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CHAPTER 4 - ENVIRONMENTAL CONSEQUENCES

The Environmental Consequences chapter forms the scientific and analytic basis for the “Comparison of Effects” presented in Chapter 2. This chapter presents the predicted effects of all the alternatives, focusing on the issues listed in Chapter 1. This discussion should include:

- ◆ Direct, indirect, and cumulative effects of all the alternatives, including the No Action alternative;
- ◆ Adverse environmental effects that cannot be avoided;
- ◆ Irreversible and irretrievable commitment of resources that would be involved if any of the alternatives were implemented.

Effects Common to All Alternatives

Wilderness Values

Under all Alternatives, the Frank Church–River of No Return Wilderness (FC–RONRW) will continue to remain an area of undeveloped land, sufficient in size to preserve it in an unimpaired condition. Wilderness management will continue to emphasize natural conditions and the landscape will remain primarily affected by the forces of nature. This meets key criteria for defining Wilderness.

The FC–RONRW will continue to provide out-standing opportunities for solitude, primitive experiences and unconfined recreation. This condition meets key criteria for defining Wilderness. Special provisions legislated for the Wilderness will provide opportunities for wilderness aviation access and jetboat use on the Salmon River that result in very unique recreational experiences for a Wilderness and Wild River setting. This meets direction in the CIWA. However, because each alternative addresses aspects of aviation, recreational jetboating, and river floating, which in turn could influence the recreational purposes of Wilderness, you should refer to the Aviation, ROS, Float boating and Jetboating sections of each Alternative for specific effects to recreation.

None of the alternatives propose actions, which would affect the overall scenic attributes of the FC–RONR. This meets the scenic purpose of Wilderness. Some alternatives however could result in localized trends regarding the condition and naturalness of campsites within the Wild River corridors, which in turn may have a localized impact on scenery over the long-term. For a discussion on effects to this aspect of scenic attributes see the effects sections for the Middle Fork and Salmon Rivers.

Education, scientific and conservation purposes for Wilderness, with one exception, will not be affected by any of the Alternatives. Opportunities to study and learn about wilderness systems that are ecosystem in size will continue to be a unique opportunity within the FC–RONRW. The education, scientific and conservation purpose of wilderness will continue to be met in the FC–RONRW.

The exception mentioned above relates to the scientific study of historical use of the FC–RONR Wilderness. Some Alternatives result in greater opportunity to protect cultural values than other

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alternatives and some alternatives would present a greater threat to protection of some cultural sites. To the extent that the number of cultural sites available for scientific study could be affected by Alternative you should refer to the Cultural Resources Effects section to see how cultural values on those sites may be affected.

Wild and Scenic Rivers - Outstandingly Remarkable Values

Both the Salmon and the Middle Fork rivers have been evaluated for outstandingly remarkable values and the resource assessments contain definitive statements of values intended to be protected by the designation of W&SRs (Stauffer 2000). These values include scenery, recreation, geology, fish, water quality, wildlife, vegetation/botanical resources, pre-historic, historic, and traditional and cultural use on both rivers. (See Appendix D – Wild and Scenic Rivers Outstandingly Remarkable Values.)

There are no proposed actions in any of the alternatives that would have any effect on the highly diverse scenery, the geologic features, fish species or their habitat, water quality, wildlife, vegetation, or traditional and cultural uses within the Salmon or Middle Fork Wild River corridors. Therefore, these values of the rivers would continue to be protected and enhanced.

Alternatives A, B, D, and E contain no proposed actions that would have any significant effects on the ORV of recreation, therefore, in these four alternatives this value of the Salmon River would continue to be protected and enhanced.

See Alternative C, Salmon River Float Boating, Recreation Opportunity Spectrum for effects related to a significant shift in the type of recreation emphasis contained within that alternative.

See the Cultural Resource section for effects on cultural resources within the Salmon and Middle Fork Wild River corridors. Although there are some effects predicted for historic resources, the new standards and guidelines (Appendix H - Programmatic Agreement) as designed and implemented would protect the historic and pre-historic values of the rivers.

Human Uses

Aviation

Alternative A - Aviation

The four landing strips (Dewey Moore, Mile-Hi, Simonds, and Vines) would continue to be recognized as emergency use only landing strips. Regular routine aviation use would not be permitted. It is expected for the short term (1-5 years), there would be some level of unauthorized use and maintenance at each of the landing strips.

The Forest Service would continue its policy of not maintaining these landing strips. It is expected that within 10-20 years, these four strips would become unserviceable, even for high performance, short take off and landing equipped planes. In the long term (50+ years), even

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emergency landings would be difficult because the surrounding vegetation would have encroached and reduced the size of the openings.

Alternative B- Aviation

The effects are the same as Alternative A.

Alternative C- Aviation

This alternative would provide for maintenance on all four of the landing strips to a serviceable level. The deteriorated surface conditions would be improved and woody vegetation would be removed. The improved landing conditions would be similar to the other landing strips that the Forest Service maintains in the FC-RONRW. In the short term (1-2 years), use would remain essentially the same as current. As the word spreads that these landing strips are being maintained, it is expected that use would gradually increase, including pilots who are testing their skills at challenging backcountry landing strips. In addition, less skilled pilots or trainees may try landing at these areas because they could be perceived as “not as difficult” due to the routine maintenance and as a good opportunity to improve their backcountry aviation skills.

In addition to the increase in landings and take offs, overnight camping is expected to increase at these areas. As the overnight camping areas become “established” user created fire rings and “cat-holes” would become visible along the edge of the landing area and in the adjacent wooded areas. As use increases there would be potential for more conflicts between aviation users, stock users, and hikers.

Alternative D- Aviation

The Forest Service would maintain the Dewey Moore, Mile-Hi, Simonds, and Vines landing strips in a condition that would be suitable for emergency landings. This minimal maintenance would result in a slight improvement to the surface condition of the landing areas and the removal of any woody vegetation that would impede an aircraft in landing. In the short term, 1-5 years, it is expected that unauthorized use would be about the same as Alternative A, relatively low.

As the word spreads among the aviation user groups that these landing strips are receiving minimal maintenance, use is expected to slightly increase above the existing level. The landing strips would still be considered challenging backcountry landing strips, which would attract skilled pilots who are looking for challenging landing strips to test their skills. As a result more law enforcement action would be taken until enforcement and education regarding the emergency use only status was successful in limiting non-emergency use.

Alternative E- Aviation

The effects are the same as Alternative C.

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Cumulative Effects - Aviation

The cumulative effects analysis area for Dewey Moore, Mile-Hi, Simonds, and Vines landing strips is each of the landing areas. Any past or present management activities within the cumulative effects analysis area have already been included in the effects analysis for these four landing strips. Maintenance on the four landing strips under Alternatives A, B and D would be minimal and consist mostly of removing/cutting woody vegetation out of the landing strips. There would be minimal soil disturbance. Therefore, there would be no cumulative effect of increasing seedbeds for noxious weeds and creating additional areas that would need to be treated.

Alternative C and E would maintain the landing strips in a serviceable condition. The initial maintenance operations to bring the landing strips up to a serviceable level would require ground-disturbing activities to improve the ground surface for landings. The disturbed areas would provide seedbeds for noxious weeds. This could increase the number of acres that would need to be inventoried and treated if noxious weeds become evident. However, all four of the landing areas are small in comparison with the FC-RONRW. The cumulative effect of adding these areas to the list of areas to be inventoried would be a minimal to no cumulative effect to the weed program.

ROS Setting

Effects Common to all Alternatives

Access

The current mix of modes and means of access does not vary by alternative. The current road system surrounding and providing access to the wilderness and river corridors would remain unchanged with the single exception of the Painter Bar Road. The effects associated with the different management options for the Painter Bar Road are discussed under each alternative.

Remoteness

Remoteness directly relates to the access criterion above and is an indication of distance from the sight and sound of humans. The criterion used for mapping remoteness is simply a set distance of one-half to three miles from various kinds of motorized use and motorized access. Since access does not change by alternative, neither would remoteness.

Naturalness

The only effects to naturalness are generally related to the existence and management of structures. Since there are no proposed actions in any of the alternatives related to the addition

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of new or the elimination of existing structures, there would be no effects to naturalness related to this analysis.

Facility and Site Management

There are no proposed actions in any of the alternatives that would result in the addition of new structures or the removal of existing structures from the current situation as described in Chapter 3.

Visitor Impacts

The eight existing campsites that are in Frissell Condition Class V and are within the two river corridors would become priority areas for management actions. The intent of the management actions would be to restore these sites to more natural conditions, while continuing to allow human use to the maximum extent practicable. There are no significant effects from the four percent of inventoried river campsites that are in Frissell Condition Class V.

PAOT Capacity

Under each alternative, a PAOT capacity number that is most appropriate for a given ROS class is displayed, followed by the PAOT capacity number that would be allowed by the alternative.

Other than Alternative B, which drastically reduces current use levels, all other alternatives would allow a PAOT capacity that ranges from four to six times the PAOT guideline in the Middle Fork corridor and two and a half to six times the PAOT guideline in the Salmon River corridor.

The higher PAOT numbers are the direct result of substantially larger party sizes, up to 30 on each river, than would normally be expected in a wilderness setting. Even though the number of encounters with other parties are generally met, with the exception of Alternative C on the Salmon River, the effects of these large parties on encounters are that when you see them, you will see more boats and more people per encounter.

The existing situation of feelings and perceptions of congestion and crowding will continue in all alternatives, except Alternative B, in both river corridors. Large parties will continue to cause point conflicts at major attractions such as launch sites, hot springs, rapids, archeological, and historic sites.

Float boating

Middle Fork - Float Boating

Alternative A - Middle Fork

Recreation Opportunity Spectrum

Social Encounters

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Six or fewer other parties per day encountered on the river and three or fewer other parties visible from campsites are considered the acceptable range for primitive ROS class. At seven launches per day, visitors are reporting seeing about five other parties per day. There are no campsites on the Middle Fork where more than three other campsites are visible. Therefore, encounter levels are within both encounter criteria for a primitive experience.

Visitor Management

Due to the impending need to install low-key signing at campsites that contain significant cultural resource, this criterion would slightly exceed primitive and would approach semi-primitive non-motorized where on-site regimentation and controls are present but subtle. Due to the small number of signs that would be required in the 96-mile long segment, this inconsistency would not warrant reclassification of the river corridor from its current primitive classification.

