

remoteness and solitude. Impacts would be minimal, however, compared to existing user-created trails and campsites.

Given the information on future trends among existing and potential uses provided earlier in this section, over time use/demand will start to exceed the encounter limits and require agency action during the higher use times of the year. Some use/demand will begin to shift into the lower use times of the year spreading use/demand more evenly over the course of the year. These impacts are the same as in Alternative 3.

Competition for fishable water would be the same as Alternative 3. Competition for parking may increase slightly at boater put-ins and take-outs, although evidence suggests that when boating is allowed, overall use in the upper river corridor is low. Competition for campsites would be the same as in Alternative 3. Finally, given recreation trend information, competition for resources in general is likely to continue to increase in the future.

Conflict: Compared to the other alternatives that provide boating opportunities, Alternative 4 has the potential to introduce the least amount of goal interference and the resulting face-to-face conflict. However, it has the potential to introduce more conflict than alternatives 1-3.

In this alternative, some boaters may experience opportunities foregone and the resulting antipathy toward those opposed to boating on the upper Chattooga because they are not allowed to legally float the upper river year-round. In addition, some existing users may experience goal interference because they might encounter boaters on six days in an average year; this goal interference could lead to face-to-face conflict. However, at flows of approximately 450 cfs or higher, the interference from boaters may be mitigated, particularly with those anglers who wade to fish. Additionally, Table 3.3-3 shows that flow levels of approximately 450 cfs and above provide “optimal” boating (up to approximately 650 cfs) and are “acceptable” primarily for bait anglers, some of whom may not be as concerned about solitude experiences as fly and spin anglers.

The take-out at Burrells Ford avoids potential on-river encounters with anglers in the Rock Gorge and in the delayed-harvest area.

This alternative would not address the concerns of those who have a social values based conflict with boating on the upper Chattooga. In addition, conflict will remain for some boaters who want to float all reaches above Highway 28 at all flow levels. Like alternatives 5, 8, 9 and 10, this alternative will create a new “norm” and users with a “zero tolerance” for boating will either adjust or be displaced on six days in an average year.

Recreation Opportunities: When compared to alternatives 1-3, Alternative 4 provides more recreation opportunities for boaters because they can legally float two sections of the river on six days in an average year; however, they have less recreation opportunities than in alternatives 5, 8, 9 and 10 as those alternatives provide more boatable days. Some existing users may have less recreation opportunities because they cannot experience a boat-free opportunity 365 days per year. However, given the separation strategies in Alternative 4 (allowing boating only in the Chattooga Cliffs and Ellicott Rock reaches from December 1 to March 1 at flows of

approximately 450 cfs), impacts to the recreation opportunities of existing users is expected to be minimal.

Cumulative Effects

The vast majority of the recreational effects are direct/indirect as described above. There will be no cumulative adverse effects on boaters from restricting boating by flows, season or zone since there are no other rivers in the region where boating is limited in this manner. There will be a very small cumulative adverse effect on some existing users from allowing some boating use in an average year. This is because, while there are several similarly-sized river segments in the region that permit some boating use at higher flow levels, this option would reduce the number of rivers in the region that do not permit boating at any flow level.

Alternative 5

Direct and Indirect Effects

This alternative maintains current encounter levels in the upper Chattooga River corridor and address social carrying capacity in the same way as alternatives 3 and 4 while providing more boating than Alternative 4 on the main stem Chattooga. Similar to Alternative 4, boating is allowed when it is likely that boaters will not encounter many other river users (especially anglers on river, where existing encounter levels are very low and where asymmetric impacts are most likely) to preserve the unique year-round backcountry angling opportunities, an important component of which is on-river solitude. Separation would be accomplished by limiting boating above Highway 28 using flow levels (approximately 350 cfs or higher at Burrells Ford) and zoning (from Bull Pen Bridge south to Lick Log Creek). The highest optimal flow level for fly and spin angling on the upper Chattooga is approximately 350 cfs (bait angling is optimal up to approximately 450 cfs); conversely, flow levels of approximately 350 cfs or higher also provide optimal boating opportunities (Whittaker and Shelby 2007). Flow levels of approximately 350 cfs occur on 37 days in an average year (Hansen 2007). Using data from the last 67 years the number of boatable days in this alternative would range from a low of 12 to a high of 64 (Hansen 2007). This alternative would provide for more boatable days than Alternative 4.

Social Carrying Capacity/Solitude: Existing backcountry users would exceed the on-trail and on-river encounters per day limits to the same extent as in alternatives 3 and 4 since the same encounter limits are used in all three alternatives (see Table 3.3-6). The effects of adding boating are summarized in Table 3.3-8.

Table 3.3-8. Estimated Effects Of Adding Whitewater Boating To The Number Of Backcountry Encounters In Alternative 5

Reach	Average # of add'l on-trail encounters on an average of 37 days/year	Average # of days on-trail encounter limits will be exceeded due to boating on an average of 37 days/year	Average # of add'l on-river encounters on an average of 37 days/year	Average # of days on-river encounter limits will be exceeded due to boating on an average of 37 days/year
Chattooga Cliffs	0	0	0	0
Ellicott Rock	1.6	6	4.9	7
Rock Gorge	1.5	3	2.9	7
Nicholson Fields	0	0	0	0

As depicted in Table 3.3-8, only two reaches are affected by boating on an average of 37 days per year because of the limitations on boating (flow and zoning) in this alternative. Average daily encounters generated by boaters are lowest on trails because boats are not seen as easily from trails (e.g.: vegetation buffering, distance from the river, etc.). Additionally, daily on-trail encounters are similar between the two affected reaches because Ellicott Rock Reach has a lower percentage of trails within 100 feet of the river and hence boats are harder to spot from trails in that reach.

Average daily encounters are highest on river because on-river recreationists are assumed to encounter an average of 75% of boating groups per day, a higher percentage than on trails. Also, the Ellicott Rock reach has a higher average daily on-river encounter rate because it is expected to be more popular among boaters (Whittaker and Shelby 2007).

