side setbacks and within the stream corridor
- Development of high quality wetlands
- Stormwater management, especially for subdivisions and roadways
- Development of Montana Creek as a community drinking water source

Some of these concerns were also reflected in the public survey responses.

Increased Residential Housing Density: The Juneau Chapter of Trout Unlimited (TU) published the *Lands Assessment and Recreation Corridor Conservation Proposal* in November 2006, primarily to address concerns regarding urban development in the Montana Creek watershed. This document presented evidence that development in the lower Montana Creek watershed has trended towards increased residential housing density between 1965 and 2006 (Figure 18). This trend could potentially continue in the lower southwest section of the watershed. Though the zoning district in this area has not changed since the publication of the TU document [it is still D1(T)D5] as shown in Figure 17 and 18], the land use designation (LUD) changed from Rural Dispersed Residential transitioning to Urban Low Density Residential [RDR(T)ULDR] in 2000 to Medium Density Residential (MDR) in 2013 (Figure 15); therefore, this area can theoretically be re-zoned and developed to support up to 20 units per acre.

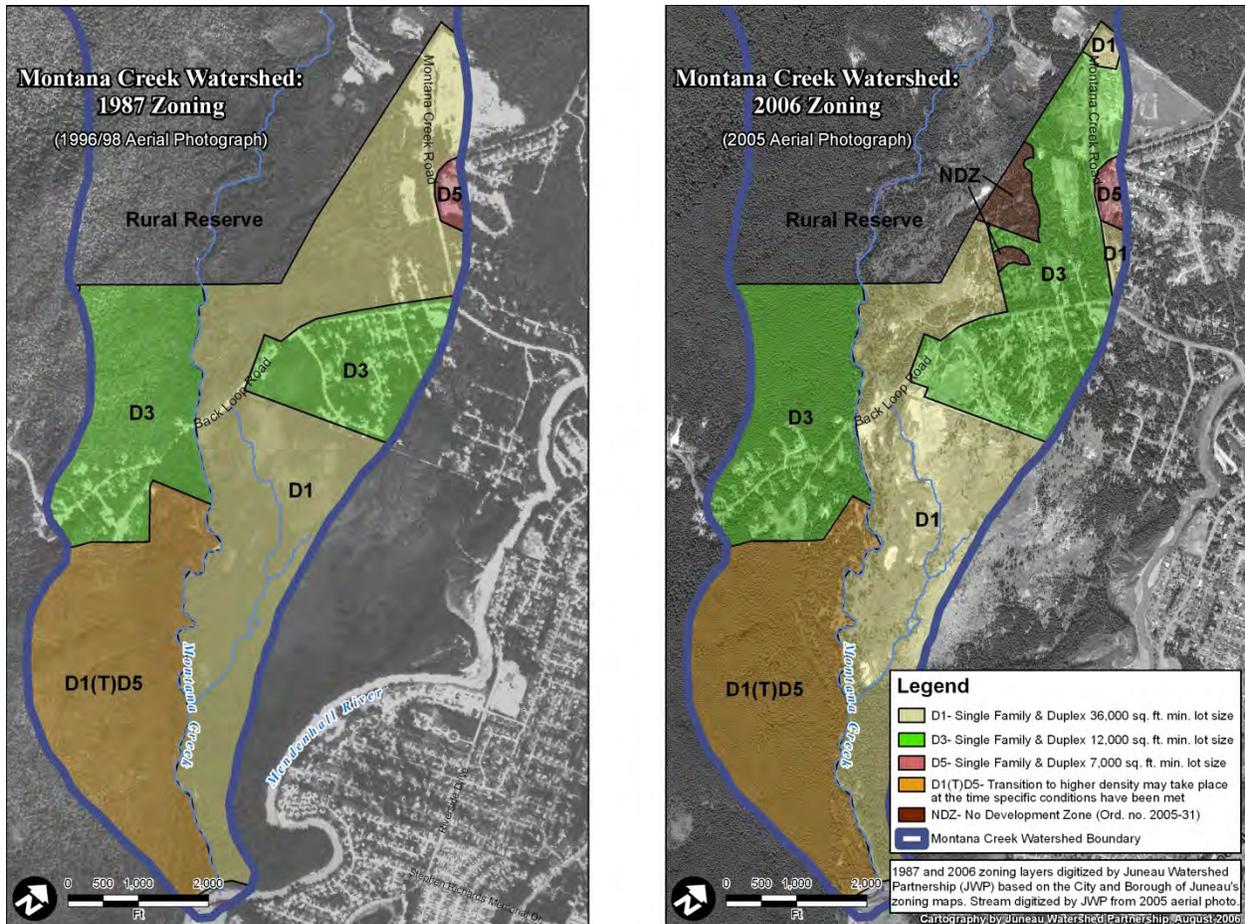


Figure 18. A comparison of zoning districts from 1987 and 2006 showing a trend in increasing residential density in lower Montana Creek. Figure originally appeared in the *Lands Assessment and Recreation Corridor Conservation Proposal* (Trout Unlimited, 2006).

Development within the Streamside Setbacks and within the Stream Corridor: There are several structures and facilities within the streamside setback including an unpaved road, retaining walls, and houses that straddle the stream (Trout Unlimited, 2006). One such house was removed in 2011 through a cooperative effort by the Juneau Chapter of Trout Unlimited, the CBJ, and U.S. Fish and Wildlife Service Habitat Restoration Program. The 500-foot stream corridor buffer proposed by Trout Unlimited was implemented in the 2013 Comprehensive Plan, but only applies to CBJ property. Though the CBJ’s property covers much of this corridor (Figure 19), other properties [Juneau Youth Services (JYS) and University of Alaska (UA)] were identified by the Task Force as potentially having high effects on the watershed, and recommended that they should have comparable buffers. As shown in Figure 19, portions of the JYS and UA properties are within the 500-foot corridor. As previously mentioned JYS deeded 128-acres of their property to SEAL Trust, allowing establishment of a conservation easement protecting Montana Creek and associated wetlands, including much of those within the 500-foot corridor. One of the public survey participants identified “insufficient protective setbacks” as the biggest threat to the Montana Creek Watershed.

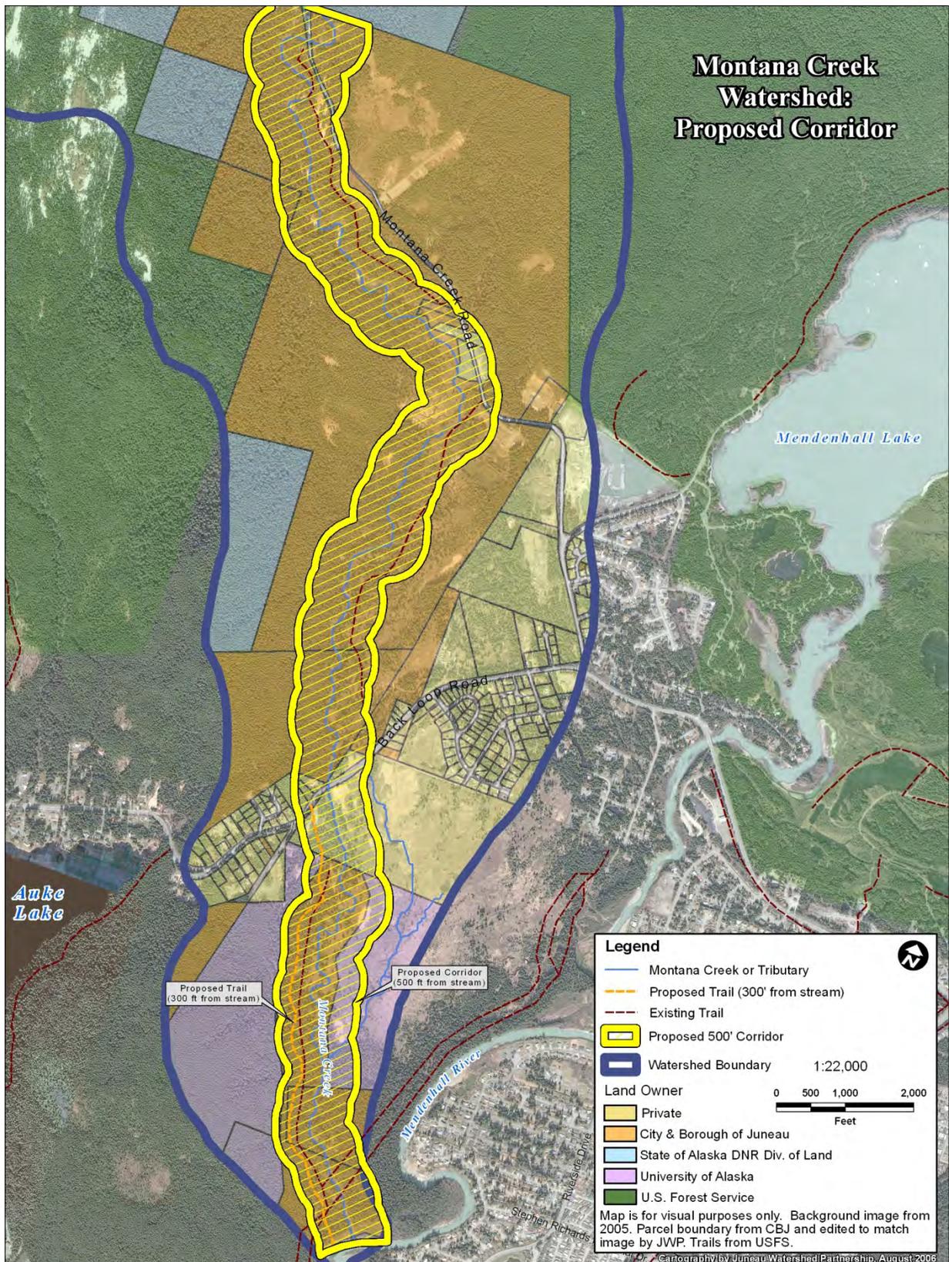


Figure 19. The 500-foot corridor proposed in the *Lands Assessment and Recreation Corridor Conservation Proposal* (Trout Unlimited, 2006). Figure as originally appeared in the *Lands Assessment*.

Stormwater: Stormwater discharges from urban areas and roadways are a major source of impairment of four Juneau watersheds: Duck, Jordan, Lemon and Vanderbilt Creeks. Special consideration of stormwater management should be given to developments that discharge stormwater into Montana Creek.

Properties and areas of concern with regards to stormwater discharges include:

- Stormwater run-off from new and expanded subdivisions
- Quarry on Coogan Property - concerns regarding stormwater run-off and potential discharges into Montana Creek
- Stormwater run-off from Back Loop Road ditches
- DOT&PF roadside ditch maintenance (timing and techniques)

Montana Creek as a Community Drinking Water Source: The Task Force recalled that a well-field connected to Montana Creek, located near the community garden, was identified for a community drinking water supply 30 or so years ago. The Task Force did not know whether the CBJ still considered this a viable drinking water source and, if so, what protections were in place to protect this potential drinking water source.

The upper Montana Creek watershed is included in a Watershed (WS) overlay land use designation in the 2013 Comprehensive Plan, which is used to designate and protect watershed lands that provide, or could provide in the future, water supply for domestic consumption. The Montana Creek (WS) designated area encompasses nearly 11 square miles and the southern boundary is just below the confluence with McGinnis Creek (CBJ, 2013). Most of the land in the WS-designated area is managed by the U.S. Forest Service and the State of Alaska. State land in the Montana Creek watershed includes a similar land use designation for Montana Creek as a potential drinking water source.

Though the upper Montana Creek watershed has a WS land use designation, the suitability of the upper Montana Creek watershed above the community garden as a groundwater source is only speculative, as no work has been done to confirm whether the groundwater supply is of adequate quality and quantity. Areas that have been studied as groundwater sources in the Mendenhall Valley were found to have water quality problems such as high in iron, manganese, and salinity. Studies have also found that Montana Creek, along with several other watersheds, would be inadequate as a surface water supply due to low flows during the winter when much of their drainage basins are frozen. Since 1960, no other surface water or groundwater sources have been identified as a better source for drinking water than Last Chance Basin and Salmon Creek (Dorn, 2012).

However, due to the WS overlay designation, under CBJ Code 49.70.320, development within the upper Montana Creek watershed is to be designed and/or use Best Management Practices (BMPs) to avoid negative impacts to water quality or ground water recharge capabilities of the site. Developers can be requested to provide evidence of compliance from a certified professional engineer. This is the only protection the watershed has a potential drinking water source.

Opportunities for Improvement

The recently updated Comprehensive Plan includes policies that could afford better protection for Montana Creek and other Juneau watersheds, but some of these policies have not yet been reflected in the Land Use Code or zoning maps, which have the force of law. This process could take several years. Development of new or modifying current ordinances, and rezoning could be held up by lack of funding and staffing. Adopting these changes requires lengthy administrative proceedings that could be further delayed by political debates. Until the Land Use Code and zoning maps are updated, the CBJ has limited means to implement and enforce the policies in the 2013 Comprehensive Plan.

Several of the recommendations made by the Task Force could be addressed if the Land Use Code and zoning maps were updated to reflect the policies, procedures and actions set forth in the 2013 Comprehensive Plan. These include:

Place conditions on variances to streamside setbacks: The Task Force recommends that applications for variances to the streamside setback on Montana Creek should meet standard conditions designed to protect Montana Creek and that variances granted by the Planning Commission should require mitigation. This recommendation is supported by the following Implementing Actions set forth in the 2013 Comprehensive Plan:

7.3 – IA1 Fund an effort to develop for adoption into the Land Use Code a riparian habitat protection ordinance that tailors riparian standards to the particular stream-type, functional value and location and which would be consistent with, and complementary to, related Title 49 regulations protecting wetlands, flood zones and coastal areas.

7.3 - IA8 Amend the Land Use Code to include additional criteria in the grounds for variance standards that require an evaluation of impacts to habitat and water quality for variance requests from streamside and lakeshore setbacks, and to provide for mitigation when variances to stream or lakeshore setbacks are granted.

Improve stormwater management: Improve stormwater management by requiring BMPs and improving DOT&PF's ditch cleaning practices. This recommendation is supported by the following Development Guideline set forth in the 2013 Comprehensive Plan:

7.7 – DG1 Ensure that stream corridors, surface waters, and associated riparian buffer areas receive greater attention in the local permitting process through adherence to the most recent version of the CBJ *Manual of Stormwater Best management Practices* and adoption of additional requirements or criteria that protect these areas and waters if needed.

Acquire and protect properties in the Montana Creek stream corridor, particularly those with high value wetlands and those in the floodplain: Only a few private land holdings exist in the 500-foot corridor proposed by the Juneau Chapter of Trout Unlimited. Where possible, such lands should be acquired by CBJ or other entities, such as SEAL Trust, willing to conserve and protect these areas. This recommendation is supported by the following Guidelines/Considerations for Subarea 3 Auke Bay, Mendenhall Peninsula and West Mendenhall Valley set forth in the 2013 Comprehensive Plan:

- Continue to acquire Greenbelt properties along the Montana Creek

One such property, Tract B, USS 2271 was considered for acquisition in late 2011. This is one of two private land holdings remaining within CBJ's Natural Area Park lands (Marlow, 2011).