PAOT Capacity

The PAOT capacity for a primitive setting in the Middle Fork river corridor is about 290 people. The maximum of 1680 under Alternative A exceeds this level by almost 6 times, making it difficult to maintain the primitive setting.

Opportunities to Engage in Floating

Figure 4.1 shows projected growth for Middle Fork, year round, based on continued implementation of the current Wilderness and Middle Fork Plans. In the current situation, at a level of 7 launches per day (4 noncommercial and 3 commercial) noncommercial floaters have about a 1 in 23 chance of being successful in the lottery for a permit during the summer season. Commercial clients are generally able to obtain a seat although at peak use times it may not be with their first choice outfitter.

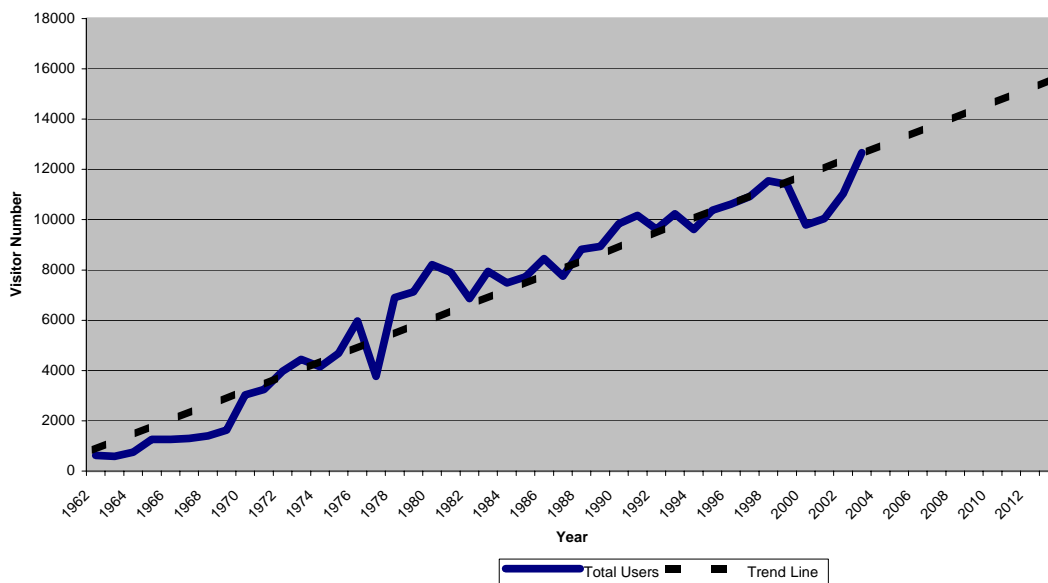
During spring and fall, both noncommercial and commercial opportunities are available, though weather and water levels often preclude preferred dates.

Winter use is virtually non-existent.

Currently the maximum length of stay is eight days. Noncommercial trips stay an average of seven days; commercial trips stay an average of six days. Also, currently noncommercial parties average 11 people and commercial trips average 23 people.

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Figure 4.1 MIDDLE FORK SALMON RIVER - HISTORICAL USE - 1962-2002
Alternative A - PROJECTIONS 2003-2012



Campsite Capacity

Condition and Trend

As use continues to grow, campsites will receive more and more use with resulting deterioration, which will lead to implementation of the stepwise program of mitigation measures for cultural resource protection (Appendix K – Historic Properties Mitigation).

Number of camps needed by water level

Current use on the Middle Fork is not exceeding the number of camps needed at any water level. However, it does approach capacity during the peak use period. Campsite capacity and the assignment of campsites to float parties is currently working because, on average, the noncommercial party size is small, actual length of stay for both commercial and noncommercial parties is closer to six days rather than the eight days allowed, and in some cases large camps are being shared by two parties.

The current assigned campsite system would continue to be used for float parties. As the average group size and/or the average number of launches per day increases over present levels toward the maximum allowed, competition for campsites would increase. There are not enough campsites to accommodate the maximum currently allowed by the plan.

Number of Permits by Commercial and Noncommercial

This is the maximum potential number of float permits to be made available as a base allocation, to the commercial and noncommercial sectors, and ignoring the potential for re-issuing

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cancellations or no fills to either sector. As it is the base allocation, it does not account for adjustments between sectors in the future based on actual use.

There would be 330 commercial launches, 440 noncommercial launches, and 1785 launches that are first come, first serve, for a total of 2555 permits issued year round.

Alternative B - Middle Fork

Recreation Opportunity Spectrum

Social Encounters

At four launches per day, encounter levels would be well within both encounter criteria for a primitive experience.

Visitor Management

The ROS criteria for visitor management at the primitive setting are that on-site regimentation is low and that controls are primarily off-site. These criteria would be met due to the decreased demand for campsites, and the resulting increased opportunities for a rest/rotation system.

PAOT Capacity

The PAOT capacity for a primitive setting in the Middle Fork river corridor is 290 people. This is the maximum use allowed and would maintain the primitive setting now and in the future. Users would be sufficiently dispersed throughout the river corridor, such that encounters and congestion at rapids, special interest sites, launch sites, campsites, and hot springs would be infrequent.

Opportunities to Engage in Floating

During the summer season, available launches would be reduced by approximately 60 percent. This would result in significantly higher odds (or less chances) against a noncommercial floater obtaining a permit. A large percentage of potential commercial clients would likewise not be able to obtain a seat.

Spring opportunities would be only slightly better than summer, and fall would be worse.

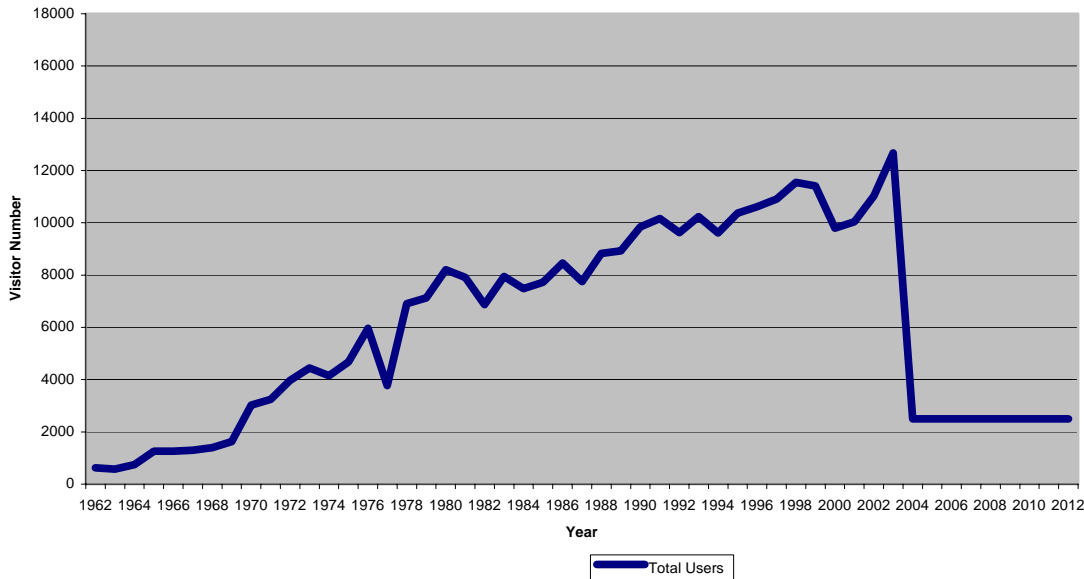
The opportunity to stay would be the same as current in the spring, slightly longer in summer, and slightly longer still in the fall, depending on party size.

Party sizes (which dictate length of stay above) would be smaller than current in all seasons. They would accommodate current average noncommercial party size. The proposed limit would be smaller than the current average for commercial trips by more than half in the summer season.

Figure 4.2 shows a projected immediate drop for Middle Fork use based on the reduction in launches, party size and resulting PAOT.

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Figure 4.2 MIDDLE FORK SALMON RIVER - HISTORICAL USE - 1962-2002
Alternative B - PROJECTIONS 2003-2012



Campsite Capacity

Condition and Trend

Given the major reductions in number of launches and substantial reductions in party size, it would be expected that opportunities for restoration and rehabilitation of campsites would be greatly improved. With less demand, opportunities for rest/rotation and/or closure of campsites would be the greatest of any alternative.

A slow improvement in natural resource conditions over time would be anticipated.

Number of Camps needed by Water Level

With reductions in number of parties, there would be more than enough campsites available at any water level

Number of Permits by Commercial and Noncommercial

This is the maximum potential number of float permits to be made available as a base allocation, to the commercial and noncommercial sectors, and ignoring the potential for re-issuing cancellations or no fills to either sector. As it is the base allocation, it further does not account for adjustments between sectors in the future based on actual use.

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There would be 414 commercial launches, 414 noncommercial launches, and no launches that are first come, first serve, for a total of 828 permits issued year round.

Alternative C - Middle Fork

Recreation Opportunity Spectrum

Social Encounters

At ten launches per day, the criterion for number of other parties encountered on the river during the day would slightly exceed the normal range for primitive, but not sufficiently to warrant re-classification of the ROS class. The criterion for number of other parties visible from camp would be within the encounter criteria for a primitive experience.

Visitor Management

Same as Alternative A

PAOT Capacity

The PAOT capacity for a primitive setting in the Middle Fork River corridor would generally be about 290 people. The maximum of 1434 under Alternative C exceeds this level by almost 5 times, making it difficult to maintain the primitive setting.