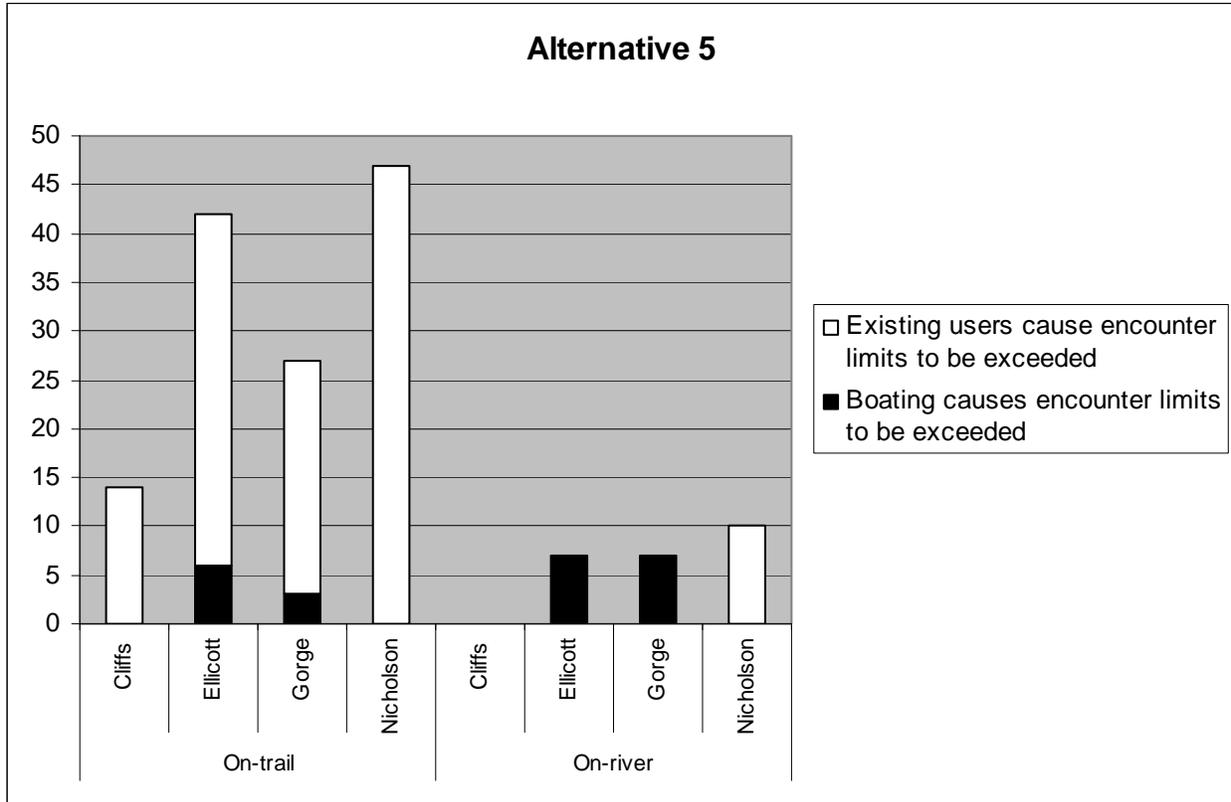
Table 3.3-8 also shows that boaters contribute to exceeding on-trail encounter limits, but compared to existing users, their impact is less (six vs. 36 in Ellicott Rock, for example, as shown in Table 3.3-6). Additionally, many hiker/boater encounters tend to be more similar to hiker/hiker and hiker/angler encounters (Whittaker and Shelby 2007).

On the other hand, boaters are estimated to exceed on-river encounter limits on seven days each for both Ellicott Rock and Rock Gorge reaches. In addition, more boatable days may lead to increased on-river encounters. Should on-river encounters increase, this is a more substantial change than in Alternative 4, especially in the wilderness section along the Ellicott Rock reach and in the Rock Gorge reach. There, according to estimates, existing users have not exceeded the on-river encounter limits on a single day (see Table 3.3-6) and on-river daily encounters are very low (less than one). This is underscored further because angler/boater on-river encounters are among the most important impacts associated with allowing boating use on the upper Chattooga River. Solitude on river is a key ingredient to the unique, year-round backcountry angling opportunities that are desired on the river.

When the boater impacts listed in Table 3.3-8 are combined with the impacts from existing users (Table 3.3-6), the analysis suggests that none of the reaches are expected to exceed the on-trail or on-river encounter limits on more than 20% of days in a year (see Figure 3.3-3). At these encounter levels, actions to reduce encounters are not currently needed to achieve the desired levels of solitude and quality recreation experience defined in this alternative. This in turn ensures that both the Chattooga River's recreation ORV, and in particular its solitude component, are being "protected and enhanced," and the "outstanding opportunities for solitude"

in the Ellicott Rock Wilderness are being preserved at the desired levels for this alternative (the same as alternatives 3 and 4).

Figure 3.3-3. Estimated Number Of Days Per Year On-Trail And On-River Encounters From Existing Users And Boaters Are Likely To Exceed Encounter Limits By Reach For Alternative 5.



Even though Alternative 5 has the same encounter limits as Alternative 4, it provides more boatable days (an average of 37 over the course of an entire year versus six between December 1 and March 1) and therefore a greater likelihood for boater-generated encounters, particularly on river in the Ellicott Rock Wilderness and Rock Gorge reaches. Under Alternative 5, opportunities to enhance solitude, remote experiences and the wilderness character are less than in Alternative 4, especially on river.

Impacts of parking restrictions are the same as in Alternative 2.

Dispersed campsite management and trail management are the same as in Alternative 4. The impacts of potential portage and user-created trails to attraction sites unique to boating may be slightly increased over Alternative 4.

Given the information on future trends among existing and potential uses provided earlier in this section, over time use/demand will start to exceed the encounter limits and require agency action during the higher use times of the year. Some use/demand will begin to shift into the lower use times of the year spreading use/demand more evenly over the course of the year. These impacts

will not occur as quickly or as immediately as in Alternative 2, but will occur sooner than in alternatives 3 and 4.

Competition for fishable water and campsites would be the same as in alternatives 3 and 4. Competition for parking is the same as in alternatives 2 and 3. Finally, given recreation trend information, competition for resources in general is likely to continue to increase in the future.

Conflict: Compared to the other alternatives that provide boating opportunities, Alternative 5 has the potential to introduce more goal interference and the resulting face-to-face conflict than alternatives 4, 9 and 10 but less than Alternative 8. However, it has the potential to introduce more conflict than alternatives 1-3.

Opportunities foregone for some boaters in this alternative and the resulting antipathy is slightly less than Alternative 4 because it allows more boatable days. For some existing users, goal interference and the potential resulting face-to-face conflict with boaters is higher than under Alternative 4 because a boat-free experience is not guaranteed on 37 days in an average year.

Specifically, boaters may interfere with angling on days when boating is allowed although, at flows of approximately 350 cfs or higher, the interference may be mitigated, particularly with those anglers who wade fish. Additionally, Table 3.3-3 shows that flow levels of approximately 350 cfs or higher provide “optimal” boating (up to approximately 650 cfs) and are “acceptable” for fly and spin fishing (up to approximately 450 cfs and approximately 525 cfs respectively) and “optimal” (up to approximately 450 cfs) and “acceptable” (up to approximately 650 cfs) for bait fishing. Additionally, the characteristics of each reach outlined in the affected environment, turbidity and proximity of the angler to the shore may also mitigate direct interference to angling from boating.

The take-out at Lick Log Creek may mitigate interference with anglers in the delayed-harvest area. As outlined earlier, the angler/boater on-river encounters are more impactful than those on trails.

In summary, opportunities foregone for some boaters in this alternative are more than Alternative 8, but less than in the other boating alternatives. The opposite is true for existing users seeking a boat-free experience.

Like alternatives 4, 8, 9 and 10, this alternative would not address the concerns of those who have a social values based conflict with boating on the upper Chattooga. In addition, conflict will remain for some boaters who want to float all reaches above Highway 28 at all flow levels. Boating in this alternative could also result in the displacement of some users who specifically recreate on the upper Chattooga because of the historically boat-free experience. Like alternatives 4, 8, 9 and 10, this alternative will create a new “norm” and users with a “zero tolerance” for boating will either adjust or be displaced on 37 days in an average year.

Recreation Opportunities: Alternative 5 provides more recreation opportunities for boaters than alternatives 4, 9 and 10, but less than Alternative 8. The opposite is true for existing users seeking a boat-free experience.

Cumulative Effects

Cumulative effects are the same as in Alternative 4.