Participate in the Juneau Wetland Management Plan update: The CBJ is in the process of updating the Juneau Wetland Management Plan. As part of this process, the CBJ is working with property owners to assess functions/values of wetlands on their property in an effort to provide them with free, reliable information about wetlands on their property so that they can make informed development decisions. The CBJ had hoped that West Glacier Development and Coogan, which have property in Montana Creek, would participate, but later determined that there are no wetlands on these properties. In any case, the update of the Juneau Wetland Management Plan would provide some opportunity to protect high value/high functioning wetlands in the Montana Creek Watershed. The updated plan would have to undergo a public review and comment period in accordance with CBJ procedures, and this would provide regulatory agencies and stakeholder groups a chance to have input on how wetlands are being managed in Juneau.

Motorized Use

Juneau has a number of all-terrain vehicle (ATV), or off-highway vehicle (OHV), enthusiasts, and there are two local ATV/OHV user groups, Rough Riders and the Juneau Douglas Motocross Association. However, there are a limited number of places for ATV/OHV users to legally enjoy recreational riding. Several attempts to develop city-managed ATV/OHV riding areas have been made over the last decade, but these have not been successful. This has been, in part, due to controversy surrounding the proposed locations as well as lack of funding.

The 1.25 mile section of the Montana Creek Trail that is a former gravel road is one of the few legal riding trails in Juneau. However, there has been a proliferation of user-created trails that spread out from this segment of the trail, generating concern over destruction of vegetation, erosion, and illegal stream crossings that could affect fish and wildlife habitat. Unfortunately, the destruction from motorized use is likely being caused by a few irresponsible riders repeatedly using the area, but could have consequences for the ATV community as a whole. The reality is the Montana Creek Trail could be closed to motorized use, as other areas have been in the past.

Current Conditions and Management

The segment of the Montana Creek Trail open to motorized use is accessed at the end of Montana Creek Road, and extends only approximately 1.25 miles to just below the confluence of Montana and McGinnis Creeks. Where the former road transitions to a foot-path, the trail is no longer open to motorized use (U.S. Forest Service, n.d.). The motorized-use section of the Montana Creek is located on state land. There has been a proliferation of user-created trails that spread out from this segment of the trail, traversing state, national forest, and CBJ lands. User-created trails also spread out from the nearby archery and rifle ranges (Figure 20). Tongass National Forest Lands in the Montana Creek area are closed to motorized use, except for a small section of the Montana Creek Trail near Windfall Lake, which is open seasonally from December 15th to April 15th provided that there is 12 inches of snow or the ground is frozen (U.S. Forest Service 2015). There are no City lands where ATVs/OHVs are allowed.

On state lands, ATV/OHVs are considered a generally allowed use, and are allowed to go off established road easements on state land provided that riders adhere to conditions set out in State regulations (11 AAC 96.025). These conditions state that the off-road use of ATV/OHVs cannot contribute to water quality degradation, alteration of drainage systems, or significant rutting or ground disturbance. If activities are not conducted in a responsible manner to minimize or prevent disturbance to land and water resources, then they can no longer be considered a generally allowed use under state regulations, and the activity is no longer allowed without being permitted by the DNR (DNR Division of Mining Land and Water, 2011).

In areas where ATVs are allowed, individuals planning to drive their ATV across anadromous streams are required to obtain a Habitat Permit from the Alaska Department of Fish and Game (ADF&G). A Habitat Permit will include stipulations meant to prevent or reduce impacts resulting from the stream crossing. ADF&G can issue a General Permits for commonly used stream crossings. Crossing anadromous streams without a permit is illegal. In 2010, approximately 20 stream crossings were identified on Montana and McGinnis Creeks (Figure 20).

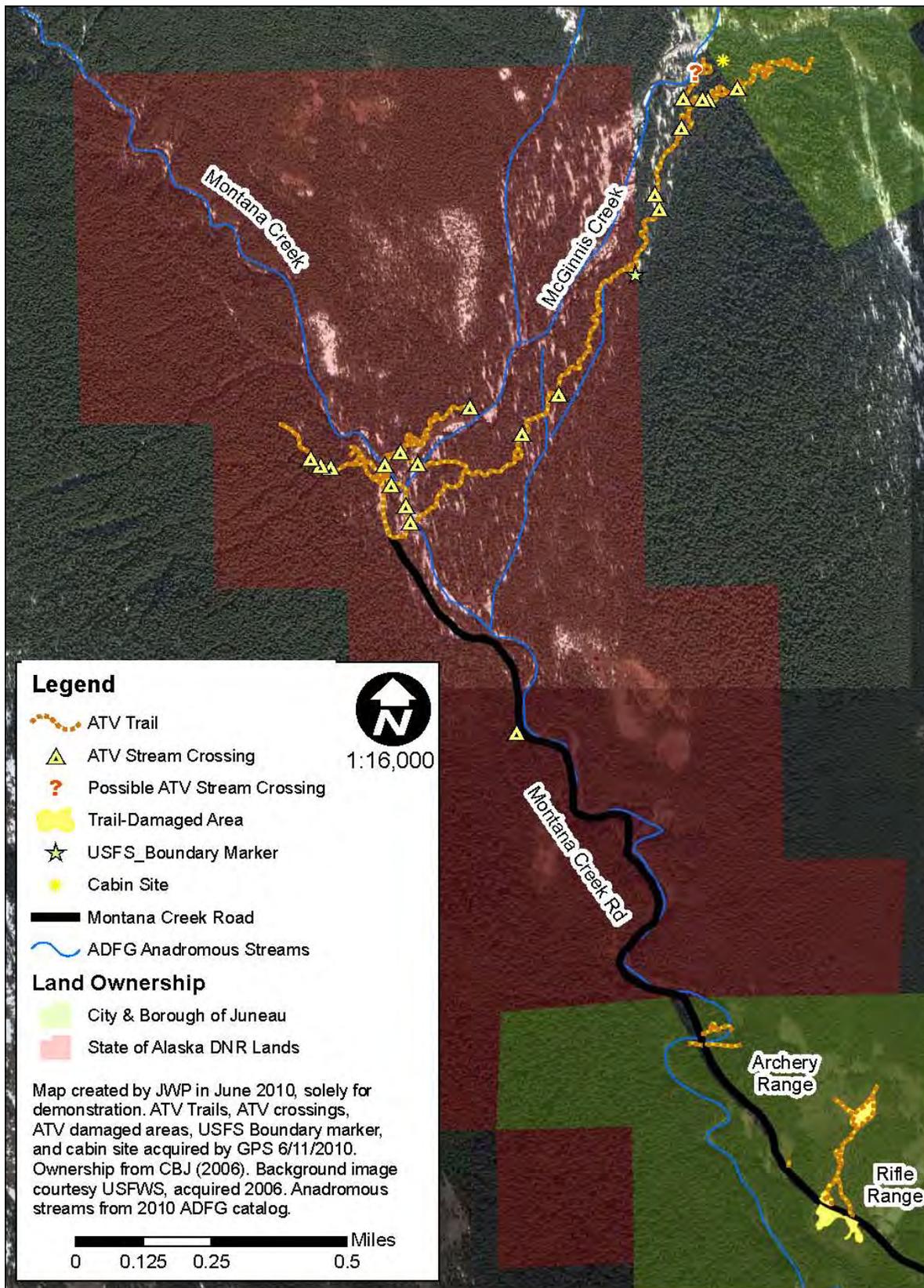


Figure 20. ATV trails, damaged areas and stream crossings in the Montana Creek watershed, as mapped in 2010.

In 2010, the DNR conducted site visits in the Montana Creek watershed in response to a permit application submitted to the ADF&G Habitat Division from the Rough Riders for an ATV stream crossing on Montana Creek to access existing secondary trails on state land. At that time, DNR felt that the heavily used secondary trails were causing too much damage to the land to be considered a general use and informed the Rough Riders that this type of activity is not allowed. Since the riders did not have permission of the land owner, the ADF&G denied their permit (Marquis, 2010a). Since then, ATV use off the established trail has not been allowed. However, illegal use of user-created secondary trails by ATV riders continues throughout the watershed. This may reflect the limited legal riding options for ATV riders in town. Riders may be drawn to the Montana Creek watershed since the area provided a legal riding option, and then increased use of the secondary trails leads to the visible damage over time. Without many other legal riding options, riding activities and their impacts cannot be dispersed.

The CBJ has attempted to identify a site where an ATV/OHV park can be developed to satisfy the needs of Juneau’s ATV enthusiasts. However, it’s been a continual struggle to find an appropriate site for ATV/OHV use. Nearly 35 sites over the last decade have been considered and rejected for potential ATV/OHV use (NOHVCC, 2013). In the 2013 Comprehensive Plan, City and Borough of Juneau (CBJ) committed to “seek location and construction for an ATV/snowmobile course with a programmed riding course as well as trails.” In 2013, several site options were evaluated: the Goldbelt Quarry at Echo Cove, a site at 35-mile of Glacier Highway, the Fish Creek Quarry, and the Lemon Creek Gravel Pit. Each site comes with its own opportunities and constraints, and history. Some of these sites have been considered multiple times and have been a part of the continued controversy in the development of an ATV/OHV area. The 35-mile site appeared to be promising, but is costly to develop and also has environmental considerations such as wetlands and anadromous streams. At this time, the CBJ appears to be no closer to identifying a suitable site.



Figure 21. Vehicular and pedestrian gate on Montana Creek Road just beyond the Hank Harmon Rifle Range. Photo courtesy of Amy Sumner, JWP.

The CBJ installed a vehicular gate and adjacent pedestrian gate just past the rifle range entrance on Montana Creek Road (Figure 21). The vehicular gate is closed from 9:00 P.M. to 7:00 A.M., so that it is open during the same hours as the rifle range. There is also video surveillance. Though the purpose of this vehicular gate is to deter illegal dumping that has historically occurred along the end of Montana Creek Road beyond the rifle range, this may have some impact on ATV use and riders’ behaviors.

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Concerns with Motorized Use

Approximately 78 percent of participants either agreed or strongly agreed that ATV use is a threat to the watershed, and ATV use ranked the highest among the other identified threats (see results for Question 8). Approximately 21 percent of responses to Question 9 indicated that ATV/motorized use posed the greatest threat to Montana Creek.

However, conflict between motorized and non-motorized uses is one of the most contentious issues in managing recreational areas, and the Montana Creek Watershed is no exception to this trend. Concerns regarding motorized use in the Montana Creek watershed voiced during the Montana Creek Task Force meetings and in the public survey are reflective of the user conflicts surrounding motorized use, and can be generalized into two perspectives:

- Motorized use is destroying fish and wildlife habitat, and impacting non-motorized uses
- Montana Creek may be closed as a recreational riding area

Another concern, primarily identified by the Task Force, is that there is a lack of enforcement to ensure that motorized use is being properly managed and that riders are adhering to the regulations that are in place to protect Montana Creek.



Figure 22. ATV damage in the vicinity of the archery range. Photo courtesy of Chris Zimmer, Juneau Chapter of Trout Unlimited.

Motorized use is destroying fish and wildlife habitat, and impacting non-motorized uses: It is well-documented that motorized use can be destructive when it comes to fish and wildlife habitat. Impacts on soil, vegetation are widely discussed in literature regarding ATV impacts. These include soil compaction, erosion, alteration of drainage patterns, destruction of vegetation, and introduction of invasive plant species. In addition, impacts to soil and vegetation also lead to increased sediment loading to streams and can affect fish and wildlife habitat (Stokowski and LaPointe 2000).

Ground disturbance from ATVs is highly visible and, therefore, is difficult to ignore (Figures 22 and 23). One of the public survey participants wrote, “I have seen incredible stream degradation from ATVs!” While the damage may be an eye-sore, and is certainly not indicative of responsible riding behaviors, there are no studies on Montana Creek that provide quantitative impacts of ATVs/OHVs on the watershed beyond the miles of illegal trails and number of illegal crossings. There is no local data that connects ATV/OHV use with impaired fish habitat or

degraded water quality. In fact, published data suggests that water quality is quite high on Montana Creek and that the watershed meets state Water Quality Standards. Therefore it is difficult to say exactly what negative impacts ATV/OHV use is having on fish and wildlife habitat in the watershed at this time, if any. This is not seen as a problem for those who wish, as one survey participant wrote, "...to protect this valuable watershed while it is still intact and healthy - - NOT wait until it is impaired and costly to restore."

Another well-studied area in the literature is the impacts ATVs have on non-motorized users. Degradation of trails, noise intrusion, and the visible impacts to fish and wildlife habitat affect the recreational experience of non-motorized users. This can either lead to the displacement of non-motorized users, or conflicts between the two user groups. Public survey responses indicated that 78.3 percent either agreed or strongly agreed that ATV use is a threat to Montana Creek's health, and approximately 25 percent of the responses indicated that motorized use is the biggest threat. One public survey participant commented, "[I] like it better non-motorized" and another commented, "[Montana Creek] should be kept free of motorized vehicle use." However, it should be noted that the majority of survey participants are not motorized users.

Montana Creek may be closed as a riding area: ATV enthusiasts are seemingly in the minority of recreational users in the watershed as reflected in the public survey. Only 9 percent of participants indicated that they enjoy motorized recreation in the Montana Creek watershed (see responses for Question 4). For ATV enthusiasts that may enjoy riding on the Montana Creek Trail, the primary concern is losing use of the area. ATV/OHV enthusiasts already have to deal with limited legal riding options. A number of formerly legal riding areas have been closed to ATV use. In addition, a number of proposed ATV/OHV park sites have been rejected by the CBJ and the community over the years. According to a report written by the National Off-Highway Vehicle Conservation Council (2013), some riders are selling or parking their vehicles due to the lack of legal riding opportunities, while others travel outside of Juneau to enjoy riding opportunities elsewhere. Motorized users obviously want, like everyone else, a place to enjoy a favorite pastime.

The DNR representative on the Montana Creek Task Force expressed that the agency's primary concern is access to and the degradation of State lands, which is often associated with ATV use. In 2010, DNR indicated that off-road ATV/OHV use on state lands in the Montana Creek watershed was not



Figure 23. ATV damage in the upper McGinnis Creek watershed. Photo courtesy of Chris Zimmer, Juneau Chapter of Trout Unlimited.

permissible under the generally allowable use guidelines. However, use of these secondary trails still occurs and illegal riding is difficult to enforce in the Montana Creek watershed (enforcement addressed below). The DNR could potentially further restrict or prohibit ATV/OHV use in the area by establishing special conditions or special land use designations in the state land plan or other appropriate management plan if the agency feels that ATVs/OHVs are causing detrimental impacts to state lands. This could include potentially closing the 1.25 miles of the Montana Creek Trail currently open to ATV use.

Lack of enforcement: While motorized use is allowed, the chief deficiency in managing motorized use in the Montana Creek watershed will be the continued lack of enforcement. Due to a lack of enforcement, irresponsible riders are not being deterred from negligent behaviors. Regulatory signage does not seem to deter riders from illegally crossing Montana Creek and the regulatory signs are continually damaged (see Figure 24).