Opportunities to Engage in Floating

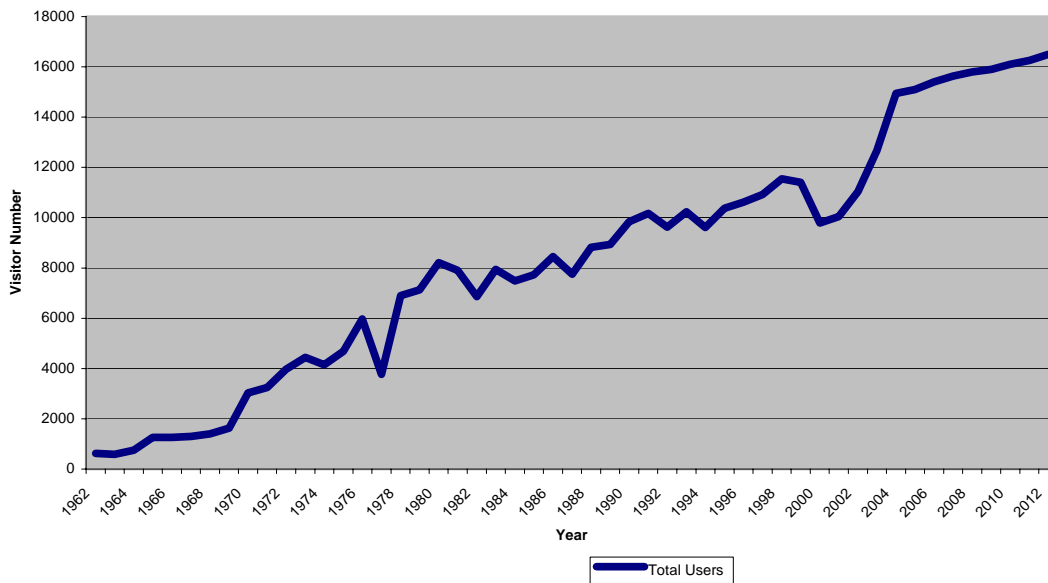
For noncommercial float parties, the opportunity to obtain a permit would improve with the addition of three small party launches. The opportunity to stay is unaffected from the current situation. The opportunity to bring more friends decreases because the maximum noncommercial party size would be reduced in order to accommodate the three additional small party launches.

Opportunities for commercial float parties remain unchanged from the current situation.

Figure 4.3 shows a projected immediate increase for Middle Fork use. This increase is based on the 3 additional launches for noncommercial groups of 8 or less. However, because Alternative C reduces party size, the overall PAOT is close to that in Alternative A.

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Figure 4.3 MIDDLE FORK SALMON RIVER - HISTORICAL USE - 1962-2002
Alternative C - PROJECTIONS 2003-2012



Campsite Capacity

Condition and Trend

Same as Alternative A

Number of camps needed by water level

Given the addition of three noncommercial small parties, and if all parties launched at their maximum allowable size, and if the water level is greater than five feet, there would be a minor shortage of campsites. The shortage could be accommodated with campsite sharing.

At water levels less than five feet, there would be a sufficient number of camps.

Number of Permits by Commercial and Noncommercial

This is the maximum potential number of float permits to be made available as a base allocation, to the commercial and noncommercial sectors, and ignoring the potential for re-issuing cancellations or no fills to either sector. As it is the base allocation, it further does not account for adjustments between sectors in the future based on actual use.

There would be 1095 commercial launches, 2555 noncommercial launches, and no launches that are first come, first serve, for a total of 3650 permits issued year round.

Alternative D - Middle Fork

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Recreation Opportunity Spectrum

Social Encounters

Same as Alternative A

Visitor Management

Same as Alternative A

PAOT Capacity

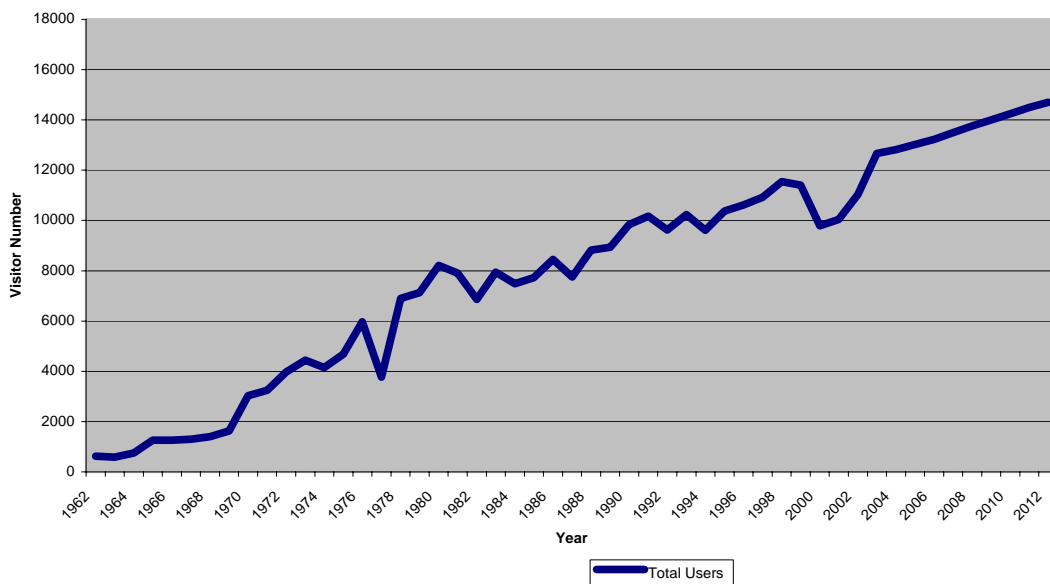
The PAOT capacity for a primitive setting in the Middle Fork River corridor would generally be about 290 people. The maximum of 1260 under Alternative D exceeds this level by more than 4 times, making it difficult to maintain the Primitive setting.

Opportunities to Engage in Floating

Basically the same as Alternative A except, with the inclusion of the variable trip option, float parties will have minor flexibility to extend their trips by having a smaller party.

Figure 4.4 shows a projected use for Middle Fork similar to Alternative A, but with a slightly lower rate of growth. This projection is based on implementation of the variable trip length option for floaters. However, because Alternative D reduces the combination of large parties and long length of stay, the overall maximum PAOT is less than that in Alternative A.

**Figure 4.4 MIDDLE FORK SALMON RIVER - HISTORICAL USE - 1962-2002
Alternative D - PROJECTIONS 2003-2012**



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Campsite Capacity

Condition and Trend

Same as Alternative A

Number of camps needed by water level

Same as Alternative A

Number of Permits by Commercial and Noncommercial

This is the maximum potential number of float permits to be made available as a base allocation, to the commercial and noncommercial sectors, and ignoring the potential for re-issuing cancellations or no fills to either sector. As it is the base allocation, it further does not account for adjustments between sectors in the future based on actual use.

There would be 330 commercial launches, 440 noncommercial launches, and 1155 launches that are first come, first serve, for a total of 1925 permits issued year round.

Alternative E - Middle Fork

Recreation Opportunity Spectrum

Social Encounters

Same as Alternative A

Visitor Management

Same as Alternative A

PAOT Capacity

The PAOT capacity for a primitive setting in the Middle Fork river corridor would generally be about 290 people. The maximum of 1116 under Alternative E exceeds this level by almost 4 times, making it difficult to maintain the primitive setting.

Opportunities to Engage in Floating

Same as Alternative D

Campsite Capacity

Condition and Trend

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Same as Alternative A

Number of camps needed by water level

Same as Alternative A

Number of Permits by Commercial and Noncommercial

This is the maximum potential number of float permits to be made available as a base allocation, to the commercial and noncommercial sectors, and ignoring the potential for re-issuing cancellations or no fills to either sector. As it is the base allocation, it further does not account for adjustments between sectors in the future based on actual use.

There would be 1095 commercial launches, 1460 noncommercial launches, and no launches that are first come, first serve, for a total of 2555 permits issued year round.

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Cumulative Effects – Middle Fork

The accumulation of the identified inconsistencies in the seven ROS criteria contained within each alternative are insufficient to warrant re-classification of the Middle Fork of the Salmon River from its current Primitive classification.

Float boating

Salmon River – Float Boating

Recreation Opportunity Spectrum

Visitor Management – Common to all Alternatives

All alternatives allow continued use levels that are likely to require increased on-site controls at campsites. The increased controls, such as subtle signing, would be related to archeological mitigation in order to protect the cultural resource while ensuring continued use of the sites. There would be a minor visual effect related to the introduction of signing where none existed previously, and a sense of increased regulation and regimentation for the users. The presence of these signs, if they are subtle in scale, still meets the criterion for Semi-primitive Motorized ROS class.

Alternative A - Salmon River Float Boating

Recreation Opportunity Spectrum

Social Encounters

The criterion for encounters in semi-primitive motorized setting is low to moderate contact frequency. Under the current allocation of 8 float launches per day and 15 jetboat launches per week, visitors are reporting about 3 encounters per day with other float parties and about 4 encounters per day with jetboat parties. These numbers meet the criterion of low to moderate contact frequency consistent with a semi-primitive motorized ROS classification.

PAOT Capacity

The PAOT capacity for a semi-primitive setting in the Salmon River corridor would generally be about 900 PAOT. The maximum of 3390 exceeds this level by almost 4 times, making it difficult to maintain the semi-primitive motorized setting.

Opportunities to Engage in Floating

In the current situation, at a level of eight launches per day (four noncommercial and four commercial), noncommercial floaters have about a one in seven chance of being successful in the lottery for a permit during the summer season. Commercial clients are generally able to obtain a seat although at peak use times it may not be with their first choice outfitter.

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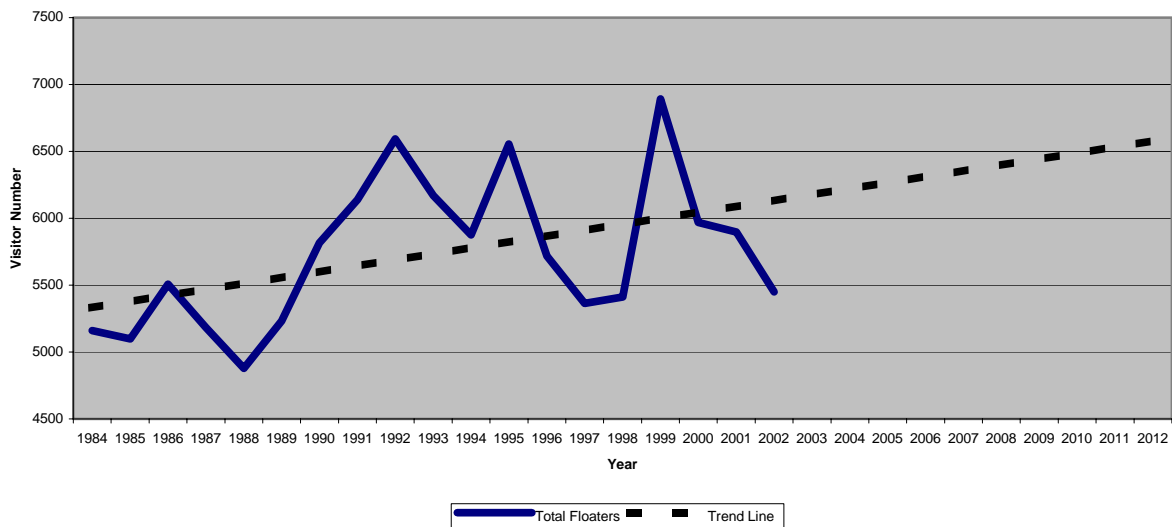
Approximately 100 scheduled commercial launches would be turned back in during the summer season, with a minimum of 5 days notice. Some of these would be picked up by other outfitters as temporary use, some would be picked up by noncommercial floaters, and some would go unused.

