EXHIBIT 11

HOW CREEK BOATING DEGRADES THE WATER QUALITY OF THE CHATTOOGA IN NORTH CAROLINA[1]

We know the baseline condition of the riparian corridor, trout buffer, and water quality in North Carolina was essentially pristine and *"near natural"* prior to the Forest Service introducing a recreational use which is highly incompatible with this part of the Chattooga—creek boating. We know this because the Forest Service offered the proof in its 2007 Biophysical Inventory. Essentially, this inventory established that there were no erosion sites with any recorded square footage in North Carolina, save a single location identified close to the state line of North Carolina and South Carolina. In contrast, the Forest Service documented the existence of 177 erosion sites in South Carolina—where boating had been taking place for decades. Such erosion sites constitute possible sources of visible sediment flows into the river.

Creek boating constitutes a highly specialized form of whitewater kayaking, that is pursued by a small subset of expert paddlers, on narrow and steeply entrenched creeks, with steep descents, during either very little or very high volumes of water flow. The associated infrastructure demands of *creek boating* are *entirely* different from canoeing on the Catawba, the *highly regulated* Boundary Waters of Minnesota, or kayaking the Merced out west.

Creek boaters must often portage—*unpredictably so—especially on the Chattooga in North Carolina*—because of the large number of massive fallen hemlocks that create life threatening stream-wide strainers which can develop unexpectedly and which may not have blocked the channel one day earlier. *This inescapable but unpredictable need to evacuate the river distinguishes creek boating from other recreational users of the Chattooga such as anglers, waders, hikers, swimmers.* Boaters cannot always choose where they will evacuate the Chattooga. *Nature makes that choice for them each and every day*—and nature changes conditions each and every day.

Because of the hemlock problem as well as other severe terrain conditions present on this section of the Chattooga, creek boating necessitates an indeterminate number of *boater created river evacuation points*, portage trails, and boater launch sites. The unregulated manner in which portaging occurs causes the ground cover within North Carolina's trout buffer to become unlawfully denuded. Such *unregulated infrastructure development* produces specific point sources of visible sediment flows into the creek—similar to what can result when off road vehicles, or trail bicycles, or horses are present on trails located on erosive soils on steep slopes adjacent to mountain streams.

Unfortunately, the steeply entrenched slopes, and gorge like conditions that flank both sides of this narrow creek *in North Carolina* are *further exacerbated by* the presence of highly erosive soils that are unsuitable for *any kind of portage trail per the standards set forth in the Soils Survey published by the Natural Resources Conservation Service.* In North Carolina, in many

[1] Photographs and narrative constitute the work product of William Floyd.

places along the creek, the impenetrable jungle of rhododendron and laurel thickets grow up to the water's edge. Undisturbed, the spreading roots of these thickets serve to absorb over 80-100 inches of annual rainfall in this rainforest like microclimate, while preventing the fragile soils from eroding down the steep slopes into the creek. When disturbed, the slopes become less stable and subject to erosion into the creek. *As boater attempt to portage, they cannot pass their boats through these impenetrable jungles of rhododendron without breaking off limbs or even cutting out entire rhododendron shrubs*—as evidenced by the photo below.

View is looking downhill at boater created portage trail where rhododendron has been sawed off.

This photograph was taken several months later on September 25, 2015. It shows how the stub of the sawed off rhododendron *has now been unlawfully pulled out of the ground*—perhaps in an effort to conceal this unlawful activity by paddlers. The removal of the sawed off rhododendron

root occurred subsequent to my having identified this problem for the Forest Service via public comments made on July 7, 2015.This boater created portage trail has now been denuded of all ground cover and is channeling sediment into the creek—as a point source of water pollution.

Here is another series of photographs with the point of view looking uphill instead of downhill.

June 29, 2015 @ approx. 35 03 00.94 N 83 07 09.47 W

Same view on September 25, 2015. Note the bare soil of the portage trail caused by boaters dragging our pushing their boats up the hill from where they are evacuating the river.
The photo below shows the eddy on river right which paddlers are using to evacuate from the river at Boater Created Erosion Site B-3.

Note the eddy spot on river right. This is where boaters are evacuating the river. This unpermitted development within the trout buffer now channels visible sediment flows into the creek as point source of pollution.

These undesirable conditions are further aggravated because paddlers lack the capacity to scout large sections of the river before setting out to float it. Because the only designated trail frequently runs along the ridges and away from the creek, boaters lack any convenient way to scout out obstructions that may have developed in the channel. In many places, the only way to discover such obstacles would be either to wade the creek before floating, or to develop paddler created spur trails down to the water's edge through the jungle of rhododendron and mountain laurel. The former is impractical and the latter is unlawful. Hence, creek boaters cannot know with any certainty where they are going to need to portage on any given day. This is particularly true of the gorge like terrain found on a lengthy section of the river below Cane Creek—which paddlers have taken to referring as "the Alleyway." *Rediscovering the Chattooga Headwaters*, Don Kinser, at page 10. https://fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5355007.pdf (the "Kinser Paddler Report").

Were an obstacle such as a hemlock log to become wedged tight into this narrow canyon flanked with vertical cliffs, a creek boater would have no way to know that this had occurred

because there is no trail access on either side of this gorge area from which he might scout in advance. It would prove highly difficult to portage a kayak without some disturbance of either the bryophytes growing on the rocks or the fragile ground cover that exists on the top edge of the cliffs.