According to members of the Montana Creek Task Force, the Juneau Police Department (JPD) has difficulty with enforcement because they cannot get into the upper watershed, where the majority of illegal riding activities occur. In addition, there is no means for JPD to identify riders or their vehicles. It has been proposed to use cameras, but the Montana Creek Task Force indicated that posting cameras would not help JPD with enforcement because it is difficult to connect a rider to a particular ATV/OHV, due to the lack of tags/plates because ATVs/OHVs are not required by the State to be registered.



Figure 24. Damaged regulatory sign on Montana Creek. Photo from JWP’s archives.

Opportunities for Improvement

Recommendations to improve managing ATV/OHV use in the Montana Creek watershed are as follows:

Public Education: The Montana Creek Task Force believes that public education is the best opportunity for improving the impacts from motorized use. The Task Force recommends an education/outreach campaign encouraging ATV enthusiasts to comply with motorized use regulations in the Montana Creek watershed and encourage riders to be responsible stewards. Some states have “Trail Ambassador” programs where volunteers are trained to greet fellow outdoor enthusiasts, provide useful information about the trail and responsible ATV/OHV use, and assist in minor aid and emergencies. A similar program could be implemented in Juneau if there is stakeholder buy-in and funding could be secured. This could provide a means for ATV enthusiasts to self-regulate and maintain their riding privileges in the Montana Creek Watershed.

Encourage the development of an appropriate ATV/OHV site: While, historically, the majority of the public has spoken against proposed ATV/OHV sites, the Montana Creek Task Force would like to encourage the CBJ Planning Commission to continue working towards identifying and developing an appropriate ATV use site. The Task Force believes this would not only benefit the ATV user community, but access to an alternate site would allow conditions to improve in Montana Creek, since riders could be encouraged to go to the alternate site.

Implementing ATV user fees, permitting and/or registration: A feasibility study should be conducted to determine if there is a way to assess user fees through municipal permitting, registration, or other means. There are examples of municipal-based permitting programs that can be used as a model. This could have several beneficial outcomes. First, the fees could be set aside to fund the development of an appropriate ATV/OHV site, as well as provide funding for continued maintenance and operations once the site is developed. Assessed fines could also be used to restore damaged areas. Secondly, it could also provide a means of identifying individuals that do not comply with motorized use regulations in Montana Creek.

Assess and restore ATV-damaged areas: In 2010, JWP with support from U.S. Fish and Wildlife Service mapped ATV trails, stream crossings and damaged areas along Montana and McGinnis Creeks (Figure 19). However, conditions may have changed since then. We do not have a handle on the current extent of ATV-damaged areas, and what impacts the damaged areas are having on the watershed. While the visibility of ATV damage gives the perception that the impacts are significant, that is not necessarily the case. The Montana Creek Task Force recommends continued assessment of ATV damage in the watershed and identification of potential restoration sites.



Figure 25. ATV crossing of a Montana Creek tributary. Photo courtesy of Erik Norberg, JWP Board Member.

Recreational Trails Program: The Recreational Trails Program (RTP) administered by the DNR Division of Parks and Outdoor Recreation could be a potential funding source for trail related environmental protection, safety and educational projects described here. The applications for the RTP grants are available starting August 15 and must be submitted by November 15 (DNR Division of Parks and Outdoor Recreation, 2014). JWP hopes that it can partner with CBJ, other non-profits and/or ATV user groups to fund the variety of projects and activities recommended here to improve ATV management in the Montana Creek Watershed.

Suction Dredge Mining

Suction dredge mining is a popular form of mining for gold in Alaskan streams. Suction dredges work like a vacuum; an intake hose is used to suck up sediments from the streambed into a sluice box that filters the gold from the sediments and discharges the sediments back into the stream (Figure 26). Suction dredges of various sizes and power can be used, from smaller recreational models to large, heavy dredges that can process large amounts of material in a single day. Suction dredge mining is more popular in the Northern and Central Regions of Alaska. Southeast Region saw its first suction dredge mining permit request approximately five (5) years ago. Concerns regarding this activity in Montana Creek have likely increased with public awareness that these activities are occurring in a locally-favored fish stream. Small scale, or recreational, mining is defined as the use of a 6" diameter intake hose (or smaller) powered by a motor that is 18 HP or less. It is this level of mining that has been permitted in Montana Creek in recent years.

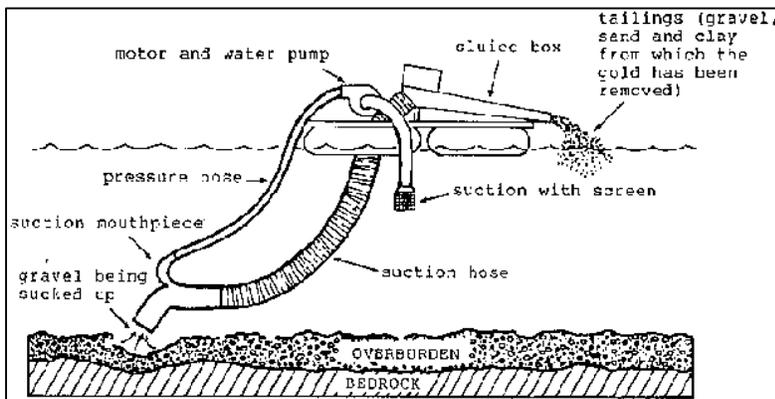


Figure 26. Diagram depicting how a suction dredge operates. Image from the Humanity Development Library Collection, New Zealand Digital Library, University of Waikato.

Current Conditions and Management

There are different regulatory requirements for suction dredge mining activities depending on the size of the suction dredge being used, whether the activities are occurring on state or federal lands, and whether the activities are being conducted in anadromous streams.

Montana Creek and its tributaries are anadromous streams, and the watershed includes both state and federal lands. Small scale mining occurring in Montana Creek and its tributaries will require, at minimum:

- Fish Habitat Permit from the Alaska Department of Fish and Game (ADF&G)
- Alaska Pollutant Discharge Elimination System (APDES) permit from the Alaska Department of Environmental Conservation (DEC) in the form of a General Permit.
- A CBJ permit

Suction dredge mining activities occurring in the Montana Creek watershed may also require a DNR permit, if occurring on State land.

A Fish Habitat permit from the ADF&G is required for all anadromous and resident fish streams, regardless of land ownership. A separate Fish Habitat permit is also required for crossing anadromous streams, such as Montana Creek, with a motorized vehicle. ADF&G Habitat Division permits to conduct small scale mining expire one year to evaluate if any changes to timing windows are needed. Timing windows aim at protecting sensitive life stages within stream gravels based on species cataloged for a specific stream. ADF&G Habitat Division Biologists discuss conditions and answer questions permittees have prior to instream activities.

In most cases, the ADF&G Biologists will work with the permittee to set up an on-site visit to observe active mining operations, Biologists then write up a trip report summarizing their visual observations in the form of a Memo to the Regional ADF&G Habitat Supervisor for Southeast. These trip reports are provided to regulatory personnel at other agencies such as U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, National Marine Fisheries Service (NMFS), Alaska Department of Natural Resources (DNR), and the City and Borough of Juneau (CBJ) as well as the permittee.

All suction dredge mining activities must also be covered under an APDES General Permit, which permits the pollutant discharges resulting from the suction dredge mining activities. There are two APDES General Permits for suction dredge mining: one for small-sized suction dredge placer miners and one for medium-sized suction dredge placer mines. These are dependent on the size of the suction dredge being used. The APDES permits requires that the suction dredge operator implement Best Management Practices (BMPs) to ensure that their pollutant discharges are being reduced or minimized to meet State Water Quality Standards.

On state lands, suction dredge mining activities are regulated by the DNR Division of Mining Land and Water. Recreational Suction dredge mining is considered a generally allowed use of state lands. All generally allowed uses, such as suction dredge mining, are subject to the conditions listed in 11 AAC 96.025, which are meant to minimize the impact of these activities on state land. If an individual does not adhere to these conditions, they can be penalized under State law. In addition to being held to these conditions, suction dredge mining activities occurring on State land that does not meet the definition of a recreational activity requires a permit from the DNR Division of Mining Land and Water.

Suction dredge mining on state land is classified as a recreational activity when the suction dredge has an intake line of six inches or less, is powered by a motor of 18 horsepower or less, pumps no more than 30,000 gallons of water per day, and which is used without mechanized support equipment. In addition, use of structures in association with suction dredge mining is not permitted on state land, even if they are on skids or other form of non-permanent foundation. Temporary tent camps may be used, but not for more than 14 days at one site.

The City and Borough of Juneau (CBJ) regulates recreational mining under CBJ Code 49.65.00, Exploration and Mining. The Exploration and Mining code section was written primarily to regulate large-scale exploration, but recreational mining is regulated under the same ordinance. Within the CBJ boundaries, recreational mining requiring a mining exploration permit from the City includes anything that has an engine, e.g. suction dredge, sluice box, etc. Since gold panning does not require an engine, it

does not require a CBJ permit. The CBJ mining exploration permit has a \$200 fee, no matter if it is a large commercial operation or a small recreational one. Since the Exploration and Mining code section was written to apply to large-scale exploration, adjustments in the internal review process have been made to accommodate recreational mining activities. CBJ review is quite limited and considers whether bonding is necessary to cover the potential cost of equipment left behind. CBJ requires permission from the underlying landowner, if the applicant is not the landowner. The current policy is to issue permits for five years. CBJ coordinates with ADF&G and other relevant agencies to be sure that all agencies and the applicant have been informed of the development and requirements (Camery, personal communication).

According to the ADF&G Habitat Division, permitted suction dredge mining occurring in the Montana Creek watershed are small-scale recreational mining operations conducted by individuals (generally retirees) and there were only five permitted operations at the time this plan was written. One of the public survey participants stated, “I like to prospect for gold. I'm concerned about sport fishermen preventing me from doing that. It is there for everyone!”

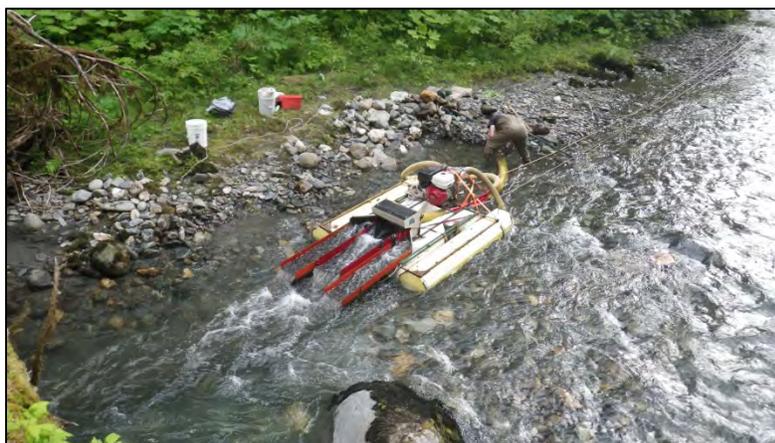


Figure 27. Recreation suction dredge mining occurring June 2014 below confluence of McGinnis and Montana Creeks. Photo taken by Greg Albrecht and provided courtesy of Johnny Zutz, ADF&G.

Concerns with Suction Dredge Mining

Concerns regarding recreational suction dredge mining primarily centered on the impacts this activity has on stream and riparian habitat, and resulted in the following two questions:

- Do suction dredge mining activities truly have minimal impacts?
- What are the comprehensive/cumulative impacts from recreational suction dredge mining activities?

In addition, the CBJ permitting process for recreational suction dredge mining presents an administrative concern.

Do suction dredge mining activities truly have minimal impact? The Montana Creek Task Force was concerned permitting authorities are operating under the assumption that recreational suction dredge mining is a minimal impact activity, and that this assumption is not supported by monitoring or other evidence. Participants in the public survey also seemed concerned about allowing recreational suction dredge mining. In the public survey, approximately 70.7 percent of the participants agreed or strongly

agreed that recreation suction dredge mining is a threat to the watershed (see results for Question 8). Responses to Question 9 indicate that approximately 18 percent of participants believe this activity is the biggest threat. One participant wrote: “Gold dredging is harmful to spawning salmon yet it seems to be allowed despite the warnings.” Indeed, several of the public’s comments indicated there are individuals who do not trust that the regulatory agencies, particularly the Alaska Department of Fish and Game (ADF&G), are regulating activities in a manner to protect the Montana Creek fishery.

Suction dredge mining, even small-scale recreational operations, has the potential to affect a stream. Recreational suction dredge mining has been shown to have the following impacts: alteration of aquatic and riparian habitat, increased fine sediment deposition, increased turbidity, mobilization of heavy metals and other pollutants. While serious impacts to habitat and water quality have been documented, the literature is mixed with regards to the nature and severity of the impacts resulting from suction dredge mining activities. The actual degree of impacts depend on a variety of factors including the size and power of suction dredge(s) being used; whether individual operators conduct mining activities responsibly and in compliance with their permits; stream flow conditions; presence of sensitive species and/or life stages; presence of sensitive habitat; and the number and distribution of suction dredge mining activities occurring within a single watershed. In addition, other activities associated with suction dredge mining activities such as ATV use and camping, can also have impacts on the stream and surrounding riparian areas. There are studies indicating the effects of recreational suction dredging (where a smaller nozzle and engine are used) appear to be local and minor, particularly when properly managed and regulated. This “proper management” includes the suction dredge operators abiding by their permits, the ability of the regulatory agencies to enforce their permitting requirements, and the implementation of Best Management Practices (BMPs) (Horizon Water and Environment 2009; Oregon Chapter American Fisheries Society, 2013; Harvey and Lisle, 1998).

The ADF&G Habitat Division Southeast Area office gave a history of suction dredge mining permitting activities in Southeast Alaska to address the concern that they are treating recreational suction dredge mining as a minimal impact activity. Southeast Region saw its first suction dredge mining permit request approximately five years ago. In response to this request, the ADF&G Habitat Division Southeast Area office sought input from colleagues in other Habitat Division Area offices and in other agencies such as DNR, and did research to understand what this activity entails and its potential impacts before issuing the first permit. Suction dredge mining is popular in the Northern and Central Regions of Alaska, and agencies in those Regions had more experience with permitting this activity. The ADF&G Habitat Division Southeast Area office learned that this activity is widely considered a generally allowable use by national entities, including the U.S. Environmental Protection Agency (EPA) and the U.S. Army Corp of Engineers, as well as by the Alaska Department of Natural Resources.

Furthermore, in response to the first request on McGinnis Creek, the ADF&G Habitat Division Southeast Area office Habitat Biologists set up a weir, and conduct stream surveys and fish trapping to determine whether steelhead were present in the McGinnis Creek because their presence would have prevented the issuance of a permit. However, Habitat Biologists were unable to document the presence of steelhead in McGinnis Creek, which surprised the ADF&G Habitat Division Southeast Area office since Montana Creek is listed on the anadromous waters catalog for steelhead and it was commonly thought

steelhead were present in McGinnis as well. A Memorandum documenting the Habitat Biologist's findings was presented to the Regional ADF&G Habitat Supervisor for Southeast (Hitselberger, J. 2010). This finding sparked concern among fishermen, who felt that the agency should take a more precautionary stance and treat McGinnis Creek as though steelhead were present (Marquis, 2010b).