During spring and fall, both noncommercial and commercial opportunities are available and unlimited though weather and water levels often preclude preferred dates. Winter use is virtually non-existent.

Currently the maximum length of stay is 10 days. Noncommercial trips stay an average of 6 days; commercial trips stay an average of 5 days. Noncommercial parties average 11 people and commercial trips average 17 people.

Figure 4.5 shows a low level of projected growth for Salmon River float boat use, during the summer season, based on continued implementation of the current Wilderness and Salmon River Plans.

Figure 4.5 SALMON RIVER - HISTORICAL SUMMER SEASON FLOAT BOAT USE - 1984-2002
Alternative A - PROJECTIONS 2003-2012



Campsite Capacity

Condition and Trend

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Use in the Salmon River is growing much more slowly than use in the Middle Fork. Therefore, it will take longer to reach deterioration levels, which would lead to implementation of the stepwise program of standards and guidelines for cultural resource protection (Appendix H – Programmatic Agreement).

Number of camps needed by water level

Current use on the Salmon River is not exceeding the number of camps needed. However, it does approach capacity when the water level is greater than four feet. Campsite capacity and the assignment of campsites to float parties is currently working because, on average, the noncommercial and commercial party size are small, actual length of stay for both commercial and noncommercial parties is closer to 6 or 7 days rather than the 10 days allowed, and in some cases large camps are being shared by 2 parties.

The assigned campsite system currently used would continue to be used for float parties. As the average group size and/or the average number of launches per day increases over present levels toward the maximum allowed, competition for campsite would increase.

At water levels less than four feet, there is no shortage of campsites.

Number of Permits by Commercial and Noncommercial

This is the maximum potential number of float permits to be made available as a base allocation, to the commercial and noncommercial sectors, and ignoring the potential for re-issuing cancellations or no fills to either sector. As it is the base allocation, it further does not account for adjustments between sectors in the future based on actual use.

There would be 440 commercial launches and 440 noncommercial launches during the summer season for a total of 880 permits issued. Launches are unlimited in spring, fall and winter.

Alternative B - Salmon River Float Boating

Recreation Opportunity Spectrum

Social Encounters

With the reduction from eight float launches per day to two, encounter levels are within the encounter criteria for a semi-primitive motorized experience

PAOT Capacity

The PAOT capacity for a semi-primitive setting in the Salmon River corridor would generally be about 900 PAOT. The maximum of 692 under Alternative B is about 77 percent of this level, making it easy to maintain the semi-primitive motorized setting.

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Users would be sufficiently dispersed throughout the river corridor such that encounters and congestion at rapids, special interest sites, launch sites, campsites, and hot springs would be infrequent.

Opportunities to Engage in Floating

During the summer season, available launches would be reduced by 75 percent. This would result in significantly higher odds (or less chances) against a noncommercial floater obtaining a permit. A large percentage of potential commercial clients would likewise not be able to obtain a seat.

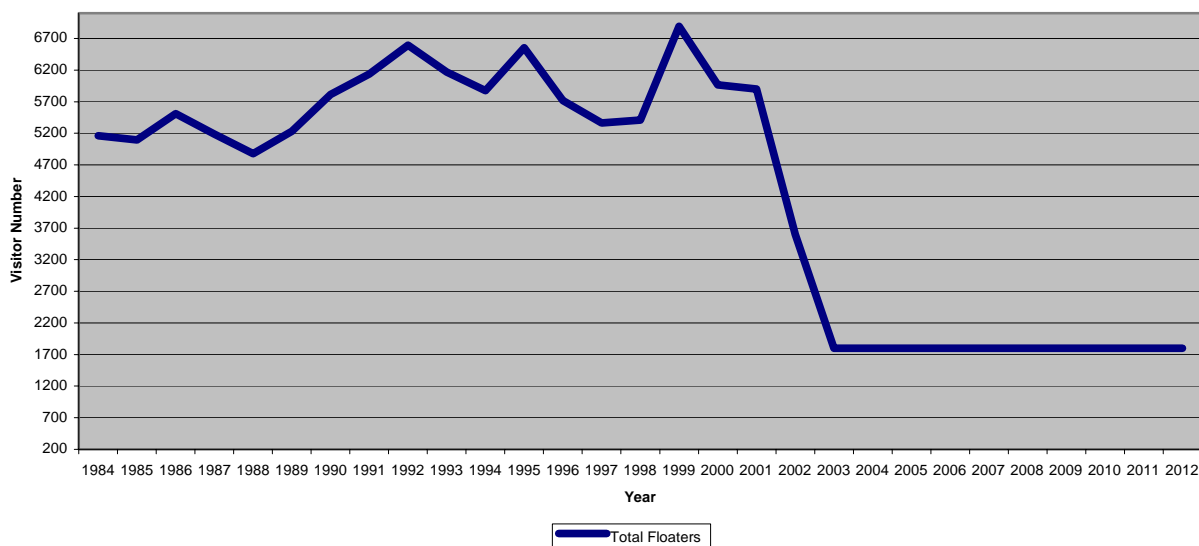
Spring opportunities would be the same as summer for the current, which is unlimited. In winter and fall, there would be one launch per day for a small party.

The opportunity to stay would be the same as current in the spring, slightly longer in summer, and slightly longer still in the fall, depending on party size.

Party sizes (which dictate length of stay above) would be smaller than current in all seasons. They would accommodate current average noncommercial party size meaning those groups that are larger than the average would have to be smaller in the future. The proposed limit would be smaller than the current average for commercial trips.

Figure 4.6 shows a projected immediate drop for Salmon River float boat use, during the summer season. This reduction is based on the reduction in launches, party size and resulting PAOT.

Figure 4.6 SALMON RIVER - HISTORICAL SUMMER SEASON FLOAT BOAT USE - 1984-2002
Alternative B - PROJECTIONS 2003-2012



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Campsite Capacity

Condition and Trend

Given the major reductions in number of launches and substantial reductions in party size, it would be expected that opportunities for restoration and rehabilitation of campsites would be greatly enhanced. With less demand, opportunities for rest/rotation and/or closure of campsites would be the greatest of any alternative.

The trend would be anticipated to be one of slow improvement in natural resource conditions over time.

Number of camps needed by water level

With the reductions in number of parties, there would be more than enough campsites available at any water level.

Number of Permits by Commercial and Noncommercial

This is the maximum potential number of float permits to be made available as a base allocation, to the commercial and noncommercial sectors, and ignoring the potential for re-issuing cancellations or no fills to either sector. As it is the base allocation, it further does not account for adjustments between sectors in the future based on actual use.

There would be 279 commercial launches, 280 noncommercial launches, and no launches that are first come, first serve, for a total of 559 permits issued year round.

Alternative C- Salmon River Float Boating

Recreation Opportunity Spectrum

Social Encounters

With the increase from 15 jetboat launches per week to 168 jetboat launches per week, encounters would be high, which is more accurately described by the ROS description for rural. This effect would be significant enough to warrant consideration of re-classification of the Salmon River corridor from semi-primitive motorized to rural.

PAOT Capacity

The PAOT capacity for a semi-primitive setting would generally be about 900 PAOT. The maximum of 5820 exceeds this level more than 6 times, making it difficult to maintain the semi-primitive motorized setting.

Reclassification of the ROS setting

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This alternative contains a major shift in recreation emphasis from nonmotorized float boat use to motorized jetboat use. With the increase from 15 jetboat launches per week to 168 jetboat launches per week and a PAOT capacity that is 6 times the capacity that would be most appropriate for a semi-primitive motorized setting, there would have to be strong consideration given to reclassifying the Salmon River corridor from its current semi-primitive motorized to rural.

Even with consideration of the CIWA language regarding continued jetboat use, should use levels ever approach the limits proposed by this alternative, the effect to float boating would be substantial and significant.

Although the emphasis shift is within differing types of recreation, the resultant reclassification of the river corridor to a rural ROS class would not be compatible with a wild river designation. Under this alternative, the corridor would best be described as a jetboat river rather than its current wild river with a motorized exception.

Opportunities to Engage in Floating

The permanent reallocation of approximately 50 launches from the commercial allocation to noncommercial floaters would increase opportunities for that group more than 10 percent. Commercial floaters would be unaffected because the 50 launch commercial pool, in addition to the base commercial allocation would be available for growth or additional launches.

Campsite Capacity

Condition and Trend

Same as Alternative A

Number of camps needed by water level

Given the increase in jetboat allocation from 15 to 168 launches per week, if all parties launched at their maximum allowable size, and if the water level is greater than four feet, there would be a substantial shortage of campsites, even with campsite sharing.

At water levels less than four feet, there would be a marginal shortage of campsites even with fairly substantial campsite sharing.

Number of Permits by Commercial and Noncommercial

Same as Alternative A

Alternative D- Salmon River Float Boating

Recreation Opportunity Spectrum

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Social Encounters

With the 50 percent increase in the number of jetboat launches per week from current, moderate contact frequency would continue, as described in Alternative A.