Alternative 8

Direct and Indirect Effects

Alternative 8 generally reduces current on-trail encounter levels below those established for alternatives 3-5, while maintaining the same on-river encounter levels as alternatives 3-5 (see the alternative descriptions in Chapter 2). As in the previous alternatives, this alternative addresses social carrying capacity by establishing encounter limits and a monitoring program that initiates adaptive management actions if limits are exceeded. Under this alternative, the encounter limits established for the Ellicott Rock Wilderness are closer to the desired tolerances in the literature (Whittaker and Shelby 2007) when compared to alternatives 3-5. Alternative 8 does not set on-trail or on-river encounters limits as low as Alternative 2.

This alternative allows boating on the main stem Chattooga from just below private property to the Highway 28 bridge year round with no flow restrictions. Alternative 8 responds directly to the concern that the Forest Service should allow natural river flows to separate users and mitigate potential conflict. This is particularly important on river between boaters and backcountry anglers because on river is where existing encounter levels are very low and where asymmetric impacts are most likely. The latter separation of uses is important to preserve the unique year-round backcountry angling opportunities, an important component of which is on-river solitude.

Since there are no flow restrictions for boating under this alternative, the boatable flow ranges derived from the expert panel were used to estimate boatable days in an average year. There are 114 days which include the “big water boating” (three), “high overlap” (34), and “low overlap” (77) days (see definitions in Whittaker and Shelby 2007). However, Whittaker and Shelby (2007) predict that only half of the 77 “low overlap” days would be used. Even so, half of these boatable days (38 or 77/2) would occur during optimal fly, spin and bait angling flows where there would likely be impacts on greater numbers of anglers than in the other boating alternatives.

Additionally, this is the only alternative in which scenic boating is anticipated on the main stem upper Chattooga. Whittaker and Shelby (2007) estimate this activity would likely occur on 50 days or less per year in the Nicholson Fields reach, and on ten days or less per year in portions of Ellicott Rock and Rock Gorge reaches. This translates into 75 boatable days in an average year for the Chattooga Cliffs reach (3 + 34 + 77/2), 85 for the middle two reaches (3 + 34 + 77/2 + 10 scenic boaters), and 125 (3 + 34 + 77/2 + 50 scenic boaters) for Nicholson Fields. Using data from the last 67 years the number of boatable days would range from 85 to 168 in Nicholson Fields (Hansen 2007), and less in the other three reaches.

Use attributed to scenic boaters would be expected on low-flow summer days when fishing flows are optimal. Scenic boaters tend to be less skilled boaters that might run some segments of the

upper Chattooga that lack more challenging rapids. Scenic boaters may float the segment from the East Fork confluence down to Burrells Ford, but use here is less likely because of the approximate 2.5-mile portage. Scenic boaters may also choose to float the section from Burrells Ford to the Big Bend area; however this would require a portage on the take-out side. The highest use would likely occur in the Nicholson Fields reach and would increase encounters by one per day on 50 days in the summer. This section may also be of interest to boating-based anglers. In the other two reaches, encounters may increase by one per day on ten days in the summer.

Social Carrying Capacity/Solitude: Table 3.3-9 summarizes the average number of daily encounters among existing backcountry users and the number of days per year the encounter limits established in Alternative 8 are expected to be exceeded.

Table 3.3-9. Estimated Contribution Of Existing Backcountry Users To The Number Of Backcountry Encounters In Alternatives 8 - 10 (Independent Of Boating)

Reach	Average # of on-trail encounters per day in an average year	Average # of days on-trail encounter limits are exceeded in an average year	Average # of on-river encounters per day in an average year	Average # of days on-river encounter limits are exceeded in an average year
Chattooga Cliffs	1.6	0	0.2	0
Ellicott Rock	2.9	29	0.6	0
Rock Gorge	4.9	86	0.5	0
Nicholson Fields	6.5	139	2.1	10

The average number of daily on-trail and on-river encounters per year in Table 3.3-9 is another way of broadly depicting the existing level of solitude in each of the reaches (also depicted in tables 3.3-4 and 3.3-5). The Chattooga Cliffs has the lowest on-trail and on-river encounter rate per day signifying the lowest use/encounters, while Nicholson Fields has the highest signifying that it has the highest use/encounters of the four reaches. These average daily encounters are the same for all alternatives (1-10).

The difference lies in the average number of days on-trail encounter limits are exceeded by existing backcountry users. When Table 3.3-9 is compared with Table 3.3-6 in Alternative 3, existing backcountry users in Alternative 8 generally exceed on-trail encounter limits on more days than in alternatives 3-5 (slight exceptions are the upper two reaches) because the on-trail encounter limits are generally more stringent than those in alternatives 3-5 (see the encounter limits in Chapter 2). On the other hand, on-river encounter limits stay the same as in alternatives 3-5. Therefore, no changes are seen in the number of days on-river encounter limits are exceeded.

The effects of adding unlimited whitewater boating on all four reaches (along with some scenic boating) on existing backcountry encounters (which is additive to the above existing user impacts) is summarized in Table 3.3-10.

Table 3.3-10. Estimated Effects Of Adding Whitewater Boating On The Number Of Backcountry Encounters In Alternative 8

Reach	Average # of add'l on-trail encounters in an average year	Average # of days on-trail encounter limits will be exceeded due to boating in an average year	Average # of add'l on-river encounters in an average year	Average # of days on-river encounter limits will be exceeded due to boating in an average year
Chattooga Cliffs	0.5	0	1.6	0
Ellicott Rock	1.0	8	3.0	7
Rock Gorge	1.3	15	2.2	7
Nicholson Fields	1.5	24	2.6	11

Average daily encounters from boaters are lowest on trail and highest on river. Of the on-river encounters, Ellicott Rock is the highest (three) because that reach is expected to be the most popular among boaters, which in turn leads to more boaters and more encounters.