Based on the information gathered, the ADF&G Habitat Division Southeast Area office has been issuing permits for suction dredge mining in accordance with ADF&G Statutes and Regulations. ADF&G imposes timing windows that restrict suction dredging activity to those times when there are no eggs or alevins in the stream gravels. Suction dredging may occur in a window if activity is occurring on dry gravel bars or the perimeter of the stream where eggs/alevins can be avoided. Since permitting of recreational suction dredge mining is still relatively new in Southeast, the ADF&G Habitat Division Southeast Area office has expended resources (staff time) conducting on-site visits in an effort to ensure any permitted recreational suction dredge mining activities are not negatively impacting fish habitat. Habitat Biologists document their field visits in staff reports which are sent to other regulatory agencies (as previously described).

ADF&G Habitat Division believes all evidence from their on-site visits suggests the few permitted small-scale recreational suction dredge mining operations currently in operation in the Montana Creek watershed have relatively minor impacts and the agency does not believe the current circumstances are compromising the watershed's fish habitat. Existing operations are not moving large amounts of materials; operating a suction dredge is highly labor intensive and operators are mostly retirees. Operators have been cooperative with Habitat Biologists during field visits. . Continued monitoring will allow ADF&G to expand its knowledge regarding this activity and possibly address the issue of cumulative impacts.

What are the comprehensive/cumulative impacts from recreational suction dredge mining activities?

As previously stated, the number and distribution of suction dredge mining activities occurring within a single watershed can influence the degree to which the watershed is impacted. However, there is very little research regarding the cumulative effects of recreational of suction dredge mining operations. This lack of information is a concern to the Montana Creek Task Force. According to ADF&G Habitat Division, most watersheds being adversely affected by suction dredge mining have a large number of permitted operations. ADF&G Habitat Division Southeast Area office believes understanding the cumulative impacts of suction dredge mining operations could greatly inform their permitting process and help protect Montana Creek and other watersheds. Though there are currently only a few individuals applying for permits for suction dredge mining in Montana Creek, this activity tends to fluctuate with the price of gold, and there could be more applications if gold prices were to increase. If there were ever an increase in applicants, ADF&G does not have enough information to know how many permits could be issued before the cumulative effects of the suction dredge mining activities would adversely affect the creek.

CBJ permitting process for recreational suction dredge mining: Another concern with recreational suction dredge mining is that the City and Borough of Juneau's permitting process is the most deficient aspect of managing suction dredge mining activities. In cross-referencing data with the ADF&G, the CBJ

has become aware that only 30 to 40 percent of individuals are obtaining the required CBJ permits. However, the CBJ does not have the staff to pursue those individuals who did not obtain permits. Information regarding the permitting requirement is either not getting to the suction dredge mining operators, or the additional \$200 permit fee is deterring these recreational miners from submitting a mining exploration permit application with the City.

Opportunities for Improvement

There are a number of actions that could be implemented to improve the circumstances surrounding suction dredge mining. The Montana Creek Task Force recommends the following:

Research the impacts of suction dredge mining, particularly cumulative impacts: If possible, it might be worthwhile to work with suction dredge mining operators to conduct an impartial monitoring effort on the currently permitted operations. This could, perhaps, be done by the JWP or another party that does not represent the operator or the regulatory agencies. This data/information can be used in a public education/outreach campaign that may be helpful in alleviating concerns regarding the current impacts of suction dredge mining on Montana and McGinnis Creeks. More important, however, is that research is needed to understand the cumulative impacts of recreational suction dredge mining. Knowing how many permits could be issued in a watershed without causing adverse cumulative impacts would assist permitting agencies in making informed decisions. This information would reduce the risk of allowing too many permitted suction dredge mining operations in any single watershed. Over-permitting these activities caused other watersheds to become adversely affected by recreational suction dredge mining. However, this could be prevented in Montana Creek and other watersheds in Southeast Alaska, which currently do not have a large number of permitted suction dredge mining operations.

Identify non-fish streams that could be productive for suction dredge mining: Identifying non-fish streams within the Juneau area that could be productive for suction dredge mining would provide a means to redirect activities to these waterbodies. Those individuals who participate in suction dredge mining can be informed of alternate streams in which to conduct their activities or, perhaps, redirected to these alternate streams to reduce or prevent cumulative impacts on Montana Creek. The benefit of these alternate sites to the individual is that they would not require a Habitat Permit and, therefore, the activity could be less burdensome in terms of meeting regulatory requirements.

Improve CBJ's permitting process: CBJ's Exploration and Mining code section was written primarily to regulate large-scale exploration, but recreational mining is regulated under the same ordinance. The code could be modified to make permits less costly for recreational miners in order to encourage them to obtain the permit. In addition, in line with the previous suggestion, the Exploration and Mining code could also be amended to include pre-approved recreational mining areas that have little to no habitat impacts or conflicts with other recreational users, which could be exempt from the requirement for a mining exploration permit. Again, this might re-direct recreational miners to other watersheds and reduce the permitting enforcement and tracking burden on CBJ. In any case, it would still be beneficial for CBJ to improve their ability to track and enforce their permits.

Public education and outreach: Public education and outreach has to address to different groups: those that are recreational suction dredge mining operators and the general public. According to ADF&G, they educate operators at the time they obtain their Habitat Permit, but there may be other opportunities to conduct outreach with the operators. However, it is important to also educate the general public about recreational suction dredge mining to improve their understanding of this activity, how it is managed, and its actual impacts on Montana Creek. This will improve public perception by providing concerned stakeholders with facts regarding suction dredge mining activities in the Montana Creek watershed and make them more informed participants in future planning discussions about this activity.

Invasive Plant Species

Invasive plant species are non-native species that can spread aggressively throughout a habitat once introduced and cause adverse impacts to the environment. Invasive plant species can be introduced to habitats by both natural and human-aided pathways. Once introduced, invasive plants have many characteristics and adaptations that allow them to out-compete native vegetation. Typically, invasive plants grow rapidly, mature early and can reproduce both sexually and asexually. Invasive plant species can alter habitat composition, alter soil and water nutrient availability, and increase the risk of wildfires. Aquatic habitats such as wetlands and waterways are particularly sensitive to invasive species. Relatively pristine areas, like the Montana Creek watershed, are not immune to an invasive plant infestation. Surveys of the Montana Creek watershed have identified infestations of invasive plant species occurring at sites disturbed by human activities and infrastructure, as well as areas disturbed by natural processes.

Current Conditions and Management

Alaska Department of Natural Resources (DNR) has authority to regulate and manage noxious weeds and invasive plant species in a variety of capacities. DNR's regulations in 11 AAC 34 includes a list of prohibited and noxious weeds, which are regulated through restrictions on the sale, use and transport of seed. The DNR Division of Agriculture also developed a Strategic Plan to coordinate prevention, outreach and management strategies for invasive plant species.

The DNR has twelve Soil and Water Conservation Districts that are legal subdivisions of the DNR under AS 41.10. The districts are non-regulatory agencies that address conservation issues through education, technical assistance, and grant programs. The Southeast Soil and Water Conservation District is the regional district that includes Juneau.

The Alaska Department of Fish and Game (ADF&G) also plays a regulatory role in the management of invasive plants, though ADF&G's focus is primarily invasive aquatic plants that impact fish habitat. ADF&G's regulations prohibit transplanting aquatic plants and prohibit anglers from using footgear with absorbent, fibrous material (e.g. felt) soles to prevent the spread of invasive aquatic plants.

The CBJ 2013 Comprehensive Plan outline's the City's policy toward invasive species management: "to protect local biodiversity, including native flora and fauna, from invasive species." In the Comprehensive Plan, CBJ has committed to the following Implementing Actions with regards to invasive species:

7.12 – IA1 The CBJ government should fund or otherwise support a study of the effects of climate change on the potential for invasive species to immigrate to and thrive in the borough, to the detriment of native species. If this study identifies potential harmful effects of invasive species, the CBJ government and community should undertake aggressive measures to prevent and eliminate this infestation hazard.

7.12 – IA2 The CBJ should fund or help fund a Borough-wide study of invasive plants to produce an inventory and maps of existing locations of invasive plants on, at least, CBJ-owned lands. This study should include the following elements: (1) development of a priority list of invasive plant species to be targeted for control and eradication throughout the CBJ and a five to ten year plan for achieving that goal; (2) development of a CBJ team within an existing department or to a

contracted non-profit group to coordinate the implementation of that eradication program; (3) development of a prevention plan to identify and address sources of invasive plant species; (4) development and implementation of a public education program to promote awareness of the impacts of and methods to eradicate invasive plant species and to urge retailers not to sell invasive species or to prohibit them from selling them; (5) development of new land use controls to require private property owners to eradicate, or to prevent the introduction of invasive species on their property as part of review and approval of new building or grading permits; and (6) designation of a secure site and procedures for safe disposal of pulled or cut invasive species.



Figure 28. Volunteers removing Bohemian knotweed in the Montana Creek watershed. Photo from JWP archives, 2011.

Invasive plant species are also managed by a variety of non-profit and non-government organizations (NGOs) including the Alaska Association of Conservation Districts, UAF Cooperative Extension Service, Southeast Alaska Watershed Coalition (SAWC), and the Juneau Watershed Partnership (JWP). The role of these organizations is primarily education and community service projects such as invasive plant removal using volunteers (Figure 28).

Non-native plant species are usually given an invasiveness ranking, which is a number between 0 and 100 denoting how much of a threat the plant poses to native ecosystems. The higher the invasiveness rank, the greater the threat the plant poses. The ranking is calculated based on the species' ecological impacts, biological attributes, distribution and response to control measures.

There has already been a rapid response effort in Montana Creek by the Southeast Alaska Soil and Water Conservation District. Since 2011, the Alaska Association of Conservation Districts (AACD) has partnered with the U.S. Fish and Wildlife Service (USFWS) to manage invasive plant species in Juneau. Efforts began with conducting invasive plant surveys in three Juneau watersheds, including Montana Creek. In 2011, approximately 31 acres of the Montana Creek watershed was surveyed. This survey identified approximately 18 invasive plant species in 562 infestations that cover a total of 6.7 acres of the watershed. Several of the identified invasive plant species had an invasiveness ranking of 60 or higher, including reed canarygrass, ornamental jewelweed, Bohemian knotweed, oxeye daisy and orange hawkweed. The most common invasive plant species in the watershed is creeping buttercup, which has an invasiveness ranking of 54 (Figure 29).



Figure 29. Creeping buttercup growing on a streambank in lower Montana Creek. Photo from Hudson et al, n.d.

Most infestations were found in areas disturbed by human activities and infrastructure (e.g. roads and trails) and natural processes (e.g. wind-thrown trees, bank erosion, fluvial sediment deposition). Water seems to play a role in transporting some species away from the road and trail system. ATV/OHV trails harbored few invasive species, and it is suspected that regular traffic and forest canopy shading may be preventing establishment along these areas (Hudson, et al, n.d.).

Following mapping and inventory efforts, control measures have been implemented. A single infestation of ornamental jewelweed consisting of 100 plants near the rifle range was removed in 2011, and additional plants were removed from this site in 2012 (Hudson, et al, n.d.). In 2013, the USFWS and SE SWCD conducted hand-pulling projects and herbicide control of bohemian knotweed and reed canary grass throughout Juneau. As part of this effort, reed canary grass was targeted in Montana Creek to protect fish habitat (Maupin and Hudson, 2013). According to Brian Maupin, the SE SWCD has eradicated a knotweed patch and 30 infestations of reed canary grass in the Montana Creek watershed.

Concerns with Invasive Plant Species

While a little over half of the public survey responses indicate invasive species are a threat to the watershed (see results for Question 8), no one indicated that invasive plant species, in and of themselves, are the greatest threat (see responses to Question 9). Those that mentioned invasive plant species did so in relation to ATV use. The Montana Creek Task Force feels that current strategies are working to address existing conditions in the watershed. However, that does not mean that there are no concerns with regards to invasive plant species. The following concerns were identified during the planning process:

- Ensure the watershed stays in “prevention” mode
- The community garden appears to be a source of invasive plants
- ATVs as vectors

Ensure the watershed stays in “prevention” mode: Ensuring that the watershed stays in “prevention” mode is a primary concern. This involves continued Early Detection/Rapid Response efforts, particularly for the following species of concern:

Orange Hawkweed (*Hieracium aurantiacum* L.) is a perennial herb, with red to orange flowers. Orange hawkweed has an invasiveness ranking of 79, and was identified as a concern because this plant can be destructive if it gets into undisturbed ecosystems, like the Montana Creek watershed. Hawkweed is allelopathic, which means it can release chemicals into the soil that can affect the growth and survival of nearby plants. Hawkweed also tends to establish dense monocultures and, therefore, limit biodiversity. Hawkweed is also likely to reduce soil moisture and nutrient availability. The seeds are easily dispersed by wind, animals and human activities (Klein, 2011b). Orange hawkweed is one of the five most invasive species identified in the watershed and requires rapid response. One orange hawkweed infestation was found next to a trail in the upper watershed in the 2011 survey (Hudson et al, n.d.).

Reed canarygrass (*Phalaris arundinacea* L.) is a perennial grass with an invasiveness ranking of 83. Reed canarygrass forms dense monocultures in wetlands. Ecological impacts include reduction in cover for small mammals and birds (the infestations are too dense for use); promotion of silt deposition and constriction of waterways; and alteration of soil hydrology (Klein, 2011c). Reed canarygrass infestations were primarily found in roadside ditches along Montana Creek Road from the rifle range to the end of the road. Infestations were also found within an extensive area of braided channels upstream of the community garden (Hudson et al, n.d.). Control measures have already begun in Montana Creek.

European Mountain Ash (*Sorbus aucuparia* L.) is a tree that has alternate, pinnately compound leaves and small white flowers that bloom in clusters. European mountain ash has an invasiveness ranking of 59, and was identified as a concern because it can out-compete native species for pollinators due to their numerous blossoms. It can also hybridize with similar, native species such as Sitka mountain ash (*Sorbus sitchensis*) and Cascade mountain ash (*S. scopulina*). Otherwise, the impacts of European mountain ash are largely unknown (Klein, 2011a).

Rock snot (*Didymosphenia geminata*) is a freshwater diatom that can form large, dense mats that can spread across the stream bottom. The mats are strong and resistant to degradation. The mats are not slimy, like algae, and can be yellow-brown to white in color. It can be introduced through contaminated fishing gear. The Task Force is not sure if rock snot is present in Montana Creek, but considers it worthwhile to determine whether it is present.

The community garden appears to be a source of invasive plants: Previous mapping efforts indicate that a lot of invasive species are present within the vicinity of the community garden. Therefore, the community garden appears to be a source of invasive plants.

ATVs as vectors: Although mapping efforts have not shown a large number of infestations on ATV trails, ATVs have the potential to be a vector for invasive plant species into more remote, sensitive locations and is a concern for continued prevention.

Opportunities for Improvement

In regards to invasive species, the group made these recommendations:

- Continue rapid response efforts
- Conduct long-term monitoring
- Provide education/outreach, particularly to ATV/OHV groups

Continue rapid response efforts: There has already been a rapid response in Montana Creek. Continuing these efforts will maintain the “prevention mode,” because known infestations will be addressed.