PAOT Capacity

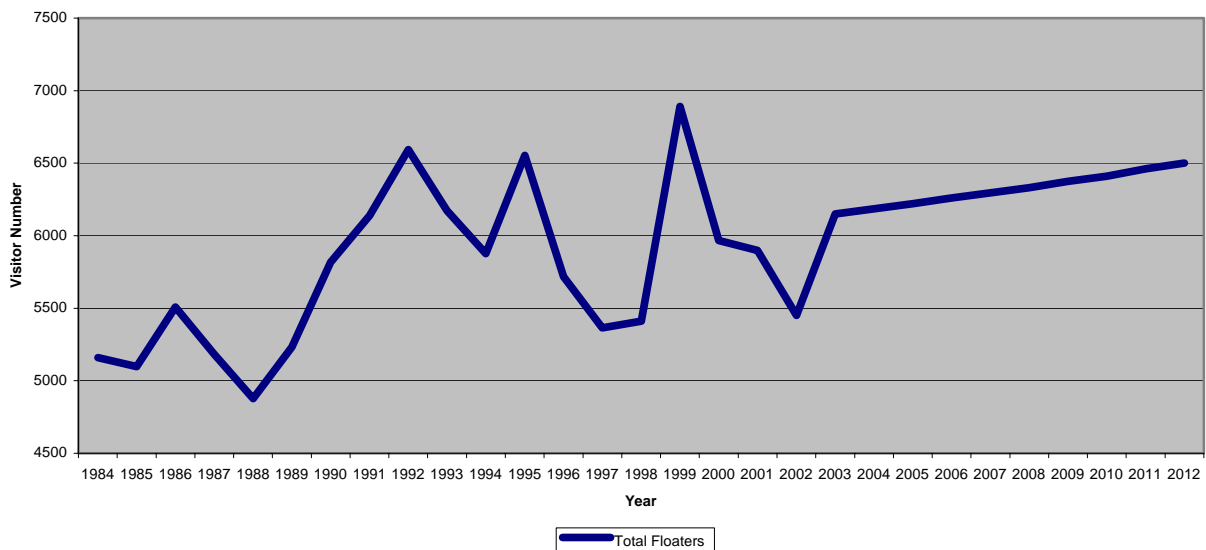
The PAOT capacity for a semi-primitive setting in the Salmon River corridor would generally be about 900 PAOT. The maximum of 2280 under Alternative D exceeds this level by 2 1/2 times, making it difficult to maintain the semi-primitive setting.

Opportunities to Engage in Floating

Basically the same as Alternative C except, with the inclusion of the variable trip option, float parties will have minor flexibility to extend their trips by having a smaller party.

Figure 4.7 shows a projected use for Salmon River float boat use, during the summer season, that is similar to Alternative A, but with a slightly lower rate of growth. This projection is based on implementation of the variable trip length option for floaters that is contained in Alternative D. However, because Alternative D reduces the combination of large parties and long length of stay, the overall maximum PAOT is less than that in Alternative A.

**Figure 4.7 SALMON RIVER - HISTORICAL SUMMER SEASON FLOAT BOAT USE - 1984-2002
Alternative D - PROJECTIONS 2003-2012**



Campsite Capacity

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Condition and Trend

Same as Alternative A

Number of camps needed by water level

Same as Alternative A

Number of Permits by Commercial and Noncommercial

Same as Alternative A

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Alternative E- Salmon River Float Boating

Recreation Opportunity Spectrum

Social Encounters

With the increase from 15 jetboat launches per week to 20, a low to moderate contact frequency would continue, as described in Alternative A.

PAOT Capacity

The PAOT capacity for a semi-primitive setting in the Salmon River corridor would generally be about 900 PAOT. The maximum of 2580 exceeds this level by almost 3 times, making it difficult to maintain the semi-primitive motorized setting.

Opportunities to Engage in Floating

Same as Alternative D

Campsite Capacity

Condition and Trend

Same as Alternative A

Number of camps needed by water level

Same as Alternative A

Number of Permits by Commercial and Noncommercial

Same as Alternative A

Cumulative Effects - Salmon River Float Boat

The accumulation of the identified inconsistencies in the seven ROS criteria contained within each alternative are insufficient to warrant reclassification of the Salmon River from its current semi-primitive motorized classification, except for Alternative C, which because of the increase in jetboat allocation and resultant very high level of encounters, would likely result in a consideration to change the designated ROS class from semi-primitive motorized to rural.

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Jetboating

Commercial Jetboat Use

Under all alternatives, there would be no change to the number of commercial permits issued, the number of boats allowed per permit, or the type of activities authorized. The effects to commercial jetboats are based on changes to the float boat allocation. The commercial jetboat activity most directly related to float boat allocation is the activity of jetbacks¹.

Alternatives A, C, D, and E – Commercial Jetboat Use

The float boat allocations for these four alternatives are similar enough that the effects are the same. In addition, the projected growth for float boat use for all these alternatives is similar. It is anticipated the demand for commercial jetboat services would parallel this growth trend. There are other commercial services provided by jetboat operators that are, for the most part, independent of float boat users (Salmon River Management Plan 1982, pg 51). Because the four alternatives would not change the type of activities authorized, there would not be an effect to current or future demand for these commercial jetboat activities.

Alternative B – Commercial Jetboat Use

Because float boat use would be restricted to two launches per day and the maximum party size for float boaters reduced to 13 people, the need for jetback services during the summer season is dramatically reduced.

Outside the summer season, jetboat use is restricted to the estimated 1978 use level of 700 PAOT, whether that use is commercial or noncommercial. It is our best estimates that by restricting all jetboat use to the 1978 use level; there would be a reduction in commercial business during these seasons. This is based on the assumption that total jetboat use has grown since 1978 including commercial jetboat use.

Jetboat Use for Private Land Access

There would be no effect to the ingress/egress of private property owners within the Salmon Wild River Corridor under any of the alternatives. Currently 22 private owners use jetboats to access their property and there is the potential to have up to 67 owners request the use of jetboats to access their property. None of the ingress/egress jetboat use is calculated in jetboat use figures for any of the alternatives except Alternative B.

Alternative B limits jetboat use during the summer season to the 1978 use levels and assigns first priority for that use to private property ingress and egress. The result is a reduction of the number of permits remaining for noncommercial recreational jetboaters. However, there would be no effect to ingress/egress private landowners.

¹ Jetback service returns rafters to their original launch site.

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Salmon River Noncommercial Jetboaters

Alternative A - Salmon River Noncommercial Jetboaters

Opportunities to Engage in Jetboating

During the winter, spring and fall, opportunities to engage in noncommercial jetboating on the Salmon River are unlimited. No permit is required and boaters simply come and go as they wish without limitations on numbers of boats or numbers of people. The only restriction is on length of stay, which is 10 days within the corridor, between Corn Creek and Long Tom Bar.

During the summer season, jetboaters must obtain a permit, which are limited to 15 launches per week, with a maximum party size of 30, a maximum of 3 jetboats per party, and a maximum length of stay of 10 days.

This combination of numbers results in an opportunity for one party of three jetboats to have a five-day summer camping trip within a one-week period.

For the total summer season, if all jetboat users took one day launches, there would be 171 launches available. If all jetboat users took the maximum length of stay, 10 days, there would be 34 launches available, and all combinations in between.

Alternative B - Salmon River Noncommercial Jetboaters

Opportunities to Engage in Jetboating

Limitations would be placed on jetboat use during the winter, spring and fall seasons with a permit required. Launches per week would be set at 49 from the current unlimited, thereby greatly reducing the opportunity to launch. Party size would be reduced 50 percent from current; length of stays is unchanged.

During the summer season, the number of launches per week is unchanged from current, length of stay is reduced from 10 to 7 days and party size is reduced 50 percent.

For the total summer season, the number of launches available is the same as Alternative A.

In all seasons, this alternative results in a fairly substantial reduction of jetboating opportunities.

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Alternative C - Salmon River Noncommercial Jetboaters

Opportunities to Engage in Jetboating

During the winter, spring and fall seasons, opportunities for launches would be essentially unlimited, with a limit placed on party size (20) and a requirement for a self-issued permit.

During the summer season, launch opportunities are increased more than 10-fold from the current situation, with basically the only restriction being a maximum party size of 12.

For the total summer season, the number of launches available is virtually unlimited.

This alternative by far provides the most opportunities for jetboating.

Alternative D - Salmon River Noncommercial Jetboaters

Opportunities to Engage in Jetboating

Winter, spring and fall opportunities are the same as Alternative A except length of stay is increased from 10 to 14 days while party size is reduced from current unlimited to 30.

Summer season would see a 50 percent increase in number of launches from current, and a reduction in length of stay from 10 to 7 days, and overall provides more opportunity than current due to a system of day trip and overnight trip allocations.

For the total summer season, if all jetboat users took the minimum length of stay, there would be 257 launches available: 57 one-day launches and 200 two-day launches. If all jetboat users took the maximum length of stay, there would be 114 launches available: 57 one-day launches and 57 seven-day launches.

Alternative E - Salmon River Noncommercial Jetboaters

Opportunities to Engage in Jetboating

Winter, spring and fall opportunities are virtually unlimited as in current situation.

Summer season opportunities are about the same as Alternative A with a 33 percent increase in number of launches.

For the total summer season, Alternative E has a 33 percent increase in the number of one-day launches over Alternative A. If all jetboat users took the maximum length of stay, Alternative E is the same as Alternative A.

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Cumulative Effects - Salmon River Noncommercial Jetboaters

The accumulation of the identified inconsistencies in the seven ROS criteria contained within each alternative are insufficient to warrant reclassification of the Salmon River from its current semi-primitive motorized classification, except for Alternative C, which because of the increase in jetboat allocation and resultant very high level of encounters, would likely result in a consideration to change the designated ROS class from semi-primitive motorized to rural.

Management of the Painter Bar Road

Alternative A - Painter Bar Road

The Painter Bar Road would remain open to motorized vehicular traffic from near the Mackay Bridge upstream to the Painter Bar Homestead. Current use is limited with an estimated 15 highway vehicles per month using the road, primarily to access the dispersed campsites along the Salmon River as well as access for some private landowners. There is also increasing ATV use on this section of road. Vehicle use on this section of road is expected to grow because demographics show more people are recreating, especially in dispersed areas. However, given the remoteness of the area, it is expected only a slight increase would occur in motorized traffic.

Visitors to this portion of the wild river corridor would be exposed to the sight and sound of an increasing amount of motorized traffic along this portion of road. This motorized use would be in addition to the aircraft and jetboats. However, for the most part, the road and associated traffic is not within sight of those visitors on the Salmon River, and the sounds of the river generally would drown out the sounds of any vehicles traveling on the road.

The noise associated with both vehicles and ATV use would continue to meet the ROS classification of semi-primitive motorized within the W&SR corridor.