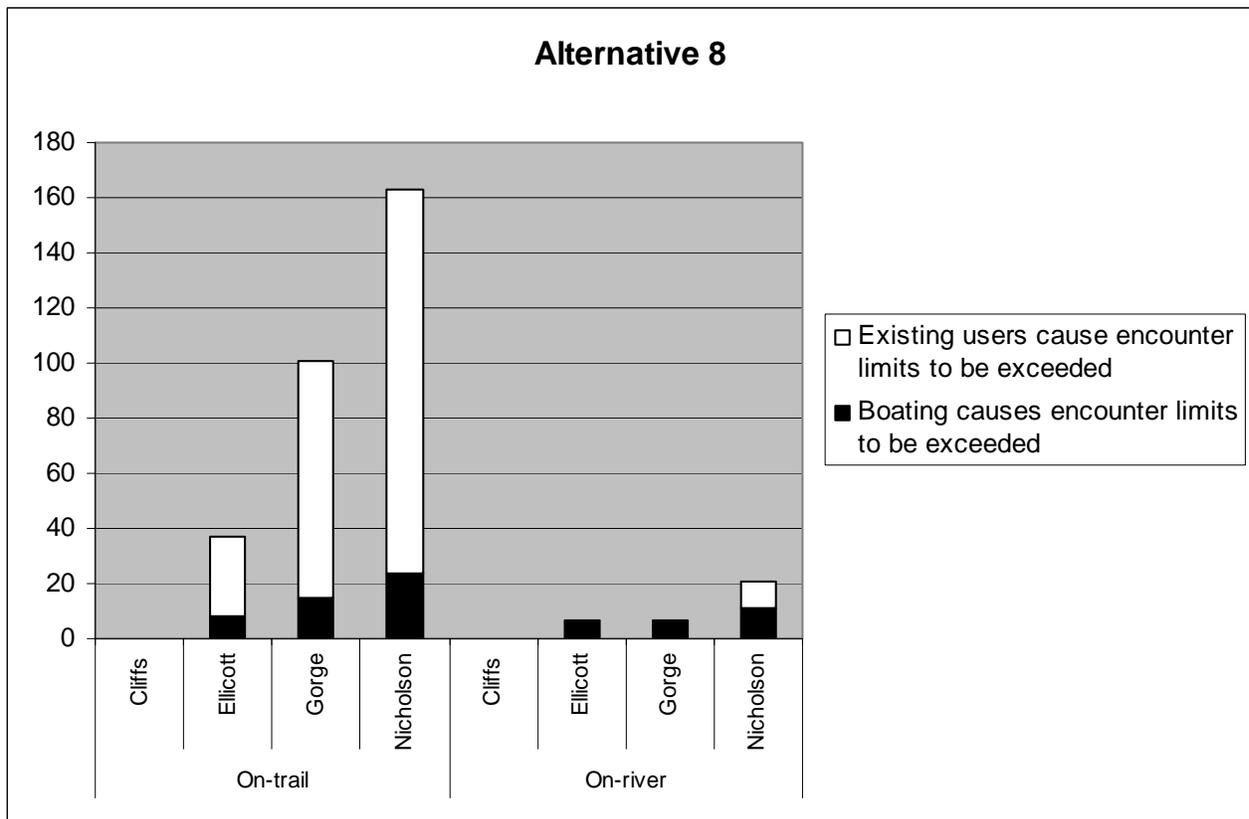
Table 3.3-10 also shows that boaters contribute to exceeding on-trail encounter limits on all four reaches, as opposed to only two in Alternative 5. As expected, encounter limits are exceeded more in Ellicott Rock and Rock Gorge (compared to Alternative 5) because of the more stringent encounter limits in Alternative 8, more boatable days, and a few scenic boaters. On the positive side, the more stringent on-trail encounter limits could, in the long run, equate to lower on-trail encounter rates than in alternatives 1 and 3-5. Relatedly, the encounter limits established for the Ellicott Rock Wilderness are closer to the desired tolerances in the literature than those established for alternatives 3-5. Finally, when impacts are compared to existing users in Table 3.3-9, on-trail encounter impact from boats is less. Additionally, many hiker/boater on-trail encounters tend to be more similar to hiker/hiker and hiker/angler encounters (Whittaker and Shelby 2007).

On river, however, boaters have a greater impact. They are estimated to exceed on-river encounter limits on seven days each for both Ellicott Rock and Rock Gorge reaches, and 11 days for Nicholson Fields reach. The effects appear similar to Alternative 5, but in this case, all four reaches are open to boats, there are more boatable days on each reach, and additionally, on-river encounter limits are exceeded on 11 days in the Nicholson Fields reach. These impacts are more substantial than in alternatives 4 and 5, especially in the wilderness section along the Ellicott Rock reach and in the Rock Gorge reach. There, according to estimates, existing users have not exceeded the on-river encounter limits on a single day (see Table 3.3-9) and their daily on-river encounters are very low (less than one). This is underscored further because angler/boater on-river encounters are among the most important impacts associated with allowing boating use on the upper Chattooga River. Solitude on river is a key determinant to the unique, year-round backcountry angling opportunities that are desired on the river.

Therefore, even though Alternative 8 has more stringent on-trail encounter limits than alternatives 3-5 (which in the long run could equate to lower on-trail encounter rates than in alternatives 1 and 3-5), the on-river encounter limits are the same as in alternatives 3-5 while the on-river impacts are higher. As outlined earlier, this is especially true during “low overlap” flows and while scenic boaters are on the river. Under Alternative 8, opportunities to enhance solitude, remote experiences and the wilderness character while still providing for some boating are less than in alternatives 4 and 5, especially on river.

When the boater impacts (Table 3.3-10) are combined with the impacts from existing users (Table 3.3-9), both the Rock Gorge and Nicholson Fields reaches may exceed encounter limits on trails (Figure 3.3-4 below). At this encounter level, if after two years of implementation, encounter limits are still being exceeded, then indirect measures would be taken to reduce encounter levels for the following two years. If after that time encounters have not been reduced, then a permit system would be implemented to continue maintaining the desired levels of solitude and quality recreation experiences defined in this alternative. These actions ensure that both the Chattooga River’s recreation ORV, and in particular its solitude component, are being “protected and enhanced,” and the “outstanding opportunities for solitude” in the Ellicott Rock Wilderness are being preserved at the desired levels for this alternative.

Figure 3.3-4 Estimated Number Of Days Per Year On-Trail And On-River Encounters From Existing Users And Boaters Are Likely To Exceed Encounter Limits By Reach For Alternative 8.



Impacts of parking restrictions are the same as Alternative 2.

As discussed previously, overall recreation use is expected to increase in the future. Over time use/demand will start to further impinge on the encounter limits during the higher use times of the year. Some use/demand will begin to shift into the shoulder seasons (traditionally lower use times of the year) spreading use/demand more evenly over the course of the year. However, this will not occur as quickly and immediately as in Alternative 2, but sooner than in alternatives 3, 4 and 5.

Competition for fishable water may be higher in this alternative than all others because of the direct interference boaters may cause anglers at various flow levels. Competition for camping may increase if scenic boaters want to take advantage of low flows in the high-use times. Competition for parking may increase at boater put-ins and take-outs, particularly if storm events occur during the high-use seasons. Finally, impacts of competition for resources in the future are the same as in Alternative 4.

Because boating can occur at any flow level, the feeling of solitude that some existing backcountry users get during a boat-free recreation experience may be eroded on an average of 75 days per year in the Chattooga Cliffs, 85 days each in the Ellicott Rock and Rock Gorge Reaches, and 125 days per year in the Nicholson Fields reach. This may be especially true for anglers on boatable days in this alternative when flow levels are optimal for angling. In addition, solitude, generally more easily attained in the winter months, may be more difficult to achieve as boating could increase encounters during that time.

Effects to solitude from trail and campsite management would be similar to those of alternatives 3, 4 and 5. The impacts of potential portage trails and user-created trails to attraction sites unique to boating may be increased more than in all other alternatives, but will likely only minimally influence the perception of remoteness and solitude.

Conflict: Compared to the other alternatives that provide boating opportunities, Alternative 8 has the potential to introduce more goal interference and the resulting face-to-face conflict for some existing users than any other alternative. However, it also provides the least opportunities foregone for boaters than any other alternative.

Goal interference with anglers and other users, including swimmers, is more likely under this alternative, particularly since boating is allowed in all reaches, during all seasons and at all water levels (especially below 350 cfs when bait, spin and fly fishing are optimal – see Table 3.3-3).

Boaters would experience fewer foregone opportunities in this alternative than in any other alternative. Existing users seeking a boat-free experience would have more goal interference in this alternative than in any of the others, particularly at flows below 350 cfs during the optimal angling ranges for spin and fly fishing.

Like alternatives 4, 5, 9 and 10, this alternative would not address the concerns of those who have a social values based conflict with boating being allowed on the upper Chattooga. Conflict for boaters who want to float all reaches above Highway 28 at all flow levels would likely be solved. Boating in this alternative could also result in the displacement of some users who specifically recreate on the upper Chattooga because of the historically boat-free experience. Like alternatives 4, 5, 9 and 10, this alternative will create a new “norm;” users with a “zero tolerance” for boating will either adjust or be displaced on 125 days in an average year.