Conduct long-term monitoring: There is a need for long term monitoring to keep Montana Creek in “prevention” mode. This will help track whether the rapid response efforts are improving conditions and allow for identifying and addressing new infestations as they occur. The latter is particularly important for highly invasive plant species, which are more difficult to address once established.

Provide education/outreach, particularly to ATV/OHV groups: There is a need for more education about invasive plants and ways to prevent their spreading. Although mapping efforts have not shown a large number of infestations on ATV trails, ATVs have the potential to be a major vector for invasive plant species. It is important to educate riders at this stage, in order to prevent spread of invasive species throughout the area.

Other Recommendations

Through the Montana Creek Task Force meetings and the public survey, there are other items recommended to improving conditions on Montana Creek.

Improvements to the Montana Creek Trail system: The Montana Creek Trail system consists of three trail segments totaling approximately 11 miles. The Lower Montana Creek Trail connects with the 2-mile long Kaxdigoowu Heen Dei Trail and the Upper Montana Creek trail connects with the 3-mile long Windfall Lake Trail (Figure 31). The Task Force and the public identified improvements that they would like to see in the Montana Creek Trail system. These include:

- Address the litter/dumping problem at the Montana Creek Road trailhead and throughout lower portions of the creek;
- Downstream of the Juneau Youth Services (JYS) property, re-locate hiking trails 300-feet away from the creek, as proposed in the *Lands Assessment and Recreation Corridor Conservation Proposal* (Trout Unlimited, 2006);
- Improve the Montana Creek Trail's connection to Auke Lake;
- Improve the Montana Creek Trail upstream of Back Loop Rd.;
- Improve the upper section of Montana Creek Trail to Windfall Lake; and
- Improve access to McGinnis Creek basin

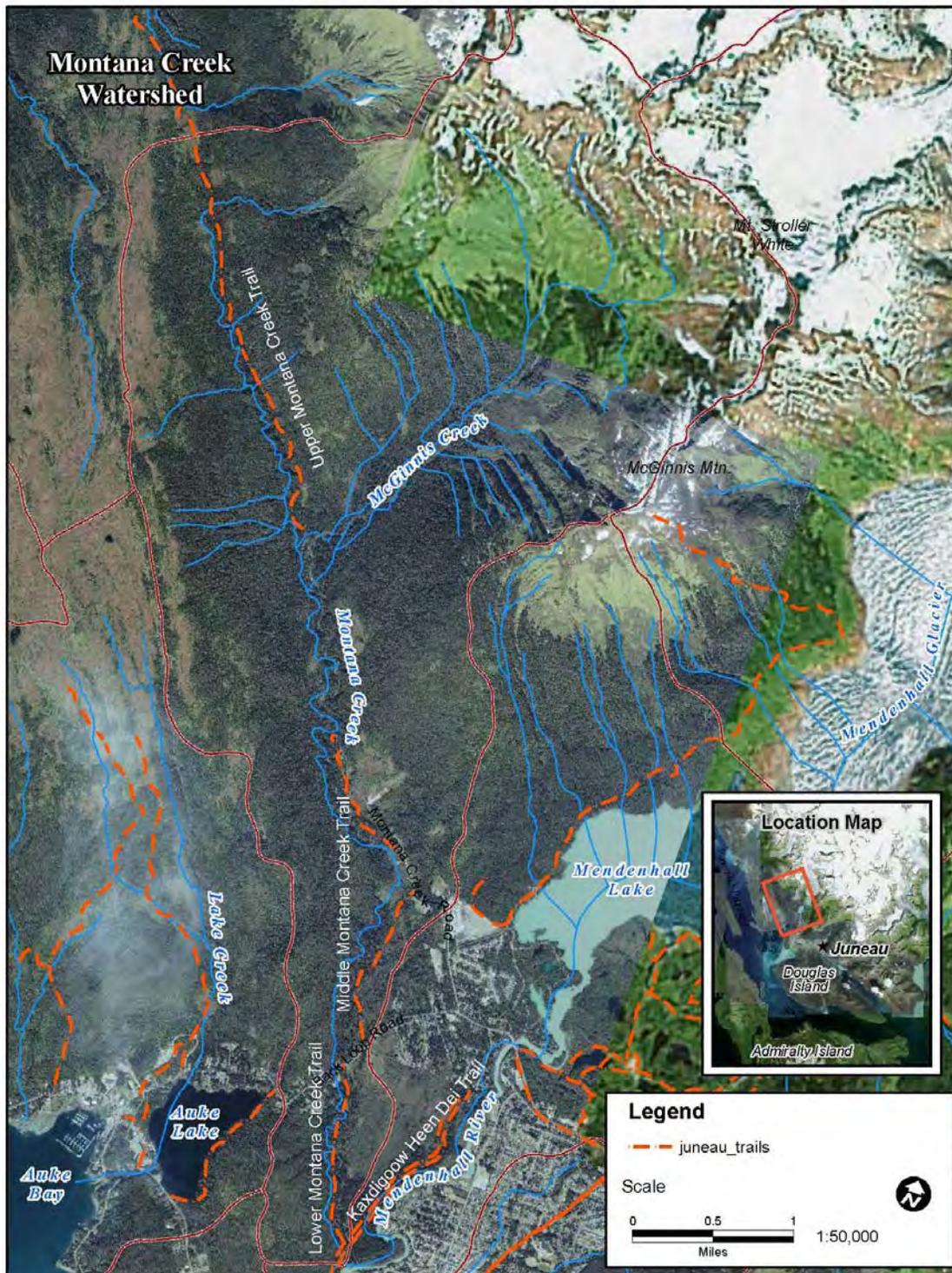
Replacing the Montana Creek Bridge:

The Task Force would like to reopen discussions about replacing the Montana Creek Bridge located at the end of Montana Creek Road (Figure 30). The Task Force believe funding was available in the past for a temporary bridge at this location, but was not pursued because permitting became problematic. The Juneau Trout Unlimited Chapter previously committed funds for a revetment project upstream of the bridge to improve bank stabilization, but it would have required the bridge to be rebuilt. When it became clear the plans were to build the bridge to support



Figure 30. The Montana Creek Bridge located at the end of Montana Creek Road. Photo courtesy of Amy Sumner, JWP.

vehicle traffic, Trout Unlimited decided to retract support for the revetment project because they were concerned about the potential impacts of traffic associated with the proposed replacement bridge (Mark Kaelke, Personal Communication). The U.S. Forest Service representative on the Task Force believes the USFS may have supplies to build a replacement bridge, but would have to confirm this. The Task Force agreed that the best bridge structure for this location would be one that had a clear span across the creek (no pilings), and support pedestrians and non-highway (off road) vehicles only.



Service Layer Credits: U.S. Geological Society; Southeast Alaska GIS Library; University of Alaska Southeast

Figure 31. Montana Creek trail system.

Improve Fish Habitat in Montana Creek: The following actions are recommended to help improve and protect fish habitat, and fish populations:

1. JWP or other non-profit group, or as a partnership, submit a proposal to Sustainable Salmon Fund or other grantor to map undocumented habitat.
2. Identify and replace culverts preventing fish passage.
3. Identify areas where fish habitat can be created.
4. Determine whether overfishing is impacting fish populations.



Figure 32. Four side-by-side culverts that create a low and high water velocity fish barrier on a side channel of Montana Creek. Photo courtesy of John Hudson, USFWS.

Implement CBJ Comprehensive Plan Policies: The 2013 Comprehensive Plan contains numerous environmental policies, standard operating procedures, and implementing actions that could improve protection of Montana Creek and other Juneau watersheds. This includes those that were previously mentioned in this Plan as well as many others that will not be specified here. Though it is understood that implementation of these policies could take time, the Task Force would like to encourage the CBJ to work toward implementing the measures outlined in the Comprehensive Plan.



Figure 33. Volunteers from the annual Litter Free Spring Clean-Up posing with the garbage they collected from the Montana Creek trail. Photo from JWP's archives.

Continue Participation in Litter Free, Inc.'s Annual Spring Clean-Up: To address litter and debris in Juneau's watersheds, JWP will continue participating in the Annual Spring Clean-up. Recognizing the importance of Montana Creek and the expressed concerns regarding littering and dumping occurring within the watershed, particularly along the trail, JWP will ensure that some volunteers at the Clean-up are directed to focus clean-up efforts on Montana Creek.

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APPENDIX A. Montana Creek Task Force Documents

Montana Creek Watershed Stewardship Task Force - 1st Meeting March 21, 2013

Meeting Notes

Nina Horne - Juneau Watershed Partnership

- Introduced the Juneau Watershed Partnership and gave a brief description of the USFS sponsored project to develop a Montana Creek Watershed Stewardship Plan.

Erik Boraas - Trail Mix

- Trail Mix has worked on bank rehabilitation, trail improvements and fisherman access (finished last summer, 2012) in the Montana Creek Watershed.
- With the 1% CBJ sales tax, will eventually get funding to rebuild Montana Creek trail connection from Back Loop Road to the Community Garden (4-5 years away).
- Supports non-invasive trail development and has had mostly positive interaction with the community in the Montana Creek Watershed when doing work in that area.

Mark Kaelke & Brad Elfers - Trout Unlimited (both) and Alaska Fly Fishing Goods (Brad)

- Worked on the Montana Creek Lands Assessment in 2006, which resulted in a 500 ft no-development buffer enforced by City and Borough of Juneau (CBJ) alongside the Montana Creek corridor.
- Trout Unlimited is mainly concerned with prevention and maintaining the current conditions (current status) and natural environment of the Montana Creek watershed.

Doug Sanvik - Alaska Division of Mining, Land and Water, Department of Natural Resources (DNR)

- The DNR manages state lands, and their primary concern is the access and degradation of state lands.
- The issue of degradation and access is often associated with ATV use and access to state lands and the affect that they have on the landscape, on and off-trails.
- The term General Use is roughly defined by the State of Alaska and is open to interpretation.
- Trail corridor on State lands is required to maintain a 25 foot corridor (could use some clarification).

Barbara Adams - U.S. Forest Service

- Interests as grantor include bringing all of the ideas together and collaboration in order to maintain and better Montana Creek Watershed.
- Restrict OHV use on USFS lands (they are currently not allowed to operate on Forest Service land).

Montana Creek Watershed Stewardship Task Force - 1st Meeting March 21, 2013

Jackie Timothy - ADF&G

- Generally concerned with fish passage, which involves permitting stream crossings and in-stream activities:
 - Activities requiring an ADF&G permit cannot harm or impede fish passage.
 - There are currently 3 recreational suction dredge mining permits issued through ADF&G and 1 person with an ATV crossing permit.
 - There are signs posted at stream crossings that ATV's are not allowed to cross the streams without a permit, but these signs are constantly requiring replacement.
- Log Retention project on bend of Montana Creek, downhill side of trail (failed project from previous years).
 - Materials have already been purchased but haven't acquired the necessary permits to cross the stream with large equipment necessary to install the retention.
 - The bridge crossing Montana Creek would also require stabilization and reinforcement in order to be fortified for construction equipment to pass over it.
 - The retention project would be a trails project, and would not necessarily benefit in-stream fish habitat and hydrology of the river system.
- Suction Dredge Mining
 - Jackie conducted an on-site visit to witness suction dredge mining first-hand being conducted in the stream.
 - Suction dredge mining is a generally minimal impact activity, not occurring in-stream, just on dry gravel beds, therefore not affecting egg beds and spawning habitat.
 - This activity is widely considered a generally allowable use by national entities, including the EPA, Army Corp of Engineers, DNR, and State of Alaska.
 - In Jackie's experience, more miners are applying for suction-dredge permits rather than mining illegally. *[CBI has a different experience, see Teri Camery's notes below]*
- Teri Camery - City and Borough of Juneau Senior Planner
 - CBI also requires a permit for suction dredge mining, and is not experiencing the same amount of legal permit applications as the ADF&G; especially when comparing applicants (applicants are required to possess both permits in order to legally suction dredge mine).
 - Teri mentioned the following work the CBI has done in regards to the watershed:
 - The CBI Comprehensive Plan has a number of goals and actions applicable to the Montana Creek watershed.
 - The normal planning code includes a basic stream setback of 50 feet.
 - Invasive species survey in Montana Creek that includes a knotweed patch.
 - ATV studies in the watershed.

Montana Creek Watershed Stewardship Task Force - 1st Meeting March 21, 2013

- The CBJ purchased a house in the watershed that was falling into Montana Creek and removed the house.
 - The CBJ is currently working on updating the Juneau Wetlands Management Plan, which includes wetlands mapping and classification in the Montana Creek watershed.
 - Flood Management - the CBJ currently has new/updated FEMA flood maps and the City must adopt the draft flood maps by August 2013.
- **John Hudson - U.S. Fish and Wildlife Service**
 - Has been working on invasive weed inventories in the Montana Creek watershed, which includes invasive weed surveys, mapping and eradication planning.
 - The weed survey included areas along the community garden and alongside the stream corridor.
 - 562 field investigations on greater than 7 acres, ranked 60 or more on an invasive species scale.
 - Invasive species located in the watershed include reed canary grass, which slows down water flow and increases sedimentation in the stream, damaging spawning habitat.
 - John has also worked on mapping fish habitat in the Montana Creek watershed, damaging foot trails at the rifle range and ATV trail mapping with the Juneau Watershed Partnership around Upper Montana Creek and McGinnis Creek.
- **Brian Maupin - SE SWCD**
 - Dana White, previous Invasive Plant Manager, set a foundation of work for the newly formed SE SWCD.
 - The SE SWCD works with invasive species, including knotweed and reed canary grass and follows the protocol of rapid response and eradication.
- **Erich Schaal - City and Borough of Juneau Docks & Harbor**
 - Hopes to use this format of the Task Force and apply it to the overarching goals at the Echo Cove boat launch, which is owned and operated by the City and Borough of Juneau.
 - Problems at Echo Cove include illegal ATV use and activity, degradation to the landscape and marine habitat caused by this illegal activity.
 - At one point there was a caretaker who lived in Echo Cove, but it ended up not working out.

Montana Creek Watershed Stewardship Task Force - 1st Meeting March 21, 2013

- **Mal Menzies - Juneau Gun Club**

- The Juneau Gun Club is on 10 acres of leased land from the City and Borough of Juneau and there are several small tributaries of Montana Creek that abut the leased property.
- There are no current plans for development on the property, but years past they had plans to re-permit and reconstruct the range.
 - The main issue was the disturbance and removal of contaminated soil containing lead shell casings, which could possibly contaminate the soil/peat by leaching into the wetlands.
 - Studies were conducted that detected minimal lead levels in the soil.
- There has been a discussion of adding a shooting sport course to the gun range, but no definitive plans have been made.

- **Chuck Caldwell - Raincountry Fly Fishers**

- Mainly concerned with ATV use and fish habitat in the Montana Creek watershed and would like to focus on preservation, before rehabilitation and restoration is necessary.

End Note: There was a discussion about the possibility of the CBJ Parks & Recreation department installing a gate on Montana Creek road, just past the rifle range. Erik Boraas confirmed with George Schaaf, Director of CBJ Parks & Rec, that plans are in place to install the gate near the rifle range over the summer 2013. The gate will operate the same hours that the rifle range is open.