Motorized traffic, in general, is a conduit for the spread of noxious weeds. It is expected that the continued use of this road by motorized vehicles could introduce noxious weeds on the Painter Bar Road and adjacent road banks.

Additionally, the Painter Bar Road was originally built to access the Painter Bar Mine/Homestead. The road also provides access for other private property owners. The road is within the legal description of the Salmon W&SR and the FC-RONRW. While the CIWA states the “wild” Salmon River corridor is to be managed by the less restrictive W&SR Act, the wild designation requires more restrictive decisions to protect the Rivers character than either a Recreational or Scenic river.

A Wild designation signifies shorelines that are essentially primitive and generally inaccessible except by trail. In contrast “Scenic” designation is described as shoreline that are largely primitive and undeveloped but accessible in places by roads, and recreational rivers are readily accessible by road. For these reasons the effect of keeping the road open and allowing motorized use to the general public would be contrary to the 1968 W&SR Act in addition to being out of compliance with the 1964 Wilderness Act.

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Alternative B - Painter Bar Road

The Painter Bar Road would be closed from the upstream end of the dispersed campsites to the Painter Bar Homestead and managed as a non-motorized trail. This would result in the elimination of current and future motorized vehicle use and ATV use. Those individuals who have become accustomed to using this road by motor vehicle would no longer be able to do so.

Visitors to this portion of the Wild River corridor would not be exposed to the sight and sound of motorized vehicle traffic along this section of the river. Non-motorized use would be expected to increase as the trail and its dispersed sites become known to those user groups. This area of the river corridor would still have motorized traffic noise from jetboats and aircraft, but the noise level would be less because of the Painter Bar Road closure. In the long term (20+ years), the Painter Bar Road would take on the characteristics of a trail with vegetation encroaching from the sides and grasses growing in the roadbed.

This section of the Salmon W&SR corridor would continue to meet the ROS classification of semi-primitive motorized because of the jetboats and aircraft use allowed in this area.

The potential infestation and spread of noxious weeds along the trail would be less with the elimination of vehicle access.

Closing the Painter Bar road would move this section of the wild river corridor and wilderness into compliance with the intent of the 1964 Wilderness Act and W&SR Act.

Alternative C - Painter Bar Road

The effects would be the same as Alternative A.

Alternative D - Painter Bar Road

The Painter Bar Road would be closed June 20 through September 7, from the upstream end of the dispersed campsites to the Painter Bar Homestead.

Those individuals who have become accustomed to using this road for access by motor vehicle during the summer would no longer be able to do so. However, motorized access would be allowed outside of the June 20 through September 7 summer season to accommodate those visitors who traditionally use vehicle access to this area for spring and fall fishing and/or hunting trips.

Visitors during the summer season would experience conditions similar to Alternative B.

Visitors to the area prior to June 20 or later than September 7 would experience conditions similar to Alternative A.

The noise associated with both vehicles and ATVs would continue to meet the ROS classification of semi-primitive motorized within the W&SR corridor.

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The road would not likely take on the appearance of a trail as in Alternative A. There would be the opportunity for the spread of noxious weeds by vehicles to occur during the seasons when vehicle use is allowed.

The road is within the legal description of the Salmon W&SR and the FC–RONRW. While the CIWA states the “wild” Salmon River corridor is to be managed by the less restrictive W&SR Act, the wild designation requires more restrictive decisions to protect the Rivers character than either a Recreational or Scenic river.

A Wild designation signifies shorelines that are essentially primitive and generally inaccessible except by trail. In contrast “Scenic” designation is described as shoreline that are largely primitive and undeveloped but accessible in places by roads, and recreational rivers are readily accessible by road.

Under this alternative, the effect of keeping the road open for motorized public access, even seasonally, would be contrary to the 1964 Wilderness Act and W&SR Act.

Alternative E - Painter Bar Road

Under Alternative E, Painter Bar Road would be closed June 20 through September 7, from the upstream end of the dispersed campground to the Painter Bar Homestead. The effects would be the same as Alternative D.

Cumulative Effects - Management of the Painter Bar Road

The cumulative effects analysis area for the Painter Bar Road is the roadbed and the adjacent 10 feet, both sides of the road. Any past or present management activities within the cumulative effects analysis area have already been included in the effects analysis for this road.

Cumulative Effects - Alternatives A, C, D, and E- Painter Bar Road

All four of these alternatives would allow some level of motorized vehicle access to continue on the Painter Bar Road. This road and the adjacent land next to the road is infested with noxious weeds, the cumulative effect would be a continual increase in the target areas needing noxious weed treatment. The cumulative effects of keeping the Painter Bar Road open with the need to treat this area due to continued infestation of noxious weeds would be insignificant, in terms of the FC–RONRW noxious weed analysis and treatment project.

Cumulative Effects - Alternative B- Painter Bar Road

There would be insignificant to no cumulative effects under Alternative B in regards to the Painter Bar Road. By closing the road, the highest risk of spreading noxious weeds has been eliminated which could reduce the resources needed to inventory and treat this area. There is still the potential of having noxious weeds occur on or adjacent to the closed Painter Bar Road from non-motorized users, but the probability is considerably less.

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Economics

Alternative A - Economics

Party size and the number of launches available to both commercial and noncommercial floaters are the controlling factors for determining the economic impacts on a community. This alternative provides an opportunity for additional growth since the current party size is below the maximum limit, allowing for growth by increasing party sizes. The "Year 10 Estimate" reflects both historic and anticipated growth rates. The economic impacts associated with noncommercial jetboating are relatively minimal with this alternative.

The net effects of the changes in floater and jetboat use on the local communities if Alternative A were implemented today and 10 years from now for both the Salmon (float boat and jetboat use) and Middle Fork Rivers are displayed below in Table 4.1.

Table 4.1 Economic Effects of Alternative A				
	If alternative implemented today		Year 10 Estimate	
Community	Earnings	Jobs	Earnings	Jobs
Salmon	\$1,093,900	102.4	\$1,434,700	132.0
North Fork	\$ 56,500	8.4	\$ 73,300	10.8
Challis	\$ 101,400	11.6	\$ 127,800	14.5
Stanley	\$ 390,800	42.5	\$ 508,300	54.2
Riggins	\$ 81,400	11.8	\$ 113,400	16.7

Alternative B - Economics

If this alternative were implemented today, it would have the greatest negative impact on all the communities in the influence area.

The net effects of the changes in floater and jetboat use on the local communities if Alternative B were implemented today and 10 years from now for both the Salmon (float boat and jetboat use) and Middle Fork Rivers are displayed below in Table 4.2.

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Community	If alternative implemented today		Year 10 Estimate	
	Earnings	Jobs	Earnings	Jobs
Salmon	\$ 267,400	24.0	\$ 286,300	25.1
North Fork	\$ 13,800	2.0	\$ 14,900	2.1
Challis	\$ 21,200	2.2	\$ 22,700	2.3
Stanley	\$ 98,600	9.6	\$ 113,500	10.6
Riggins	\$ 29,800	5.0	\$ 30,000	5.0

Alternative C, D, and E - Economics

The economic effects for Alternative C, D, and E are essentially the same as Alternative A. The effects between Alternatives A, C, D, and E are not different enough to distinguish between alternatives in the first 10-years. Further, when comparing between these alternatives, by community, the percent increase in total earnings and jobs that is attributed to these alternatives does not result in a significant impact to these communities.

Cumulative Effects - Economics

The actions proposed, other than river float and jetboat use analyzed above, would not influence the economic viability of the communities described above. There are not any known changes in other segments of the economy that would impact these communities. Therefore, there are no measurable cumulative effects.

Cultural Resources Effects

Effects Common to All Alternatives

While most Middle Fork and Salmon River campsites studied from 1978 through the present are relatively stable, it was found that some campsites did increase in size and shift location through time, thus continuing to impact archaeological resources. This increase in campsite impacts is expected to continue for the short term until stepwise standards and guidelines are implemented.

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Table 4.3 provides the numbers of National Register Eligible archaeological and historical sites associated with campsites on the two rivers. The figures differ slightly from those in the recreation section that shows how many camps have associated archaeological and historical sites. Approximately 10 percent of the known archaeological and historical sites documented in the river corridors are associated with river campsites are expected to be adversely affected by campsite use.

Table 4.3 Summary of Cultural Sites and Recreation Impacts.		
Cultural Site Impact Description	Salmon River	Middle Fork
Within or Adjacent to Campsites	55	54
No Information Available	116	46
No Recreation Impacts Noted	43	94
Non-Campsite Recreation Impacts Noted "Attraction Sites"	27	50

A portion of the jetboat use is concentrated on day use sight seeing, moving people between fixed camps, or in returning floaters from the end of their trip to Corn Creek. These users are more likely to affect lunch stop and interpretive attraction sites than floaters. Alternatives that have large increases in jetboat use on the Salmon River may lead to increased compaction, trailing, and associated damage to archaeological and historical sites. These impacts would be lessened with stepwise procedures until the sites were stabilized.

Day use recreation visitation by floaters and jetboat users are concentrated at lunch stops, pictograph, cabin and mining sites. Table 4.5 suggests that ten percent of the Middle Fork and six percent of the Salmon River have some documented non-campsite recreation impact. Loss of vegetation and compaction of archaeological resources along trails and at these heavily visited sites is common. Many archaeological features are cut through and partially or totally destroyed from these activities. Archaeological resources would continue to be lost. This use is expected to continue and impacts would be mitigated through the stepwise process, as appropriate.

Tables 4.4 and 4.5 summarize the types of sites associated with campsite and non-campsite impacts on the Main Stem and Middle Fork Salmon Rivers, respectively. These figures are for low water camps only and reflect only those sites eligible for nomination to the National Register of Historic Places. It is expected that there would be fewer sites impacted during high water, although there may be more pressure on individual cultural sites during the high water flows, owing to fewer campsites being available for use. While the percentage of each site type being impacted within an individual river corridor is relatively small, between 1 and 4 percent of the total resource, the actual significance of many of these sites is not well understood. It is possible,

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given the state of our knowledge, that individual sites and features represent rare resources not found elsewhere. Therefore, until appropriate levels of scientific investigation have been completed it is not appropriate to trade resources in an existing campsite for those that are presently outside of campsites and impacts. In the long term, with appropriate study of all sites within the corridor, it may be possible to trade a campsite archaeological site for a non-campsite archaeological site.