Recreation Opportunities: Boaters would have more recreation opportunities in this alternative than any other; existing backcountry users seeking a boat-free experience would have the least amount of recreation opportunities under this alternative.

Cumulative Effects

Cumulative effects are the same as in Alternative 4. The vast majority of the recreational effects are direct/indirect as described above. There will be no cumulative adverse effects on boaters. There will be a very small cumulative adverse effect on some existing users from allowing some boating use in an average year. This is because, while there are several similarly-sized river segments in the region that permit some boating use at higher flow levels, this option would reduce the number of rivers in the region that do not permit boating at any flow level.

Alternative 9

Direct and Indirect Effects

Alternative 9 manages encounter levels and addresses social carrying capacity in the upper Chattooga River corridor in the same way as Alternative 8. As is the case with alternatives 4, 5 and 8, this alternative also provides additional boating opportunities on the main stem Chattooga while separating users to mitigate potential conflict. This is particularly important on river between boaters and backcountry anglers because here is where existing encounter levels are very low and where asymmetric impacts are most likely. The latter separation of uses is important to preserve the unique year-round backcountry angling opportunities, an important component of which is on-river solitude.

Separation of users would be accomplished by limiting boating above Highway 28 using flow levels (approximately 350 cfs or higher at Burrells Ford), by season (between November 1 and March 31) and by zoning (boating from below private land south to East Fork Trail). Flow levels of approximately 350 cfs or higher occur during the designated season on 21 days in an average year (Hansen 2007). Using data from the last 67 years the number of boatable days in this alternative would range from a low of four to a high of 38 (Hansen 2007).

Social Carrying Capacity/Solitude: Existing backcountry users would exceed the on-trail and on-river encounter limits to the same extent as in Alternative 8. The effects of adding boating are summarized in Table 3.3-11.

Table 3.3-11. Estimated Effects Of Adding Whitewater Boating On The Number Of Backcountry Encounters In Alternative 9

Reach	Average # of add'l on-trail encounters on an average of 21 days/year	Average # of days on-trail encounter limits will be exceeded due to boating on an average of 21 days/year	Average # of add'l on-river encounters on an average of 21 days/year	Average # of days on-river encounter limits will be exceeded due to boating on an average of 21 days/year
Chattooga Cliffs	0.5	0	1.6	0
Ellicott Rock	1.4	2	4.4	3
Rock Gorge	0	0	0	0
Nicholson Fields	0	0	0	0

Average daily encounters from boaters in Table 3.3-11 shows that the greatest impacts from boats are on river in the Ellicott Rock reach. Note that average daily encounters cannot be compared across alternatives since they are based on the average number of boatable days per year, which vary by alternative.

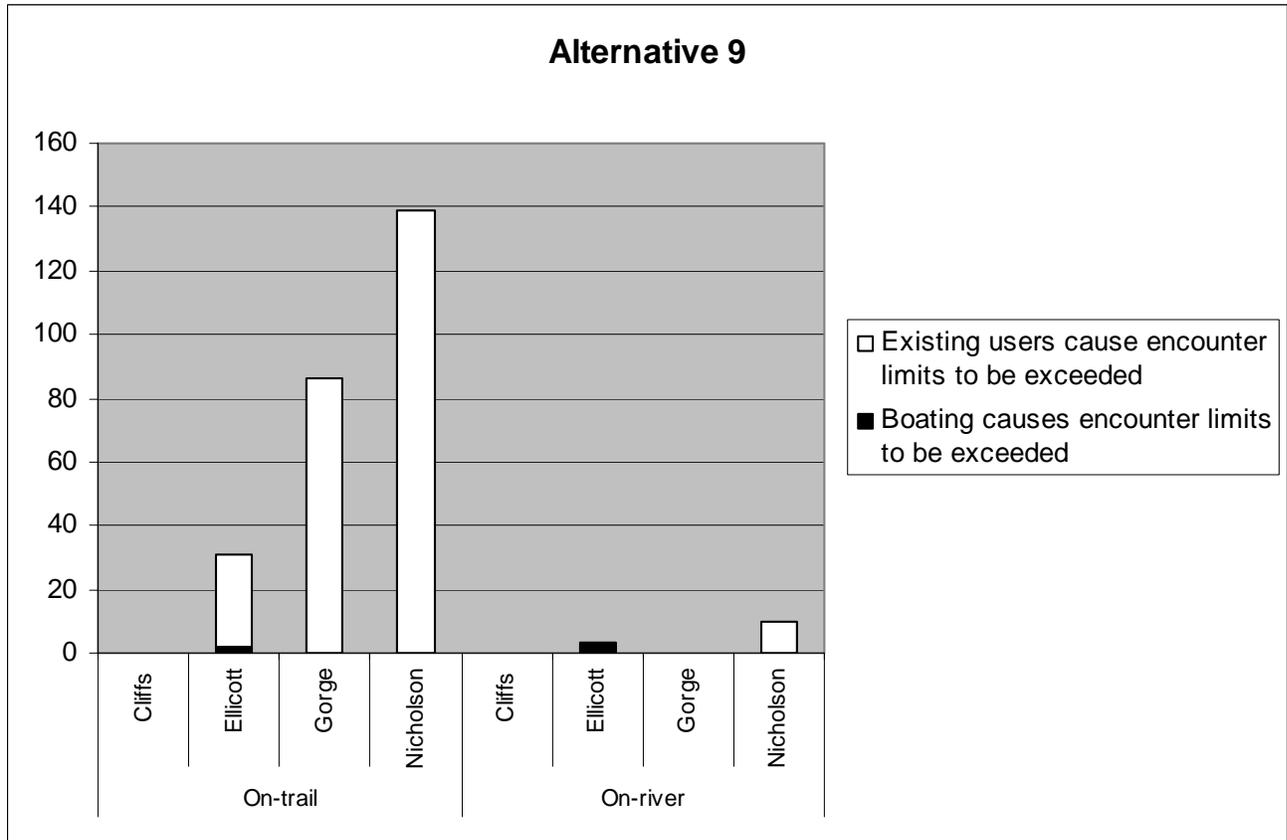
Table 3.3-11 also shows that boaters contribute to exceeding on-trail encounter limits in the Ellicott Rock reach alone (two days). This is less than boating contributions in the same reach in alternatives 5 and 8, but more than in Alternative 4. However, like Alternative 8, Alternative 9 has more stringent on-trail encounter limits than alternatives 1 and 3-5 which, in the long run, could equate to lower on-trail encounter rates. Relatedly, the encounter limits established for the Ellicott Rock Wilderness under this alternative are closer to the desired tolerances in the literature than are those in alternatives 3, 4 and 5. Finally, when impacts are compared to existing users in Table 3.3-9, on-trail encounter impacts from boats in Alternative 9 are very small. Additionally, many hiker/boater on-trail encounters tend to be more similar to hiker/hiker and hiker/angler encounters (Whittaker and Shelby 2007).