Main Concerns discussed at the first Montana Creek Task Force meeting:

1. Access and trail maintenance
2. Illegal Trails
3. Stream Health
4. ATV Usage
5. Fishing/hiking activities
6. Mining
7. Degradation of state land
8. Undocumented fish habitat
9. Flood management
10. Enforcement

Montana Creek Watershed Stewardship Task Force - 1st Meeting March 21, 2013

Participants

Name	Affiliation	Email
1. Nina Horne	Executive Director Juneau Watershed Partnership	jwp@alaska.net
2. Jackie Ebert	Project Coordinator Juneau Watershed Partnership	jackie.jwp@gmail.com
3. Chuck Caldwell	Raincountry Fly Fishers	ceis@gci.net
4. John Hudson	US Fish & Wildlife Service	John_hudson@fws.gov
5. Erik Boraas	Trail Mix	erik@juneautrails.org
6. Brian Maupin	Southeast Soil and Water Conservation Dist.	bgmaupin4000@gmail.com
7. Brad Elfers	Trout Unlimited Juneau	brad@alaskaflyfishinggoods.com
8. Mark Kaelke	Trout Unlimited Juneau	mkaelke@tu.org
9. Doug Sanvik	Alaska Div. of Mining, Land & Water, DNR	doug.sanvik@alaska.gov
10. Teri Camery	CBJ Planning email update: teri.camery@juneau.org	Teri_camery@ci.juneau.ak.us
11. Mal Menzies	Juneau Gun Club	mmenzies@gci.net
12. Barbara Adams	Forest Service, Juneau Ranger District	bjadams@fs.fed.us
13. Jackie Timothy	ADF&G Habitat	Jackie.timothy@alaska.gov
14. Erich Schaal	CBJ Docks & Harbors	Erich_schaal@ci.juneau.ak.us email update: erich.schaal@juneau.org

Montana Creek Task Force Meeting Agenda

Meeting date: 27 May 2014

Meeting time: 2:00 PM – 4:00 PM

Meeting Location: Downtown Public Library, Large Meeting Room

Agenda Items

1. Introductions (~15 mins.)
2. Montana Creek Planning Strategy:
 - A. Threats – did we capture everything in the last meeting? (~15 mins.)

Threats identified in first meeting:

 - Urban Development
 - Motorized Use
 - Invasive Species
 - Suction Dredge Mining
 - Undocumented Fish Habitat
 - Illegal Trails
 - Stream Crossings
 - B. Threat – Current Management – Deficiencies in Management – Opportunities (~1 hr., 20 mins.)

As a group, we will discuss each of the identified threats in detail. We will go over current management strategies, deficiencies in those strategies and opportunities for improved management. We will not get through the whole list this meeting. We will organize additional meetings as needed.

3. Wrap-up

Montana Creek Task Force Meeting Minutes

Meeting Date: 27 May 2014

Meeting Time: 2:00 PM - 4:00 PM

Meeting Location: Downtown Public Library, Large Meeting Room

Present: (sign in sheet also attached)

Amy Sumner, Juneau Watershed Partnership (JWP) Board Chair

Mark Kaelke, Trout Unlimited

John Hudson, U.S. Fish and Wildlife Service

Barb Adams, U.S. Forest Service

Chuck Caldwell, Raincountry Fly Fishers

Gretchen Pikul, Alaska Dept. of Environmental Conservation

Dave Hanna, Community member and local contractor

Teri Camery, City and Borough of Juneau

Chrissy McNally, City and Borough of Juneau

Brian Maupin, Southeast Soil and Water Conservation District

A. Sumner, Board Chair, introduced herself to the group and had everyone introduce themselves. After introductions, Ms. Sumner apologized to the group for the lack in communication and coordination regarding the Task Force and the Montana Creek Stewardship Plan. She explained to the group that, over the last year, JWP had experienced staff turn-over and that the Plan had been extremely delayed. Ms. Sumner further explained that JWP currently does not have paid staff members and that she will now be coordinating the Planning process. Ms. Sumner, however, made it clear to the group that she is, unfortunately, just a Board member who is doing all of this work voluntarily, and she asked that the group be patient with her in this process.

Ms. Sumner told the group that her plan was to discuss the threats that were identified in the first meeting, back in March 2013. She had provided the group with a hand out that described the problem and current management structure for four of the seven identified threats: Urban Development, Motorized Use, Invasive Species and Suction Dredge Mining. Ms. Sumner posed to the group that they use this meeting to discuss the deficiencies in the current management structure and identify opportunities to improve the problem for these four threats, and organize another meeting to discuss the threats of Undocumented Fish Habitat, Illegal Trails and Stream Crossings.

Urban Development

In the discussion regarding Urban Development, the group identified these items of concern:

1. The 500 ft. stream corridor buffer proposed by Trout Unlimited has been implemented in the new CBJ Comprehensive Plan, but only applies to CBJ property. However, other

properties (JYS and University) have potential to have high effects on the watershed and should have buffers.

2. What are the terms of the conservation easement of the JYS property?
3. Specific sites/projects that are of concern are:
 - The Montana Creek home with the bridge is currently a fish barrier
 - Quarry on Coogan Property - concerns regarding the drainage and potential discharges into Montana Creek
 - Subdivision stormwater management during expansion
 - Stormwater management off of Back Loop Road
 - DOT ditch maintenance, specifically timing and techniques
 - Stream gauge needs replacing
4. Two developments exist within setback.
5. In the Wetland Management Plan update, CBJ is working with property owners to assess functions/values of wetlands on their property. Hoping to work with West Glacier Development and Coogan, both of which have property in Montana Creek.

In regards to Urban Development, the group made these recommendations:

1. In variances to the streamside setback on Montana Creek, standard conditions should be met to apply for the variance. Also, variances should require mitigation.
2. Improve stormwater management by requiring BMPs and improving DOT&PF's ditch cleaning practices
3. Have more planning efforts prior to development

Motorized Use

In the discussion regarding motorized use, the group identified these items of concern:

1. What are the effects of the gate on use?
2. Cost and community perceptions have prevented identification and development of a suitable ATV site
3. Lack of enforcement in Montana Creek
4. JPD cannot increase enforcement and they cannot get into the upper watershed.
5. Camera would not be effective because you cannot connect rider to a particular ATV due to lack of tags/plates
6. Regulatory signage regarding ATV use needs replacing but the signs always seem to be shot at or otherwise damaged. Does not seem to deter ATV users from crossing streams or riding where prohibited.
7. Likely that it is a few individuals that are causing the problem and not the ATV community as a whole.

In regards to motorized use, the group made these recommendations:

1. It is in the best interest of Montana Creek to have riders use other locations. The use of other locations should be encouraged.
2. Encourage Planning Commission to identify and develop an appropriate site.

3. Determine if there a way to assess user fees that can be used to fund development of a site
4. Assess ATV damage in the watershed and identify potential restoration sites
5. Standardize the ATV stream crossings through use of a General Permit granted by ADF&G

In addition, John Hudson agreed to send Ms. Sumner copies of the ATV maps that he has on file for Montana Creek.

Suction Dredge Mining

In the discussion regarding Suction Dredge Mining, the group identified these items of concern:

1. CBJ permits have no enforcement and only 30 - 40 percent file for permit
2. Is there any follow-up or monitoring to determine if the activity is truly minimal impact? (Note: someone added that ADF&G is good about flowing up with their Permittees in the field, but not sure if they conduct any monitoring)
3. What are the comprehensive/cumulative impacts from suction dredge mining?
4. This activity fluctuates with the price of gold.

In regards to suction dredge mining, the group made these recommendations:

1. CBJ can make permits and information regarding permitting easier to obtain; no concrete suggestions were given as to how this can be accomplished.
2. Identify non-fish streams that could be productive for suction dredge mining and redirect activities to these waterbodies

Invasive Plant Species

In the discussion regarding Invasive Plants, the group identified these items of concern:

1. Mountain Ash - out competes for pollinators because they have numerous blossoms
2. Orange Hawkweed – do not want this getting into undisturbed ecosystems
3. Rock snot (diatom) - not sure if it is present in Montana Creek; perhaps we should determine this?
4. ATVs are vectors – need outreach
5. There are a lot of invasive species in the vicinity of the community garden. The garden appears to be a source of invasive plants.

In regards to invasive species, the group made these recommendations:

1. There has already been a rapid response in Montana Creek - need to continue these efforts
2. Eradicated a knotweed patch and 30 infestations of reed canary grass.
3. There is a need for long term monitoring to keep Montana Creek in “prevention” mode
4. There is a need for more education about invasive plants and ways to prevent their spreading

At this point, there was still time left, and the group continued discussions on the remaining topics:

Undocumented Fish Habitat

In the discussion regarding Undocumented Fish Habitat, the group did not identify any concerns other than that there is undocumented/undescribed fish habitat.

In regards to the undocumented fish habitat, the group made these recommendations:

1. JWP or other non-profit group, or as a partnership, submit proposal to Sustainable Salmon Fund to map the undocumented habitat

Other concerns and recommendations regarding fish habitat in general included:

1. Identify perched culverts and crushed culverts preventing fish passage
2. Identify areas where fish habitat can be created

There was also discussion about replacing the Montana Creek bridge located at the end of Montana Creek Road. It was thought that there was funding available for a temporary bridge here but permitting became problematic so it was not pursued. Trout Unlimited had previously committed funds for the bridge replacement but decided to retract funds because they were concerned that the purpose for the replacement was more for road function rather than a fish habitat project. The Forest Service may have supplies to build a replacement bridge, but would have to confirm this. It was agreed that the best bridge structure for this location would be one that had a clear span across the creek (no pilings). It should also be built to support pedestrians and non-highway (off road) vehicles only. Everyone agreed it might be worth re-opening the discussion about replacing the bridge.

Illegal Motorized Vehicle Use

The group felt that illegal trails are primarily interrelated with motorized/ATV use-trails, not hiking trails. However, there was discussion regarding the trail system in Montana Creek, which needs improvements; in particular:

- Downstream of JYS, re-locate hiking trails away from the creek
- Improve trail upstream of Back Loop Rd.
- Improve trail connection to Auke Lake

Stream Crossings

Again the group consensus was that concerns regarding stream crossings are interrelated with motorized/ATV use, and they did not have any additional concerns or recommendations regarding this topic. The group consensus was that this topic had already been discussed and addressed.

Other Comments

It was pointed out that a well-field for a community drinking water supply near the community garden was identified 30 or so years ago. It was recommended that this be researched to

determine if this is still considered a viable drinking water source and, if so, make recommendations to protect it as such.

Meeting Wrap-up

Ms. Sumner asked if the group felt that there should be another follow-up meeting to continue discussing the topics of concern. The group consensus was that all topics were discussed and addressed, and preferred to have a draft Plan to review. Ms. Sumner committed to integrating this information and having a draft Plan to review by fall (September/October). She commented that everyone should read the handout and contact her if they felt information presented regarding their agency or the topic was erroneous, or if they had anything to add. Ms. Sumner told the group that this information is going to serve as the base for the Draft Plan.

Ms. Sumner added that she will schedule another meeting after the Draft Plan has been distributed so that the group can discuss any changes they would like to see. With that, Ms. Sumner thanked everyone for attending and the meeting was adjourned at 4:00PM.

APPENDIX B. Montana Creek Stewardship Plan
Public Survey

Appendix B. Montana Creek Stewardship Plan Public Survey

Montana Creek Stewardship Plan

About You and Your Relationship to Montana Creek

1. Where in Juneau do you live?

- Mendenhall Valley
- Downtown Juneau
- Out-the-Road
- Thane
- Douglas
- Switzer/Lemon Creek

2. What is your age?

- Younger than 18
- 18 to 24
- 25 to 34
- 35 to 44
- 45 to 54
- 55 to 64
- 65 to 74
- 75 or older

3. What is your gender?

- Female
- Male

4. I use the Montana Creek Watershed for (check all that apply):

- Fishing/Hunting
- Non-motorized recreation (hiking, biking, skiing, horseback riding)
- Motorized recreation (ATVs/OHV/s)
- I live in the Montana Creek watershed
- I work in the Montana Creek watershed
- I don't use the Montana Creek watershed

Next

Montana Creek Stewardship Plan

Your Perception of Montana Creek

5. Evaluate the following statements.

	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
Montana Creek is a healthy watershed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Montana Creek is at risk of becoming impaired (not meeting water quality standards)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Montana Creek is at risk of becoming over-developed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Montana Creek is important to me as a resident of Juneau	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Montana Creek is important to the community of Juneau	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Montana Creek Stewardship Plan

Watershed Values

6. Evaluate whether the following are benefits/values of the Montana Creek watershed.

	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
Land for development	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Resources such as timber and minerals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fishing/Hunting/Gathering	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fish and wildlife habitat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recreation opportunities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eco-tourism (guiding)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Undeveloped land	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. What do you perceive to be the greatest benefit/value to the Montana Creek watershed? This can be one of the benefits described above or one you identify.

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Montana Creek Stewardship Plan

Threats to Montana Creek

8. Evaluate whether the following are threats to Montana Creek's health

	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
Invasive species	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Urban development	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ATV use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recreational suction dredge mining	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. What do you perceive to be the biggest threat to Montana Creek? This can be one of the threats from the previous question or one that you identify.

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Final Thoughts

10. Anything you like to share about Montana Creek? This can be things you love about the watershed or concerns you have about its future. Thank you for participating in our survey!

Prev

Done

APPENDIX C. Montana Creek Stewardship Plan
Public Survey Data

Appendix c. Montana Creek Stewardship Plan Public Survey Responses

1. Response Summary. Screenshot from SurveyMonkey.



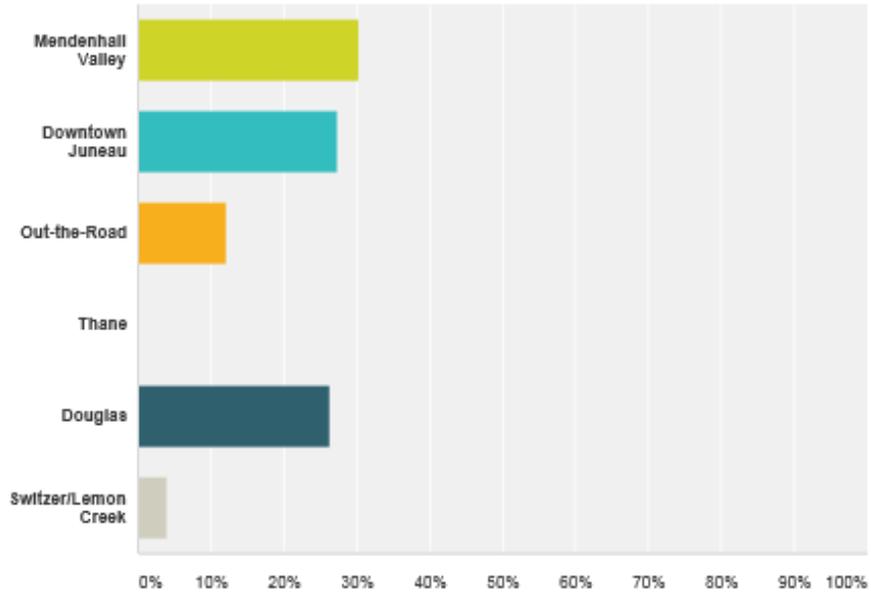
Q1

Customize

Export

Where in Juneau do you live?