Table 4.4 Number of Salmon River Site Types by Recreation Impacts.		
Type of Cultural Site	Campsite	Non-Campsite Recreation Impact
Native American	32	16
Historic	5	5
Both	14	6
Unknown	4	0

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Type of Cultural Site	Campsite	Non-Campsite Recreation Impact
Native American	29	33
Historic	3	7
Both	19	10
Unknown	3	0

None of the airstrips sites are eligible to the National Register of Historic Places; therefore there would be no effects on cultural resources at these sites.

The FC–RONRW Programmatic Agreement recognizes that continued use of National Register of Historic Places listed or eligible sites within the FC–RONRW is an adverse effect. The FC–RONRW Program Agreement calls for a step-wise program to reduce or eliminate documented adverse effects. Therefore, the execution of the FC–RONRW Program Agreement and implementation of the stipulated measures allows for continued use of the corridor by recreationists under all alternatives. Differences between individual alternatives can be displayed by describing how quickly and how intensely measures would need to be implemented to reduce or eliminate adverse effects within the river corridors.

Alternative A – Cultural Resources

Alternative A continues the present management direction that would result in the overall deterioration of archaeological and historical sites over time. The long-term deterioration of campsite condition, especially the loss of protective vegetation and expansion of existing core campsite areas through time, would be expected for this alternative. Additionally, visitor use of trails and local interpretive attractions would increase over time, causing loss of protective vegetation and the resultant erosion, compaction and associated damage to archaeological and historical features.

Given an expected increase in visitor use on the Salmon River, it is expected that archaeological and historical sites would continue to degrade through visitor use. Archaeological and historical sites within or adjacent to large party sized non-beach campsites would be lost in the long term. Additionally, it is expected that recreation use would increase at attractions such as pictograph sites, cabins, and mining sites causing soil compaction, vegetation losses, deterioration of structures, and loss of artifacts.

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On the Middle Fork River it is expected that visitor use would increase leading to a somewhat quicker loss of archaeological and historical sites than on the Salmon River. This is expected because of the higher number of campsites that are located directly on archaeological and historical sites. Core area campsite degradation would continue on its present trend, as would expansion of core areas and accompanying incidental trailing and visitor use at interpretive attractions.

It is expected that the Programmatic Agreement standard and guidelines would be implemented immediately and at a fairly high management level on large party sites with highly denuded core areas to reduce the rate of deterioration of the most significant sites and features within the corridors. The small and medium campsites may have relatively stable core areas that can be managed with less intrusive measures over the long term.

Continued use of the Painter Bar road would directly affect the integrity and overall condition of two archaeological sites and has the potential to affect several other sites in the general area by providing access by vehicles.

Alternative B – Cultural Resources

This alternative would present the best opportunity for campsite restoration by reducing the rate at which impacts occur to archaeological and historical resources. Expected visitor reductions of nearly 80 percent on the Middle Fork River and over 90 percent on the Salmon River would slow, or possibly reverse the rate of campsite core area expansion and incidental impacts at visitor attraction sites. This reduction in visitors would allow for more flexibility in treatments and the potential long term stabilization of campsites by allowing a rest rotation schedule or closure of highly degraded campsites. In addition, the trend in overall incidental visitor use would decrease, allowing for stabilization of significant non-campsite archaeological sites over the long term. The Programmatic Agreement Standard and Guidelines necessary to reduce or eliminate impacts to archaeological and historical sites would be less intrusive to the wilderness characteristics and recreation visitors who use the FC–RONRW.

The closure of the Painter Bar road could lead to long-term stabilization of archaeological sites along the road.

Alternative C – Cultural Resources

This alternative would allow for the maximum increase in users and potentially have the most impacts to archaeological and historical sites over time. Long term increase in expected use argues for a continued trend of cultural site loss in the short and long term.

Since Salmon River use projections for this alternative are essentially the same as Alternative A, effects will be similar. However, given that both jetboat and float launches may increase at a higher rate than projected, impacts from this alternative have the potential to become much worse over time than Alternative A. As jetboat and raft launches increased it is likely that campsite core areas would expand into the minimally affected edge of the core area or previously unaffected archaeological deposits. Also, trailing, compaction and other impacts from increased visitor use at pictograph and historic sites would increase over time. Given sufficient time, with

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increased use, all surface traces of Native American archaeological sites would be expected to vanish in heavily used campsites.

On the Middle Fork, an increase in use would accelerate over present levels at a significant rate. Similar to the Salmon River, there could be the loss of cultural resources on some highly used sites.

It is expected that Programmatic Agreement standard and guidelines would be implemented immediately and at a fairly high management level on large party sites with highly denuded core areas to reduce the rate of deterioration of the most significant sites and features within the corridors. The small and medium campsites may have relatively stable core areas that can be managed with less intrusive measures over the long term. If compliance is not met, more drastic management strategies would be implemented. This results in a compromise of the wilderness character and more impacts on river users through management restrictions.

Effects to the sites along the Painter Bar road would be the same as Alternative A.

Alternative D– Cultural Resources

Under this alternative, use would be capped at a much lower level than previous alternatives. Effects to archaeological and historical sites would continue over time on both rivers, but at a fairly slow and steady trend similar to the present. The reduction in length of stay over Alternatives A and C may have some long term benefit by reducing the number of parties that use certain campsites or visit recreation attractions over the course of the season.

This alternative would require significant measures and controls on visitor use for selected sites with heavy campsite use. As with Alternative A, stepwise controls are implemented to reduce or eliminate adverse effects.

The closure of the Painter Bar road could lead to long-term stabilization of archaeological sites along the road.

Alternative E– Cultural Resources

The expected effects of this alternative are similar to that for Alternative D, except that use would be capped at a slightly lower figure and length of stay. Overall, the long-term condition of campsites, sites located in high visitor use areas, and along the Painter Bar road would continue to deteriorate over the long term, but at a reduced rate over other alternatives. Reduction of jetboat launches, stay length and/or party size over the other alternatives allow for some level of rest rotation on camps and reduce the rate of overall deterioration over time on both rivers.

This alternative would require significant measures and controls on visitor use for selected sites with heavy campsite use. As with Alternatives A and D stepwise controls would be implemented to reduce or eliminate adverse effects with essentially the same effects.

Cumulative Effects– Cultural Resources

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Given the complexity of archaeological and historical site characteristics and impacts, it is difficult to provide a clear rate of loss of these sites. If present trends of increased visitor use continue at an expected rate of 0.5 percent per year on the Salmon River and 1.5 percent per year on the Middle Fork, we might expect short-term corridor-wide changes within the 10-year life of the plan to be negligible. However, over the course of the nearly 25 years since Knudsen et al's 1978 survey, some of the Middle Fork campsites have nearly doubled in size and many of the surface features, such as tipi rings and pithouses have completely disappeared. This would suggest that over the course of a longer period, such as 20-25 years, serious loss of archaeological and historical features would occur without intensive management.

The cumulative effects analysis area for cultural resources in the FC-RONRW is the wilderness area. There are no past or present activities occurring with the wilderness that has not been accounted for in the effects analysis of cultural resources. Treatment of noxious weeds is a foreseeable future action.

Weed treatment activities proposed for the FC-RONRW have the potential to affect archaeological resources within the two river corridors. Pulling of weed species could cause disturbance of near surface archaeological artifacts and features by displacement. However, given the highly disturbed nature of most sites within the corridors this activity does not add to the cumulative impacts for this resource.

Biophysical Resources

Water Quality

All Alternatives

The effects to water quality from recreation river use (floating and jetboating) would be minimal to insignificant regardless of which alternative is selected. There is still the potential for nitrates, phosphate, phosphorus, and fecal coliform bacteria to be present, but past testing shows very little contaminates and these have been sporadically present. Therefore, this trend/level of contaminates is expected to be the same in the future and not affect water quality in either river.

By continuing to require the human waste pack-it-out program, administering stringent mineral operation plans, and providing user education on wilderness and river ethics, it is expected that the effects to the water quality of the FC-RONRW would be minimal to non-existent.

None of the alternatives would cause soil disturbance that would contribute substantial sediment into any of the Idaho State listed 303(d) water bodies. There is the potential that some sediment could enter either the Middle Fork or Salmon Rivers from recreational river users due to them entering or leaving the river. The amount of sediment that could be displaced from these areas would be minimal to non-measurable.

Cumulative Effects – Water Quality

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The cumulative effects analysis area for water quality is the FC–RONRW area. Past and current projects have been included as part of the existing condition. Foreseeable future actions include supplementing the existing 1999 Noxious Weed Treatment EIS to include the entire wilderness in determining high risk areas where noxious weeds are occurring or could occur. Treatments include mechanical or spraying. Spraying would be restricted to upland areas and mechanical treatment would occur in riparian areas. Therefore, these activities would not add to the cumulative impacts for this resource.

Fisheries

All alternatives have the same effects for fisheries.

The primary influences on habitat come from natural events with human-caused effects being minimal by comparison. Human effects are most apparent around high attraction areas such as hot springs and established campsites primarily in the river corridors. These effects may include minor increases in sedimentation, water temperature, and nutrient levels. It is anticipated that they would be so small as to be immeasurable.

TES consultation or re-consultation may be required for any new or ongoing project or activity if their potential effects exceed those allowed by PACFISH or Forest Plan revisions.

The entire river floating program and jetboat use at its current and short term (approximately 10 years) foreseeable use level including facilities, campsites, and associated activities has been determined to have no effect on Snake River spring/summer Chinook salmon, Snake River sockeye salmon, Columbia River bull trout, and Snake River steelhead trout. There would also be a no impact on west-slope cutthroat trout. If the Snake River spring/summer Chinook salmon and/or the Snake River steelhead trout recovery occurs and spawning again occurs in the main rivers, then the effects of river floating and related activities could need to be re-evaluated.

All routine maintenance activities at the four landing strips (Dewey-Moore, Mile-Hi, Simonds, and Vines) would have no effect on Snake River spring/summer Chinook salmon, Snake River steelhead trout, Snake River sockeye salmon, or Columbia River bull trout. It would have no impact on westslope cutthroat trout.

Management Indicator Species (MIS)

The activities analyzed in the alternatives would have no effect on any aquatic habitat management indicators identified on the Bitterroot, Boise, Challis, Nez Perce, Payette, or the Salmon NFs.