Table 3.3-11 also shows that boaters exceed on-river encounter limits in the Ellicott Rock reach alone (three days). This is less than boating contributions in the same reach in alternatives 5 and 8, but more than Alternative 4 by two days. Additionally, existing users have not exceeded the on-river encounter limits on a single day in the Ellicott Rock reach (see Table 3.3-9) and their estimated daily on-river encounters are very low (less than one). This impact is underscored further because angler/boater on-river encounters are among the most important impacts associated with allowing boating use on the upper Chattooga River. Solitude on river is a key determinant to the unique year-round backcountry angling opportunities that are desired on the river.

Under Alternative 9, opportunities to enhance solitude, remote experiences and the wilderness character while still providing boating opportunities are greater than in alternatives 5 and 8, and possibly than in Alternative 4, especially on river. Alternative 9 appears better than Alternative 4 in this respect because of the more stringent encounter limits in wilderness that more closely align to the tolerances in the literature (Whittaker and Shelby 2007). In the long run, these could equate to lower encounter rates in Alternative 9 than in Alternative 4. On the negative side, Alternative 9 does have the potential for two more on-river encounters in the Ellicott Rock Wilderness than Alternative 4 due entirely to the higher number of boatable days.

The analysis suggests that independent of boater impacts (Table 3.3-11), existing user impacts (Table 3.3-9) in the Rock Gorge and Nicholson Fields reaches may exceed encounter limits on trails (Figure 3.3-5 below), the same as Alternative 8. If encounter limits are still being exceeded after two years of implementation, then indirect measures would be taken to reduce encounter levels. If after two years, encounter levels have not been reduced, a permit system would be implemented to achieve the desired levels of solitude and quality recreation experiences. These actions ensure that both the Chattooga River's recreation ORV, and in particular its solitude component, are being "protected and enhanced," and the "outstanding opportunities for solitude" in the Ellicott Rock Wilderness are being preserved at the desired levels for this alternative.

Figure 3.3-5. Estimated Number Of Days Per Year On-Trail And On-River Encounters From Existing Users And Boaters Are Likely To Exceed Encounter Limits By Reach For Alternative 9.



Impacts of parking restrictions are the same as Alternative 2.

As discussed previously, overall recreation use is expected to increase in the future. Over time use/demand will start to impinge on the encounter limits during the higher use times of the year. Some use/demand will begin to shift into the shoulder seasons (traditionally lower use times of the year) spreading use/demand more evenly over the course of the year. However, this will not occur as quickly and immediately as in Alternative 2, but sooner than in alternatives 3, 4 and 5.

Requiring boaters to take out at the East Fork confluence will increase on-trail encounters inside the Ellicott Rock Wilderness. Conversely, it will reduce on-river encounters with anglers through the most heavily fished portion the Ellicott Rock reach. As mentioned earlier, the angler/boater on-river encounters are more impactful than those on trails.

Competition for fishable water would be the same as in Alternative 1. Competition for parking is the same as Alternative 2, as is predicted increased competition for resources in the future.

Effects to solitude from trail and campsite management will be similar to alternatives 3, 4, 5, 8 and 10. The impacts of potential portage trails and user-created trails to attraction sites will minimally influence the perception of remoteness and solitude.

Conflict: Compared to the other alternatives that provide boating opportunities, Alternative 9 has the potential to introduce more goal interference and the resulting potential face-to-face conflict than alternatives 1, 2, 3 and 4, but less than alternatives 5, 8 and 10 (even though 10 has fewer boatable days than 9, boating occurs on all four reaches in 10).

Specifically, boaters may interfere with angling on days when boating is allowed although, at flows of approximately 350 cfs or higher, the interference may be mitigated, particularly with those anglers who wade to fish. Additionally, Table 3.3-3 shows that flow levels of approximately 350 cfs or higher provide “optimal” boating (up to approximately 650 cfs) and are “acceptable” for fly and spin fishing (up to approximately 450 cfs and 525 cfs respectively) and “optimal” (up to approximately 450 cfs) and “acceptable” (up to approximately 650 cfs) for bait fishing. Additionally, the characteristics of each reach outlined in the affected environment, turbidity and proximity of the angler to the shore (due to high flows) may also mitigate interference to angling from boating.

As mentioned above, the take-out at the East Fork Trail will mitigate interference with anglers through the heaviest fished portion the Ellicott Rock reach just upstream of Burrells Ford.

Opportunities foregone for some boaters in this alternative and the resulting antipathy are more than alternatives 5, 8 and possibly 10, but less than all the other alternatives. Goal interference for some existing backcountry users seeking a boat-free experience is less than alternatives 5, 8 and possibly 10, but more than all the other alternatives.

Like alternatives 4, 5, 8 and 10, this alternative would not address the concerns of those who have a social values based conflict with boating being allowed on the upper Chattooga. In addition, conflict will remain for some boaters who want to float all reaches above Highway 28 at all flow levels. Boating in this alternative could also result in the displacement of some users who specifically recreate on the upper Chattooga because of the historically no-boating experience although, given the low number of boatable days, this is unlikely. Like alternatives 4, 5, 8 and 10, this alternative will create a new “norm” and users with a “zero tolerance” for boating will either adjust or be displaced on 21 days in an average year.

Recreation Opportunities: In Alternative 9, boaters have more recreation opportunities than in alternatives 1, 2, 3 and 4 and less than in alternatives 5, 8 and 10. The opposite is true for existing backcountry users seeking a boat-free experience.

Cumulative Effects

Cumulative effects are the same as in Alternative 4.

Alternative 10

Direct and Indirect Effects

Alternative 10 manages encounter levels and addresses social carrying capacity in the upper Chattooga River corridor in the same way as alternatives 8 and 9. As is the case with

alternatives 4, 5, 8 and 9, this alternative also provides additional boating opportunities on the main stem Chattooga while separating users to mitigate potential conflict. This is particularly important on river between boaters and backcountry anglers because here is where existing encounter levels are very low and where asymmetric impacts are most likely. The latter separation of uses is important to preserve the unique, year-round backcountry angling opportunities, an important component of which is on-river solitude.

Separation of users would be accomplished by limiting boating above Highway 28 using flow levels (approximately 350 cfs or higher at Burrells Ford) and by season (between November 1 and March 1). Flow levels of approximately 350 cfs occur during the designated season on 14 days in an average year (Hansen 2007). Using data from the last 67 years the number of boatable days in this alternative would range from a low of zero to a high of 28 (Hansen 2007).

Carrying Capacity/Solitude: Existing backcountry users would exceed the on-trail and on-river encounters per day limit to the same extent as Alternative 8. The effects of adding boating are summarized in Table 3.3-12.

Table 3.3-12. Estimated Effects Of Adding Whitewater Boating On The Amount Of Backcountry Encounters In Alternative 10.

Reach	Average # of add'l on-trail encounters on an average of 14 days/year	Average # of days on-trail encounter limits will be exceeded due to boating on an average of 14 days/year	Average # of add'l on-river encounters on an average of 14 days/year	Average # of days on-river encounter limits will be exceeded due to boating on an average of 14 days/year
Chattooga Cliffs	0.6	0	1.6	0
Ellicott Rock	1.4	1	4.4	2
Rock Gorge	1.4	1	2.6	2
Nicholson Fields	1.9	3	2.9	2

Average daily encounters from boaters in Table 3.3-12 shows that the greatest impacts from boats are on river in the Ellicott Rock reach. Note that average daily encounters cannot be compared across alternatives since they are based on the average number of boatable days per year, which vary by alternative. The Ellicott Rock reach is the most impacted because this is the reach that is expected to be most popular among boaters and would therefore receive the most use/encounters.