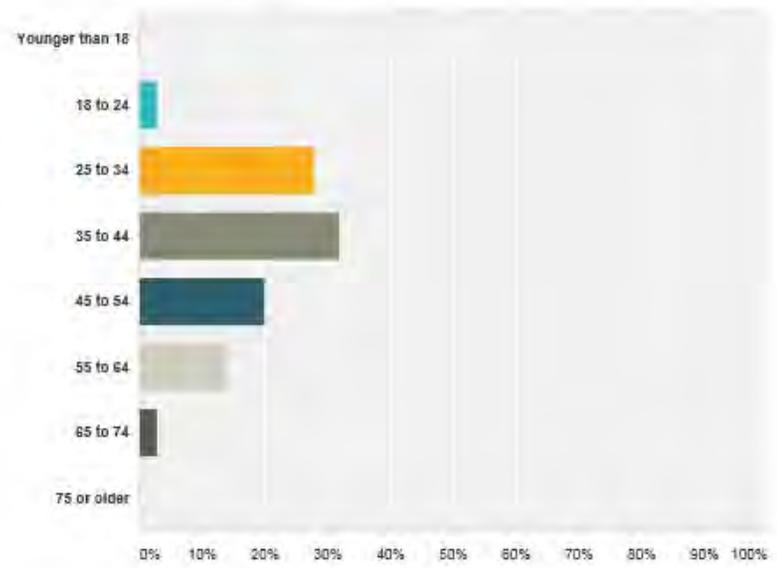
Answered: 99 Skipped: 1



Answer Choices	Responses
Mendenhall Valley	30.30% 30
Downtown Juneau	27.27% 27
Out-the-Road	12.12% 12
Thane	0.00% 0
Douglas	26.26% 26
Switzer/Lemon Creek	4.04% 4
Total	99

What is your age?

Answered: 100 Skipped: 0



Answer Choices	Responses
Younger than 18	0.00% 0
18 to 24	3.00% 3
25 to 34	28.00% 28
35 to 44	32.00% 32
45 to 54	20.00% 20
55 to 64	14.00% 14
65 to 74	3.00% 3
75 or older	0.00% 0
Total	100 100

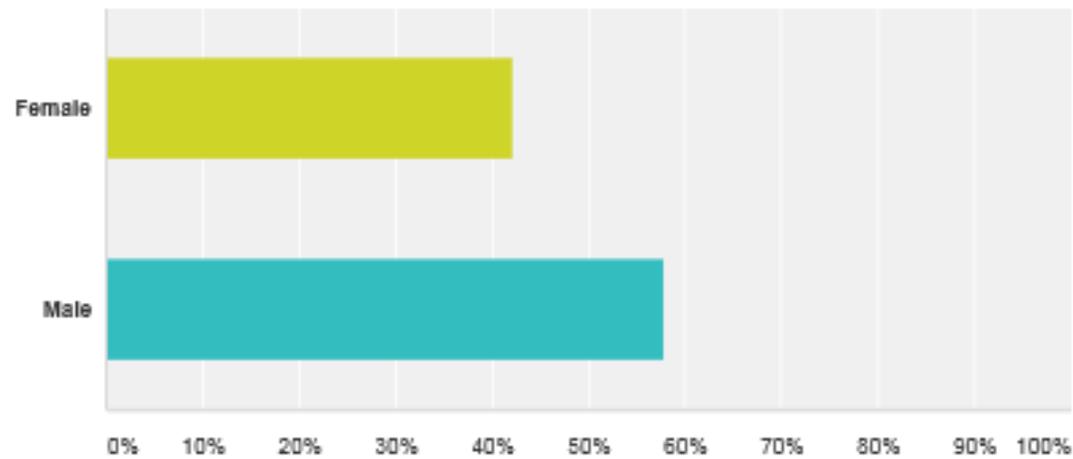
Q3

Customize

Export ▾

What is your gender?

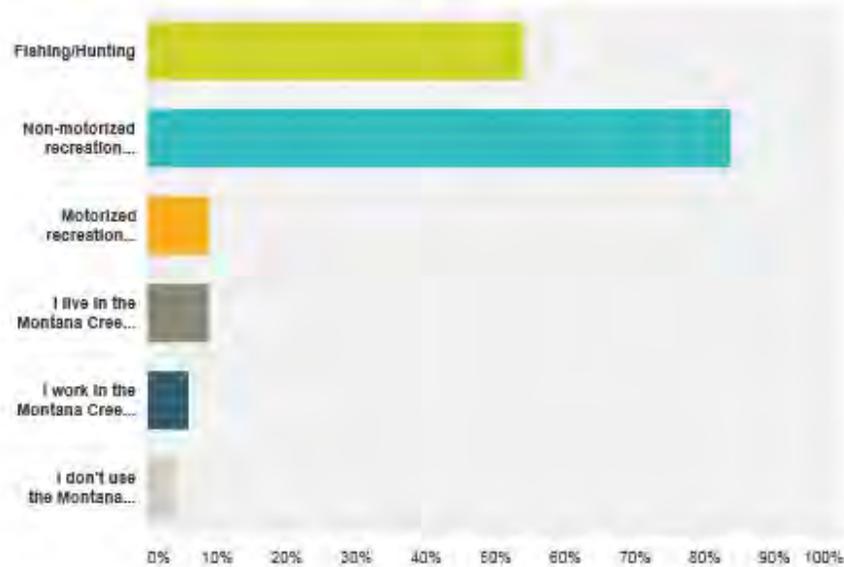
Answered: 97 Skipped: 3



Answer Choices	Responses
Female	42.27% 41
Male	57.73% 56
Total	97

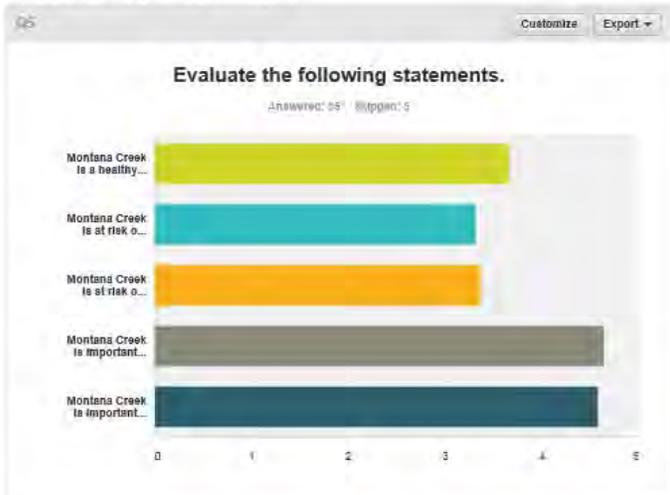
I use the Montana Creek Watershed for (check all that apply):

Answered: 100 Skipped: 0



Answer Choices	Responses
Fishing/Hunting	54.00% 54
Non-motorized recreation (hiking, biking, skiing, horseback riding)	84.00% 84
Motorized recreation (ATVs/OHVs)	9.00% 9
I live in the Montana Creek watershed	9.00% 9
I work in the Montana Creek watershed	6.00% 6
I don't use the Montana Creek watershed	4.00% 4

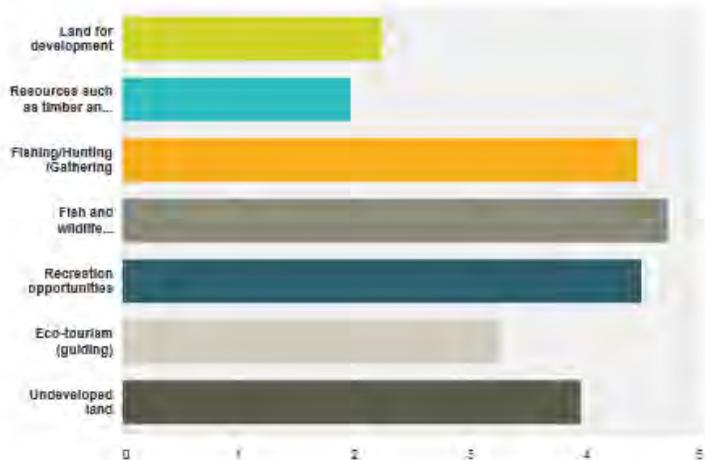
Total Respondents: 100



	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree	Total	Average Rating
Montana Creek is a healthy watershed	0.00% 0	10.53% 10	21.05% 20	60.00% 57	8.42% 8	95	3.66
Montana Creek is at risk of becoming impaired (not meeting water quality standards)	1.06% 1	15.36% 15	40.43% 38	35.11% 33	7.45% 7	94	3.52
Montana Creek is at risk of becoming over-developed	3.16% 3	15.79% 15	31.58% 30	40.00% 38	9.47% 9	95	3.57
Montana Creek is important to me as a resident of Juneau	0.00% 0	0.00% 0	3.19% 3	29.79% 28	67.02% 63	94	4.64
Montana Creek is important to the community of Juneau	0.00% 0	0.00% 0	4.21% 4	33.68% 32	62.11% 59	95	4.88

Evaluate whether the following are benefits/values of the Montana Creek watershed.

Answered: 93 Skipped: 0



	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree	Total	Average Rating
Land for development	29.03% 27	37.63% 35	15.05% 14	17.20% 16	1.08% 1	93	2.04
Resources such as timber and minerals	41.94% 39	35.53% 31	11.83% 11	11.83% 11	1.08% 1	93	1.97
Fishing/Hunting/Gathering	1.08% 1	0.00% 0	3.23% 3	44.09% 41	51.61% 48	93	4.45
Fish and wildlife habitat	0.00% 0	0.00% 0	2.15% 2	24.75% 23	73.12% 68	93	4.71
Recreation opportunities	0.00% 0	4.35% 4	3.26% 3	32.61% 30	59.78% 55	92	4.48
Eco-tourism (guiding)	11.96% 11	15.22% 14	21.74% 20	36.96% 34	14.13% 13	92	3.26
Undeveloped land	2.15% 2	7.53% 7	22.58% 21	27.56% 25	39.78% 37	93	3.36

What do you perceive to be the greatest benefit/value to the Montana Creek watershed? This can be one of the benefits described above or one you identify.

Answered: 71 Skipped: 29

1. a recreational area for locals to escape from the tourist
10/10/2014 5:13 PM [View respondent's answers](#)
2. Natural landscape
10/9/2014 7:48 PM [View respondent's answers](#)
3. Fish and wildlife habitat
10/9/2014 7:33 PM [View respondent's answers](#)
4. Recreation, non-motorized, eg skiing and biking, fishing
10/9/2014 4:08 PM [View respondent's answers](#)
5. Fishing, hiking, gathering berries
10/2/2014 10:15 AM [View respondent's answers](#)
6. fish habitat
10/1/2014 3:36 PM [View respondent's answers](#)
7. Fishing
10/1/2014 8:07 AM [View respondent's answers](#)
8. Undeveloped land
9/30/2014 6:47 AM [View respondent's answers](#)
9. Non-tourism impacted recreation
9/30/2014 1:22 AM [View respondent's answers](#)
10. Road system opportunity for flyfishing for trout and salmon. Easy access for cross country skiing, in motorized biking, and hiking.
9/29/2014 10:30 PM [View respondent's answers](#)
11. Recreation/wildlife habitat
9/29/2014 9:26 PM [View respondent's answers](#)
12. Nearby, high quality fishing, walking, and skiing
9/29/2014 8:55 PM [View respondent's answers](#)
13. Hiking, Biking trail
9/29/2014 8:30 PM [View respondent's answers](#)
14. Undeveloped land
9/29/2014 11:40 AM [View respondent's answers](#)
15. Healthy habitat
9/29/2014 10:07 AM [View respondent's answers](#)

16. Fishing/beauty
9/29/2014 9:43 AM View respondent's answers
17. Great location to live in and have a fantastic Forrest playground in your back yard.
9/29/2014 9:29 AM View respondent's answers
18. Recreation
9/29/2014 8:30 AM View respondent's answers
19. fish and wildlife habitat
9/29/2014 7:53 AM View respondent's answers
20. Recreation.
9/28/2014 9:10 AM View respondent's answers
21. fish and wildlife habitat
9/28/2014 9:07 AM View respondent's answers
22. It is an excellent local flyfishing option
9/28/2014 8:52 AM View respondent's answers
23. wildlife corridor
9/27/2014 9:13 PM View respondent's answers
24. Fish and wildlife habitat
9/27/2014 6:19 PM View respondent's answers
25. Open space w good trails near town
9/27/2014 1:31 PM View respondent's answers
26. Fish and wildlife habitat
9/27/2014 12:44 PM View respondent's answers
27. Habitat it provides for all organisms, subsistence, rec.
9/27/2014 10:11 AM View respondent's answers
28. Relatively healthy fish spawning habitat
9/27/2014 9:51 AM View respondent's answers
29. Fish
9/27/2014 9:47 AM View respondent's answers
30. Nature
9/27/2014 9:25 AM View respondent's answers
31. non-motorized recreation (Mtn biking).
9/27/2014 9:07 AM View respondent's answers
32. Non-motorized recreation
9/27/2014 9:06 AM View respondent's answers
33. Being as that it is Juneau's only designated atv area, I think there should be some focus to expand the existing area of use with with either a trail to the west up the hillside or a bridge and a trail to the east over the creek to give our growing atv population more places to play.
9/27/2014 9:05 AM View respondent's answers
34. Green space
9/27/2014 8:58 AM View respondent's answers
35. fresh water source
9/27/2014 8:50 AM View respondent's answers

36. access to a wild & beautiful area
9/27/2014 8:30 AM View respondent's answers

37. Recreation
9/27/2014 5:50 AM View respondent's answers

38. clean water
9/26/2014 11:08 PM View respondent's answers

39. Outdoor recreation
9/26/2014 6:15 PM View respondent's answers

40. proper management
9/26/2014 12:00 PM View respondent's answers

41. Fish and Wildlife habitat
9/26/2014 10:17 AM View respondent's answers

42. Fishing
9/26/2014 10:08 AM View respondent's answers

43. Fishing
9/26/2014 10:05 AM View respondent's answers

44. Habitat and low-impact recreation
9/26/2014 7:05 AM View respondent's answers

45. rec opd
9/25/2014 8:36 PM View respondent's answers

46. development is ok in areas not everywhere bicknell is pushing the limits. I wouldnt want houses past coogans lot on Montana Creek Rd
9/25/2014 8:46 AM View respondent's answers

47. Recreation
9/25/2014 7:13 AM View respondent's answers

48. Fish habitat and the ecosystem of the area
9/24/2014 11:16 PM View respondent's answers

49. recreation and natural resources
9/24/2014 4:05 PM View respondent's answers

50. Recreation Oppourtunities
9/24/2014 12:10 PM View respondent's answers

51. responsible development
9/24/2014 8:34 AM View respondent's answers

52. Montana Creek is an important ecosystem to Juneau. It should be valued as such. It's really sad to see the destructive evidence of ATV use, in stream suction dredge mining in the creek.
9/24/2014 7:20 AM View respondent's answers

53. Healthy fish & wildlife habitat
9/24/2014 7:06 AM View respondent's answers

54. another beautiful jnu area
9/24/2014 6:29 AM View respondent's answers

55. habitat for indigenous flora fauna.
9/23/2014 10:48 PM View respondent's answers