Cumulative Effects - Fisheries

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The area defined for fisheries cumulative effects encompasses the major headwater tributaries inside and outside the wilderness (Marsh Creek, Bear Valley Creek, the South Fork Salmon River, etc.) and the headwaters of some smaller streams. Activities in these tributaries and headwater streams can result in downstream impacts to fish habitat and water quality.

Presently, the cumulative effects of all human activities are at a low level and no significant impacts to anadromous or resident fish habitat have been identified.

Anadromous fish species (salmon and steelhead) are affected by activities outside of the above-described affected area and outside the scope of this decision.

Wildlife

None of the alternatives has effects on wildlife species with the exception of bald eagle, which is discussed below. Further information for all other species is displayed in Appendix I - Wildlife.

Bald Eagle

The administrative decisions being proposed in the FC–RONRW Management Plan would not change human presence or activities in bald eagle habitat within the Wilderness. The short stretch of road between Painter Bar and Mackay Bar Campground would receive extremely lightly use, except under Alternative B, D and E, where the road would be closed. This road is not a factor in summer or winter habitat suitability for bald eagles. Regardless of whether the road is open or closed, its status would not affect bald eagles. Outfitted and non-outfitted land-based recreation, floating and jetboating activities would continue to occur under all alternatives, including B, which would slightly decrease use, especially in the Middle Fork. Efforts to eradicate noxious weeds would help maintain necessary forage on big game winter ranges to sustain populations of elk and deer. This should help ensure adequate carrion supplies to support wintering eagles over time. Since no bald eagles are known to nest within the FC–RONRW, noxious weed treatment activities would not occur during periods of bald eagle presence.

The administrative decisions and proposed actions contained within any of the alternatives would not precipitate or contribute to any departure from the current quality or quantity of habitat available to bald eagles. However, the existing policy of allowing snags to be cut in the river corridors would continue to reduce the number of potential foraging perches for eagles.

Bald eagles are not known to nest within the Wilderness and no critical habitat for this species has been designated within the FC–RONRW. Virtually all human presence within the river corridors occurs outside the winter months when eagles are normally present. By implementing any of the alternatives, there would be no effect on designated critical habitat for this species but there would be a may affect but not likely to adversely affect on the threatened bald eagle because all proposed alternatives allow both floating and jetboating to occur at levels that may decrease the nesting and/or brood rearing habitat potential of the river corridors.

Cumulative Effects – Bald Eagle

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Efforts to eradicate noxious weeds would help maintain necessary forage on big game winter ranges to sustain populations of elk and deer. This should help ensure adequate carrion supplies to support wintering eagles over time. Since no bald eagles are known to nest within the FC–RONRW, noxious weed treatment activities would not occur during periods of bald eagle nesting or brood rearing. Effects of herbicide use on bald eagles and their potential terrestrial prey were discussed in the 1999 Noxious Weed Treatment EIS and the Biological Assessment that was prepared for that document. Those analyses indicated that, even under the worst case scenarios, application of the approved herbicides at label rates would result in herbivores receiving a potential dose of less than two percent of the LD50 dose while the potential dose a predator or scavenger such as the bald eagle could obtain would be even less. In the 1999 BA that was prepared for the FC–RONRW Noxious Weed Treatment EIS, predicted doses delivered to fish, primary prey for bald eagles, was determined to be much less than the “No Observed Effect Level” and a determination of “may affect not likely to adversely affect” was reached. These analyses are included in Appendix B of the 1999 Noxious Weed Treatment EIS document. Because the herbicides used on noxious weeds do not bioaccumulate, cumulative impacts of spraying noxious weed sites within and adjacent to the Wilderness would be negligible or insignificant. Animals high on the food chain, like bald eagles, are not expected to acquire concentrated doses by feeding on other animals that have been in any way exposed to or contaminated by any herbicides.

Plants

Management activities have the potential to affect several sensitive plants, discussed below. Further information on other plants is in Appendix J – Plant Species and Plants Effects.

Sensitive Plant Species

There are four sensitive species (tall swamp onion, lance-leaved moonwort, northern moonwort, and Buxbaum’s sedge) that occur either in or around lake basins, wet meadows, moist sites, or spring seeps or have habitat where the concentration of human use is considered high. Within these areas, individual species could be affected from recreational activities. However, these activities should not reduce that plant species overall population viability. Actions proposed under any of the alternatives in these habitat types could also affect individual plants, but would not reduce that plant specie’s overall population viability.

The giant helleborine as stated in Chapter 3 occurs in minerotrophic seeps, springs and thermal waters. This species and its habitat occur along both the Middle Fork and Salmon Rivers. Existing and proposed recreational activities have the potential to affect this species, especially near the trail to Barth Hotspring and other heavily visited hotspots. Monitoring has indicated this sensitive plant at Barth Hotspring is secure. However, other documented areas have habitat that could be degraded by noxious weeds and other exotics. Existing and proposed actions, under any of the alternatives, could affect individual plants but would not reduce this plant species’ overall population viability.

Management Indicator Species

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Western yarrow and Canadian thistle are MIS plants that indicate disturbance in riparian areas. Within the FC–RONRW, there are many areas where these species occur because of either existing recreational use or natural processes. The 2000 fires caused considerable disturbance in the wilderness and these plants have shown up in riparian areas. In areas along the two river corridors, most of the more heavily used campsite areas/hotspring areas have Canadian thistle growing. Under all the alternatives, there could be a slight increase in Canadian thistle or western yarrow in the existing disturbed areas from overnight camping or trailing to hotspring.

Cumulative Effects – TES and MIS Plants

The cumulative effects analysis area would be restricted to the 2.4 million acre wilderness boundary. All past and present effects from activities within the wilderness are considered the existing condition and have been analyzed above for all TES and MIS plants. The only foreseeable future action planned for the wilderness is the treatment of noxious weeds. Treatment plans for noxious weeds include inventory or site assessments, mechanical, or spraying. Mitigation measures have been identified in the 1999 Noxious Weed EIS and these measures are applied. The mitigation measures are designed to protect and maintain population viability and habitat of TES plants and will be incorporated into future treatment practices. Therefore, there would not be any cumulative effects to TES or MIS plants under any of the alternatives.

Air Quality

There would be no impairment to air quality or the Class II air-shed standards due to the implementation of any proposed actions in any of the five Alternatives.

Jetboat use under Alternatives A, B, D, and E may have a short-term degradation of air quality in a defined localized area. Alternative E allows the most boats at one time (BAOT) in the river corridor, 20 boats. The other alternatives allow 15, 15, 10 BAOTs in the river corridor for Alternatives A, B, and D, respectively. Not all of the jetboats would be allowed to travel together because these alternatives restrict the number of boats traveling together to three boats. Even with up to 20 boats on the river at one time, the boats are spread out on the river, which would minimize the effects to air quality. In addition, the effects from exhaust would be minimal because of the configuration (narrow river canyon) of the Salmon River corridor and the up canyon winds. Exhaust from the jetboats would be dissipated quickly because of these conditions. This would result in insignificant effects to the overall air quality of the FC–RONRW.

Alternative C would allow 240 boats per day to be on the river. Under this alternative, there would also have short-term degradation of air quality in defined localized areas of the river corridor. However, there would be more of the river corridor with jetboats using the river under this alternative. Again, not all of the jetboats would be allowed to travel together because this alternative restricts the number of boats traveling together to three boats. This would result in more areas experiencing exhaust from jetboats. Despite the increased number of jetboaters on the river, the effect to air quality would still be localized and as the up canyon winds move

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through the area, the exhaust would be dissipated. This would result in insignificant effects to the overall air quality of the FC–RONRW.

By far, factors that most influence the air quality of the wilderness are fires (either within or adjacent to the Wilderness) and atmospheric conditions that regionally import poorer quality air to central Idaho and the FC–RONRW. None of the alternatives would influence either fires or atmospheric conditions.

Short Term vs. Long Term Productivity

There are no proposed actions in any of the alternatives that result in short-term consumptive use of resources or the environment or that would impair the long-term productivity of the environment.

Adverse effects that cannot be avoided

Cultural resources have adverse effects that cannot be avoided. Given the language of the CIWA, which mandates recreation use within the W&SR corridors and the large number of highly significant archaeological and historical sites located within the corridors, it is not possible to avoid adverse effects to cultural resources. Continued use of cultural sites as recreation campsites and interpretive attractions would lead to the inevitable loss of scientific data potential. However, consultation among the Forest Service, Idaho State Historic Preservation Officer, Advisory Council on Historic Preservation and Shoshone-Bannock and Nez Perce Tribes provides for acceptable adverse effects under Section 106 of the National Historic Preservation Act through the FC–RONRW Programmatic Agreement. The key is the development of a Historic Preservation Plan that will define appropriate mitigation measures to reduce adverse effects where possible to an acceptable level while still allowing public access.

Irreversible or Irrecoverable Commitment of Resources

Conditions at most of the inventoried campsites, launch sites, landing strips, trails, and administrative sites are an irretrievable commitment of resources in that it would take longer than ten years to totally restore natural conditions. These effects would apply to all alternatives, because these conditions would continue to occur under all alternatives.

The continued use of the two river corridors would lead to an irretrievable commitment of archaeological and historical resources over the next 5 to 25 years. The archaeological and historical resources within the two river corridors and at Painter Bar are nonrenewable. The continued use as mandated under the CIWA would lead to the destruction of some portion of those resources that cannot be replaced. Consultation under the FC–RONRW Programmatic Agreement recognizes that certain archaeological and historical features would be lost over time even with agreed upon mitigations in place. These resources include the archaeological artifacts and features between pithouse features within heavily used campsites. It also recognizes that some portions of pithouse features presently not affected or buried beneath core areas would be degraded through time even with the stepwise mitigation measures being implemented. The rate at which they would be lost and ultimate percentage and types of resources lost is not easily

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quantifiable. However, using the percentage of archaeological and historical resources presently impacted by camping and non-camping recreation use in the two river corridors (approximately 21 percent of Middle Fork Salmon River sites and 17 percent of Main Stem Salmon River Sites) and an overall estimated average of 10 percent of any given site generally impacted by recreation use, a conservative estimate would suggest that 2.1 percent of Middle Fork site area and 1.7 percent of Main Stem Salmon Site area would be irretrievably lost during the next 25 years.