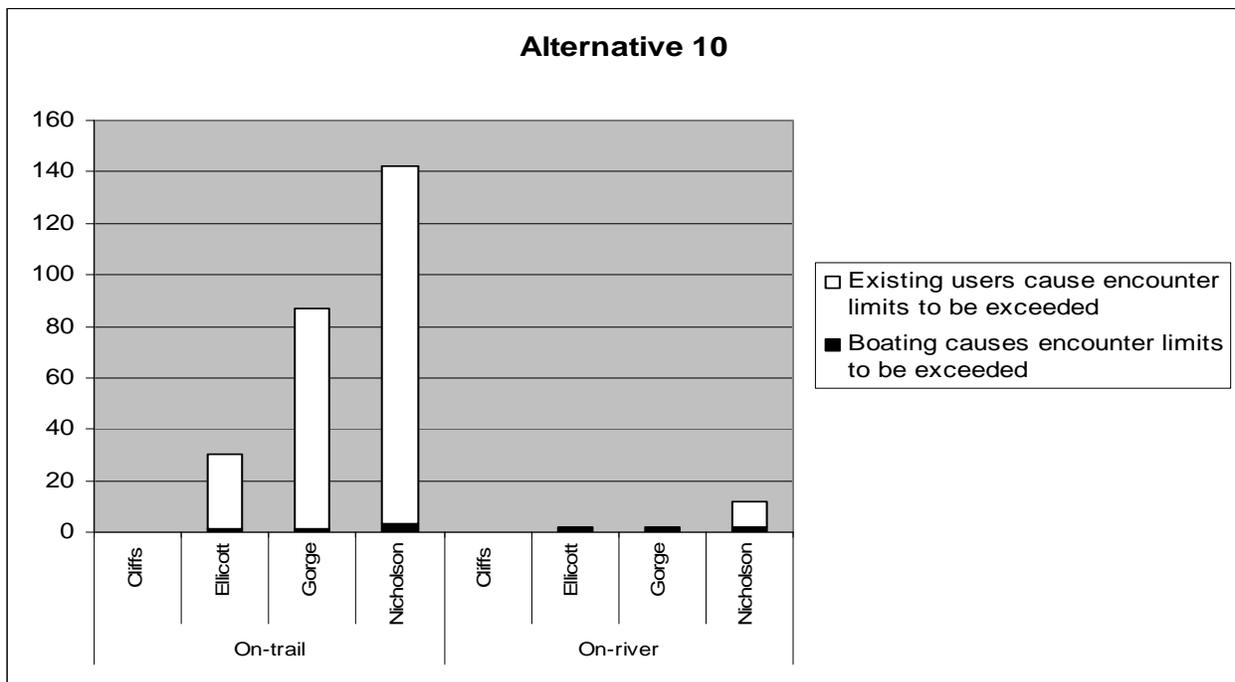
Table 3.3-12 also shows that boaters contribute to exceeding on-trail encounter limits in the three lower reaches. These on-trail impacts are less than in alternatives 5 and 8, but more than in alternatives 4 and 9. However, like alternatives 8 and 9, Alternative 10 has more stringent on-trail encounter limits than alternatives 1 and 3-5, which, in the long run, could equate to lower on-trail encounter rates than would occur in those alternatives. Relatedly, the encounter limits established for the Ellicott Rock Wilderness are closer to the desired tolerances in the literature than those in alternatives 3-5. Finally, when impacts are compared to existing users in Table 3.3-9, on-trail encounter impact from boaters in Alternative 10 is very small. Additionally, many hiker/boater on-trail encounters tend to be more similar to hiker/hiker and hiker/angler encounters (Whittaker and Shelby 2007).

Table 3.3-12 also shows that boaters exceed on-river encounter limits in the three lower reaches (two in Ellicott Rock, two in Rock Gorge, and two in Nicholson Fields). This is less than boating contributions in the same reach in alternatives 5 and 8, but more than in alternatives 4 and 9. Existing users have not exceeded the on-river encounter limits on a single day in the Ellicott Rock and Rock Gorge reaches (see Table 3.3-9) and their estimated daily on-river encounters are very low (less than one). This impact is underscored further because angler/boater on-river encounters are among the most important impacts associated with allowing boating use on the upper Chattooga River. Solitude on river is a key determinant to the unique, year-round backcountry angling opportunities that are desired on the river.

In summary, under Alternative 10, opportunities to enhance solitude, remote experiences and the wilderness character while still providing boating are less than in alternatives 4 and 9, but greater than in alternatives 5 and 8, especially on river.

Independent of boater impacts (Table 3.3-12), existing user impacts (Table 3.3-9) in the Rock Gorge and Nicholson Fields reaches may exceed the desired encounter levels on trails (Figure 3.3-6 below), the same as in alternative 8 and 9. At this encounter level, if, after two years of implementation, encounter limits are still being exceeded, then indirect measures would be taken to reduce encounter levels. If after two years, encounters have not been reduced, then a permit system would be implemented to achieve the desired levels of solitude and quality recreation experiences. These actions ensure that both the Chattooga River’s recreation ORV, and in particular its solitude component, are being “protected and enhanced,” and the “outstanding opportunities for solitude” in the Ellicott Rock Wilderness are being preserved at the desired levels for this alternative.

Figure 3.3-6. Estimated Number Of Days Per Year On-Trail And On-River Encounters From Existing Users And Boaters Are Likely To Exceed Encounter Limits By Reach For Alternative 10.



Impacts of parking restrictions are the same as Alternative 2.

To a lesser extent than in Alternative 2, the encounter limits for alternatives 8, 9 and 10 will serve to more closely align the upper Chattooga to the wilderness and remote backcountry settings described in the literature (Whittaker and Shelby 2007).

Competition for fishable water would be the same as in Alternative 1. Competition for parking and resources in the future is the same as in Alternative 9.

Effects to solitude from trail and campsite management will be similar to alternatives 3, 4, 5, 8 and 9. The impacts of potential portage trails and user-created trails to attraction sites will minimally influence the perception of remoteness and solitude.

Conflict: Compared to the other alternatives, Alternative 10 has the potential to introduce more goal interference and the resulting face-to-face conflict than alternatives 1, 2, 3, 4 and 9 but less than alternatives 5 and 8.

Opportunities foregone for some boaters and the resulting antipathy are less than in alternatives 1, 2, 3 and 4, about the same as in Alternative 9, and more than in alternatives 5 and 8. The opposite is true for some existing users who might experience goal interference due to boaters and the potential resulting face-to-face conflict.

Specifically, boaters may interfere with angling on days when boating is allowed although, at flows of approximately 350 cfs or higher, the interference may be mitigated, particularly with those anglers who wade to fish. Additionally, Table 3.3-3 shows that flow levels of approximately 350 cfs or higher provide “optimal” boating (up to approximately 650 cfs) and are “acceptable” for fly and spin fishing (up to approximately 450 cfs and 525 cfs respectively) and “optimal” (up to approximately 450 cfs) and “acceptable” (up to approximately 650 cfs) for bait fishing. Additionally, the characteristics of each reach outlined in the affected environment, turbidity and proximity of the angler to the shore may also mitigate interference to angling from boating.