56. Fish habitat, recreation, beauty
9/23/2014 10:38 PM [View respondent's answers](#)
57. Supporting healthy salmon runs.
9/23/2014 9:50 PM [View respondent's answers](#)
58. development and sustainable resource use can coexist
9/23/2014 9:47 PM [View respondent's answers](#)
59. Recreation
9/23/2014 9:45 PM [View respondent's answers](#)
60. A multi-species fishery that is accessible
9/23/2014 9:40 PM [View respondent's answers](#)
61. Fishing
9/23/2014 9:23 PM [View respondent's answers](#)
62. healthy, wild fishery in an urban setting
9/23/2014 8:59 PM [View respondent's answers](#)
63. Fish and wildlife habitat
9/23/2014 8:44 PM [View respondent's answers](#)
64. "Urban wilderness" - the ability to be so close to town, yet so far away
9/23/2014 8:23 PM [View respondent's answers](#)
65. vsalmon habitat & productivity
9/23/2014 8:09 PM [View respondent's answers](#)
66. Cross country skiing
9/23/2014 8:05 PM [View respondent's answers](#)
67. salmon
9/23/2014 7:38 PM [View respondent's answers](#)
68. recreation area
9/23/2014 7:37 PM [View respondent's answers](#)
69. Connection of people with a wild healthy watershed - and building awareness of responsibility to protect watersheds.
9/23/2014 7:31 PM [View respondent's answers](#)
70. Healthy and active Juneau living
9/23/2014 7:21 PM [View respondent's answers](#)
71. Fish habitat
9/23/2014 7:20 PM [View respondent's answers](#)



	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree	Total	Average Rating
Invasive species	4.35% 4	6.52% 6	34.78% 32	45.65% 42	8.70% 8	92	3.48
Urban development	2.17% 2	4.35% 4	16.30% 15	55.43% 51	21.74% 20	92	3.90
ATV use	3.26% 3	6.52% 6	11.96% 11	32.61% 30	45.65% 42	92	4.11
Recreational suction dredge mining	2.17% 2	5.43% 5	21.74% 20	34.78% 32	35.87% 33	92	3.97

What do you perceive to be the biggest threat to Montana Creek? This can be one of the threats from the previous question or one that you identify.

Answered: 62 Skipped: 38

1. development
10/10/2014 5:13 PM [View respondent's answers](#)
2. Over preservation
10/9/2014 7:49 PM [View respondent's answers](#)
3. Currently ATV use, future: development
10/9/2014 4:16 PM [View respondent's answers](#)
4. Jackie Timothy. Seems like she'll permit anything without considering the consequences to the salmon
10/2/2014 10:16 AM [View respondent's answers](#)
5. dredge mining
10/1/2014 3:36 PM [View respondent's answers](#)
6. Definitely ATV use! I have seen incredible stream degradation from ATVs
10/1/2014 11:45 AM [View respondent's answers](#)
7. Urban development
9/30/2014 6:47 AM [View respondent's answers](#)
8. Dredge mining and littering
9/30/2014 1:23 AM [View respondent's answers](#)
9. Atv, suction dredging, over use
9/29/2014 10:32 PM [View respondent's answers](#)
10. Urban development
9/29/2014 8:55 PM [View respondent's answers](#)
11. Overuse, irresponsible use
9/29/2014 8:31 PM [View respondent's answers](#)
12. Urban development
9/29/2014 11:42 AM [View respondent's answers](#)
13. People
9/29/2014 10:07 AM [View respondent's answers](#)
14. suction dredge mining
9/29/2014 9:44 AM [View respondent's answers](#)
15. Tourist overload

9/29/2014 9:30 AM View respondent's answers

16. suction dredging

9/29/2014 8:58 AM View respondent's answers

17. urban development

9/29/2014 7:54 AM View respondent's answers

18. ATV use, and ATV use contributing to the spread of invasive species

9/28/2014 9:07 AM View respondent's answers

19. Urban development

9/28/2014 8:53 AM View respondent's answers

20. development

9/27/2014 9:14 PM View respondent's answers

21. Recreational suction dredge mining

9/27/2014 6:21 PM View respondent's answers

22. People

9/27/2014 12:45 PM View respondent's answers

23. Odds are good that recreational miners are driving ATVs that could easily be infested w/invasive species...generally speaking I'd say there's a disconnect between desire to preserve wild character of Montana Creek and destructive activities such as mining and ATV riding. Unbridled mountain bike riding can be destructive too.

9/27/2014 10:14 AM View respondent's answers

24. Development-residential and resource extraction

9/27/2014 9:51 AM View respondent's answers

25. Development

9/27/2014 9:26 AM View respondent's answers

26. development

9/27/2014 9:08 AM View respondent's answers

27. Over protection, we don't need to make alaska like California, "look, but don't touch!"

9/27/2014 9:07 AM View respondent's answers

28. Motorized recreation

9/27/2014 9:07 AM View respondent's answers

29. Depends on user group...

9/27/2014 8:59 AM View respondent's answers

30. litterbugs

9/27/2014 8:53 AM View respondent's answers

31. Overfishing due to close proximity to large residential population.

9/26/2014 6:18 PM View respondent's answers

32. Jokulhlaups

9/26/2014 12:02 PM View respondent's answers

33. ATV

9/26/2014 10:09 AM View respondent's answers

34. Threats to the health of the habitat/ecosystem

9/26/2014 9:39 AM View respondent's answers

35. Damaging uses like suction dredging and ATVs

9/26/2014 7:06 AM View respondent's answers

36. garbage dumping

9/25/2014 8:37 PM View respondent's answers

37. catering to one group needs over others

9/25/2014 9:18 AM View respondent's answers

38. ATV use

9/25/2014 7:14 AM View respondent's answers

39. Gravel extraction and mining

9/24/2014 11:18 PM View respondent's answers

40. development and mis-use by the public who deplete/pollute the watershed

9/24/2014 4:07 PM View respondent's answers

41. Urban Development

9/24/2014 12:12 PM View respondent's answers

42. radical environmentalist whacks are the biggest threat

9/24/2014 8:35 AM View respondent's answers

43. Currently ATV & Mining

9/24/2014 7:22 AM View respondent's answers

44. Development that does not compensate for damage to habitat

9/24/2014 7:07 AM View respondent's answers

45. unplanned development

9/24/2014 6:30 AM View respondent's answers

46. 'development at any cost' attitude of good old boys in charge at city hall

9/23/2014 10:50 PM View respondent's answers

47. Insufficient protective setbacks

9/23/2014 10:39 PM View respondent's answers

48. Illegal motorized use in wetlands and anadromous streams.

9/23/2014 9:51 PM View respondent's answers

49. i dont think montana creek is threatened

9/23/2014 9:48 PM View respondent's answers

50. ATVs and dumping

9/23/2014 9:46 PM View respondent's answers

51. ATV use in the stream bed

9/23/2014 9:41 PM View respondent's answers

52. Urban development

9/23/2014 9:24 PM View respondent's answers

53. motorized use and associated impacts coupled with ADFG Habitat Division's utter incompetence

9/23/2014 9:00 PM View respondent's answers

54. Development

9/23/2014 8:45 PM View respondent's answers

55. Disregard for fish habitat and spawning/rearing areas, degradation of riparian habitat

9/23/2014 8:24 PM View respondent's answers

56. development pressures

9/23/2014 8:10 PM View respondent's answers

57. I don't know of any. I only use it in the winter.

9/23/2014 8:05 PM View respondent's answers

58. Dredge mining

9/23/2014 7:41 PM View respondent's answers

59. atbs

9/23/2014 7:37 PM View respondent's answers

60. No single biggest, cumulative impacts of a thousand cuts.

9/23/2014 7:32 PM View respondent's answers

61. Recreational mining?

9/23/2014 7:22 PM View respondent's answers

62. Garbage and debris!

9/23/2014 7:20 PM View respondent's answers

Q10 Export ▾

Anything you like to share about Montana Creek? This can be things you love about the watershed or concerns you have about its future. Thank you for participating in our survey!

Answered: 41 Skipped: 59

1. montana creek is a great place to catch a few fish after work without the crowds

10/10/2014 5:15 PM View respondent's answers

2. Montana creek and adjacent areas are beautiful. I'm ok with development near m c with buffers for fish and ensuring water quality is maintained.

10/9/2014 7:51 PM View respondent's answers

3. Like the groomed ski trails. Like it better non-motorized. Gold dredging harmful to spawning salmon yet it seems to be allowed despite the warnings about harm from ATV use affecting salmon spawning -surely repeated gold dredging/panning is just as if not more harmful.

10/9/2014 7:35 PM [View respondent's answers](#)

4. Illegal dumping and anthropogenic debris in lower sections of the creek concern me. Motorized use and ATV users are damaging riparian areas and littering, building illegal structures, mining and hunting without respect for the law, the environment, or other users. Very disgusted by the damage they have done throughout the watershed. Thanks for giving us the opportunity to comment.

10/9/2014 4:21 PM [View respondent's answers](#)

5. We're told there are no steelhead that use the creek... Wonder what that small "rainbow" was that I caught last week. Wasn't a cutthroat!

10/2/2014 10:18 AM [View respondent's answers](#)

6. Let's keep it wild for future generations!

9/30/2014 6:48 AM [View respondent's answers](#)

7. Beautiful archery range!

9/30/2014 1:23 AM [View respondent's answers](#)

8. The canyon section is a unique feature on our road system and should be kept as pristine as possible.

9/29/2014 10:34 PM [View respondent's answers](#)

9. I love hiking and fishing in this creek and seeing bears enjoy its salmon and deer browse near it. I'm very concerned about sedimentation due to ATV use and gold dredging along the creek.

9/29/2014 9:28 PM [View respondent's answers](#)

10. Please continue to advocate for this watershed.

9/29/2014 8:56 PM [View respondent's answers](#)

11. Pretty creek, too bad trout don't live in it year round.

9/29/2014 9:44 AM [View respondent's answers](#)

12. Correct drainage to preserve the land and history of the Montana creek area

9/29/2014 9:31 AM [View respondent's answers](#)

13. It is a great wildlife corridor.

9/29/2014 7:55 AM [View respondent's answers](#)

14. The city and community organizations need to do everything possible to protect this valuable ecosystem while it is still intact and healthy--NOT to wait until it is impaired and costly to restore.

9/28/2014 9:08 AM [View respondent's answers](#)

15. It would not take much to destroy the place, so protecting habitat and prohibiting urban development along the river needs to be a priority of everyone who values Montana Creek as a fishery/recreational area.

9/28/2014 8:57 AM [View respondent's answers](#)

16. curtil illegal dumping

9/27/2014 9:14 PM [View respondent's answers](#)

17. I would like to see that it pretty much stays the same, have been here 38 years.

9/27/2014 6:22 PM [View respondent's answers](#)

18. How can we, as a community, stop the formation/spread of the garbage pit at the end of the road/beginning of trail???

9/27/2014 10:14 AM [View respondent's answers](#)

19. I love the new gate and think it has helped a lot to keep down the vandalism at the trailhead. XC ski trail grooming in winter is another great improvement. Trail work to improve upper trail to Windfall Lake would further improve things. Thanks!
9/27/2014 9:53 AM [View respondent's answers](#)
20. Think of ways to expand use to the area, without effecting the watershed. Maybe make the trails a bit further from the creek itself(to contain erosion issues), the whole basin behind McGinnis is a very useable zone, let's make more access!
9/27/2014 9:09 AM [View respondent's answers](#)
21. I like to prospect for gold. I'm concerned about sport fishermen preventing me from doing that. It is there for everyone!
9/27/2014 8:55 AM [View respondent's answers](#)
22. I use this area recreationally in all seasons. I love that we have this unique area accessible to all of us by foot, bike, ski or snow shoes!
9/27/2014 8:32 AM [View respondent's answers](#)
23. I really like spending time at Montana Creek and hope that it is being properly maintained!
9/26/2014 12:03 PM [View respondent's answers](#)
24. Montana Creek is an important watershed as fish habitat, and an important recreation area, and should be kept free of motorized vehicle use and development!
9/26/2014 9:40 AM [View respondent's answers](#)
25. the placement of the new gate near the gun range is the worst place it could be located. could have been moved to the conex boxes
9/25/2014 9:36 AM [View respondent's answers](#)
26. The trail head looks better than it did in the past. Thank you for doing the survey.
9/25/2014 7:14 AM [View respondent's answers](#)
27. It is the only stream in the urban area that hasn't been over developed. It should be preserved through large development setbacks.
9/24/2014 11:20 PM [View respondent's answers](#)
28. Montana Creek is one fantastic asset to this community that makes living in Juneau that much more special.
9/24/2014 6:11 PM [View respondent's answers](#)
29. I love to hike and fish there. I think the City should do more to fight invasive plants and protect Montana Creek.
9/24/2014 12:13 PM [View respondent's answers](#)
30. The ADFG Sport Fish is clueless to the serious harvesting impact that takes place the first three weeks in September. We need to monitor this harvest because Sport Fish will not! A mailer is not the way to determine impact. If I used that approach in my college population bio class I would have been laughed out of college. Clearly Dan and Sport Fish are more cerebral than that.
9/24/2014 6:15 AM [View respondent's answers](#)
31. Montana creek road should be blocked off well before it gets to the creek. Also, it should be managed for fish and game and habitat preservation.. There is enough gold all ready mined to take care of all practical needs gold mining is not necessary.
9/23/2014 10:56 PM [View respondent's answers](#)
32. I support a wide protective corridor along Montana Creek. All creeks don't need this, but Montana Creek does to maintain it's uses and values.
9/23/2014 10:40 PM [View respondent's answers](#)
33. The montana creek watershed is great for trail running too! Also you shouldn't group together hunting and fishing that isnt realistic.
9/23/2014 9:50 PM [View respondent's answers](#)
34. Beautiful river.
9/23/2014 8:45 PM [View respondent's answers](#)

35. I spend 20-30 days a year in Montana creek from the mouth up past the McGinnis forks...it is a special area and a changing area that needs to have close attention paid to it. With its proximity to the population center of Juneau and relative ease of access, we as people have the ability to greatly alter the landscape of this creek, most often in a negative fashion.

9/23/2014 8:29 PM [View respondent's answers](#)

36. Erik Norberg is just darn dreamy.

9/23/2014 8:06 PM [View respondent's answers](#)

37. Seems that Montana creek trail head has always had the most trash left behind than any other trail head in Juneau.

9/23/2014 7:55 PM [View respondent's answers](#)

38. I love Montana Creek and the wild runs of salmon and trout in the area and hope that they continue to years to come.

9/23/2014 7:42 PM [View respondent's answers](#)

39. I watch Montana Creek stream gauge whenever big events, I watch the clarity and wonder what happened upstream when muddy. The life and health of Montana Creek is important to me.

9/23/2014 7:33 PM [View respondent's answers](#)

40. With the way other less visited places in Juneau have been targeted, I'm worried about the heroine junkies throwing their needles along the road and parking areas.

9/23/2014 7:25 PM [View respondent's answers](#)

41. I love Montana creek!

9/23/2014 7:20 PM [View respondent's answers](#)