Like alternatives 4, 5, 8 and 9, this alternative would not address the concerns of those who have a social values based conflict with boating being allowed on the upper Chattooga. In addition, conflict will remain for boaters who want to float all reaches above Highway 28 at all flow levels. Boating in this alternative could also result in the displacement of some users who specifically recreate on the upper Chattooga because of the historically no-boating experience although, given the low number of boatable days, this is unlikely. Like alternatives 4, 5, 8 and 9, this alternative will create a new “norm” and users with a “zero tolerance” for boating will either adjust or be displaced on 14 days in an average year.

Recreation Opportunities: Recreation opportunities for boaters in this alternative are less than alternatives 5 and 8, about the same as in Alternative 9 but more than in alternatives 1, 2, 3 and 4. The opposite is true for existing users seeking a boat-free experience.

Cumulative Effects

Cumulative effects are the same as Alternative 4.

Alternatives 3-10 Summary Charts

Figure 3.3-7. Estimated Number Of Days Per Year On-Trail Encounters From Existing Users And Boaters Are Likely To Exceed Encounter Limits By Reach And Alternative.

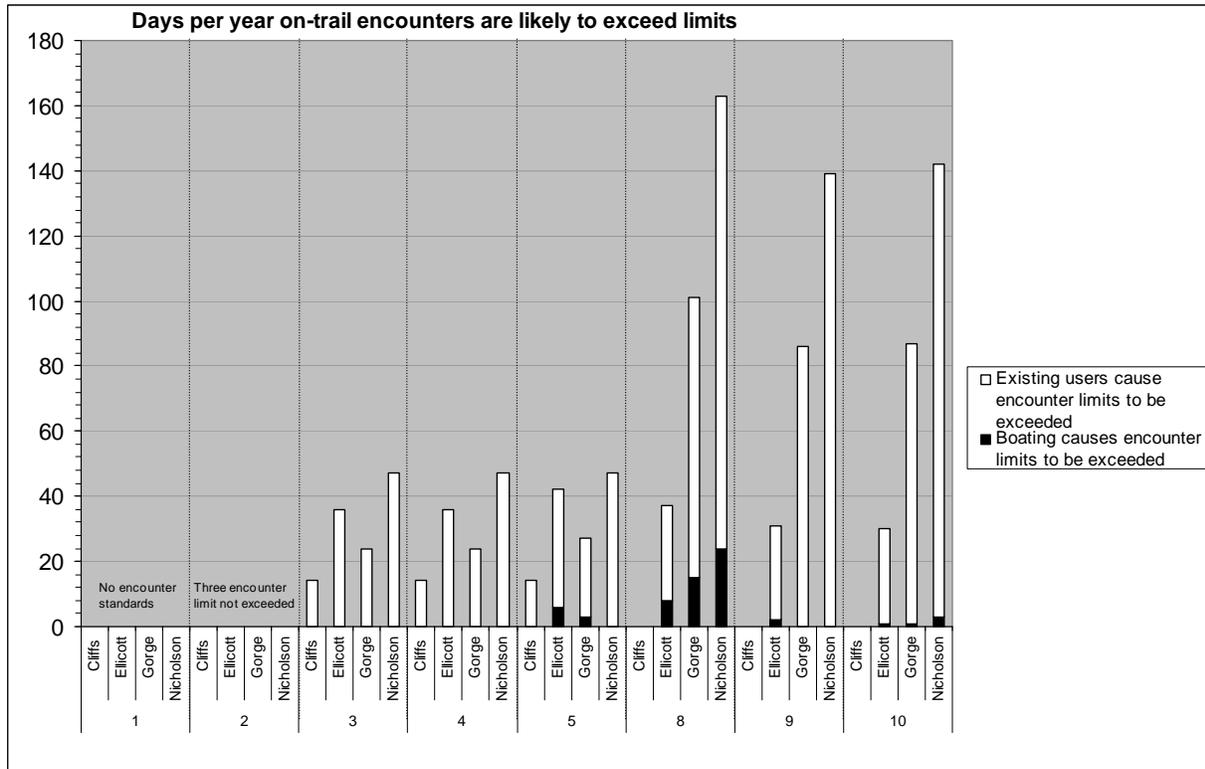


Figure 3.3-8. Estimated Number Of Days Per Year On-River Encounters From Existing Users And Boaters Are Likely To Exceed Encounter Limits By Reach And By Alternative.

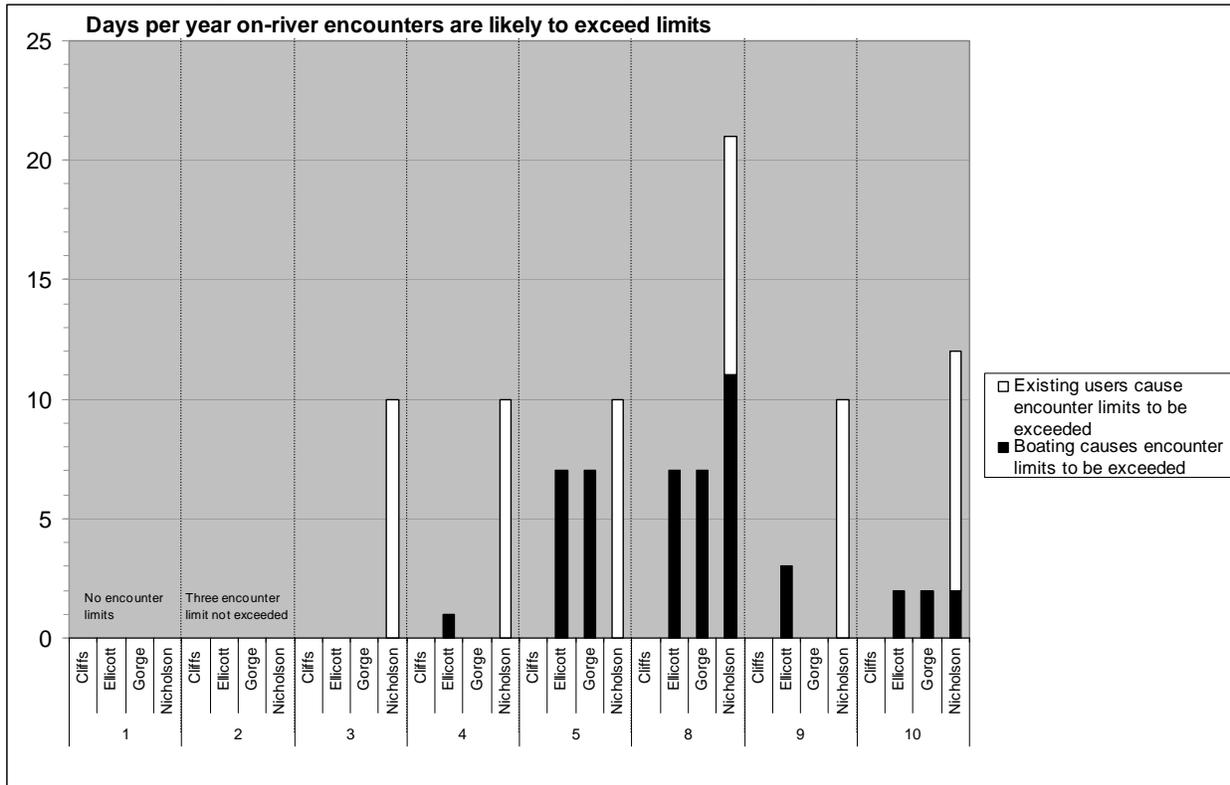


Figure 3.3-9. Estimated Number Of Boating Days Per Year By Alternative And Reach.