In fact, the *expert panel of paddlers* who were given the opportunity to float the North Carolina part of the river prior to the lifting of the boating ban had this to say about portaging on this particular section of the river:

“We reached the sieve shortly after noon. The sieve rapid is a difficult obstacle and everyone portaged. The logistics of this portage were made more difficult by our large group (this was really one of the few places our group size was much of a liability). It is very difficult to stage the group down into the ‘eddy’ above the sieve and exit your boat. I say ‘eddy’ because it is more like a slow spot in the current up against a steep, slippery, vertical rock wall. Milt was able to jump out of his canoe here more easily and helped us exit our kayaks.

It took a long time to portage. It was slippery and crowded. Someone wisely set a safety rope and we worked together to ferry our boats across a difficult spot. Once across, we had to put in immediately above a challenging 6 foot, class 4 ledge.” Kinser Paddler Report at pages 11-12.

Of course, this expert panel of paddlers offered no report on how much damage was done to the bryophytes growing on the rocks from dragging or pushing boats across them or to the rhododendron growing on the top edge of the vertical walls. There is the implicit assumption that such damage is acceptable. Below are two photos of the “Alleyway” taken March 25, 2016.

These two photographs demonstrate the gorge conditions that exist on one part of the river in North Carolina. When a hemlock eventually blocks this channel, it is hard to see how paddlers

will be able portage without damaging the *"near natural"* condition of the riparian corridor, trout buffer and water quality.

In contrast to paddlers, other recreational users of the river such as anglers, waders, hikers, swimmers, and campers avoid damaging the resource by carefully limiting where they enter or exit the river. *Unlike boaters, these river users are not similarly compelled to evacuate the river at unanticipated or undesirable locations.*

In fact, for over three decades, up until the introduction of boating in 2012, all *other* recreational uses had enjoyed the Chattooga in North Carolina *without producing any damage* to the *"near natural*" condition of the riparian corridor, trout buffer, and water quality of North Carolina. We know this from the Forest Service's 2007 Biophysical Inventory. It is only after the introduction of creek boating that significant degradation has occurred.

There is a second compelling distinction between creek boating and other recreational uses of the fragile Chattooga in North Carolina. Each and every individual paddler gets to decide when he/she wishes to evacuate the river—*for whatever reason—even if there is no life threatening obstacle* that needs to be avoided. *Like a ride in an amusement park*, creek boaters enjoy refloating certain whitewater features, and will do so if sufficient infrastructure can be created to facilitate that objective. This strong motivation *to repeat* certain whitewater features further *encourages the unregulated creation* of an indeterminate number of river evacuation points, portage trails, and relaunch points back into the river.

However, because of the steeply entrenched nature of the Chattooga in North Carolina, and because a flat flood plain is minimal to nonexistent in most locations, the precise location which offers the greatest convenience to evacuate the river to avoid some obstacle, or to refloat some interesting whitewater feature, may constitute the poorest place to evacuate in terms of preserving the trout buffer and preventing additional soil from being displaced into the water as sediment. This is the reality that confronts paddlers—*even the most environmentally conscious paddlers.*

When the current is ripping, the paddler must simply find *an eddy* that will allow him/her to get out of the boat as near to the bank as possible, to avoid being swept downstream—*something which the expert panel acknowledged can be difficult to do*. The boater must take what the river offers in terms of finding an eddy. After exiting the boat while harbored within such an eddy, the paddler may find themselves standing several feet below the top of the bank, or hundreds of feet below a cliff, with little flexibility to move up or down the stream to locate a more suitable point to climb up onto the bank, without risking being swept away by the ripping current. As a consequence, the boater must take a 35-50 pound, and six to eight foot long boat, and lift it up or push it onto the top of the river bank. This might require lifting the boat up three or four feet above where the boater is standing in the eddy—which requires a degree of strength and coordination. The boater must then follow the boat in climbing up onto the bank. The risk of all

this unavoidable physical exertion of lifting the boat out of the water and pushing it up across the top of the bank *is the removal of any ground cover similar to a blade being pushed/pulled across the ground by a tractor*. This action disturbs the roots of the ground cover which can cause the bank to become destabilized to the point of collapsing into the river. *This is exactly the kind of development damage which North Carolina's trout buffer restriction is intended to prevent.*

Here are two photographs taken September 25, 2015 of the river right bank where boaters have created a river evacuation site (Boater Created Erosion Site B-2) *merely for the convenience of being able to repeat floating a small plunge pool located just above*. Boater Created Erosion Site B-2 can be found at approximately 35 03 03.91 N, 83 07 04.10 W.

Boater Created Erosion Site B-2 & Unmaintained trail

This first photo evidences how boaters have created a new unmaintained portage trail—*not for safety*—but for mere convenience. This trail is channeling water to flow down the hill to this point where the top of the bank is being eroded away. You can see the edge of the top of the bank where the act of shoving the boat up onto the top of the bank has denuded the top of the bank of its ground cover.

Boater Created Erosion Site B-2 Viewed From the Creek

The second photo was taken standing in the creek. It demonstrates how the paddler must lift the boat up two to three feet above the water to get it on top of the bank. The second photo evidences the extent to which the top edge of the riverbank is being destroyed by this activity—which is contributing to the head erosion that is occurring from the river side of the bank. Clearly, this soil is ending up in the creek.

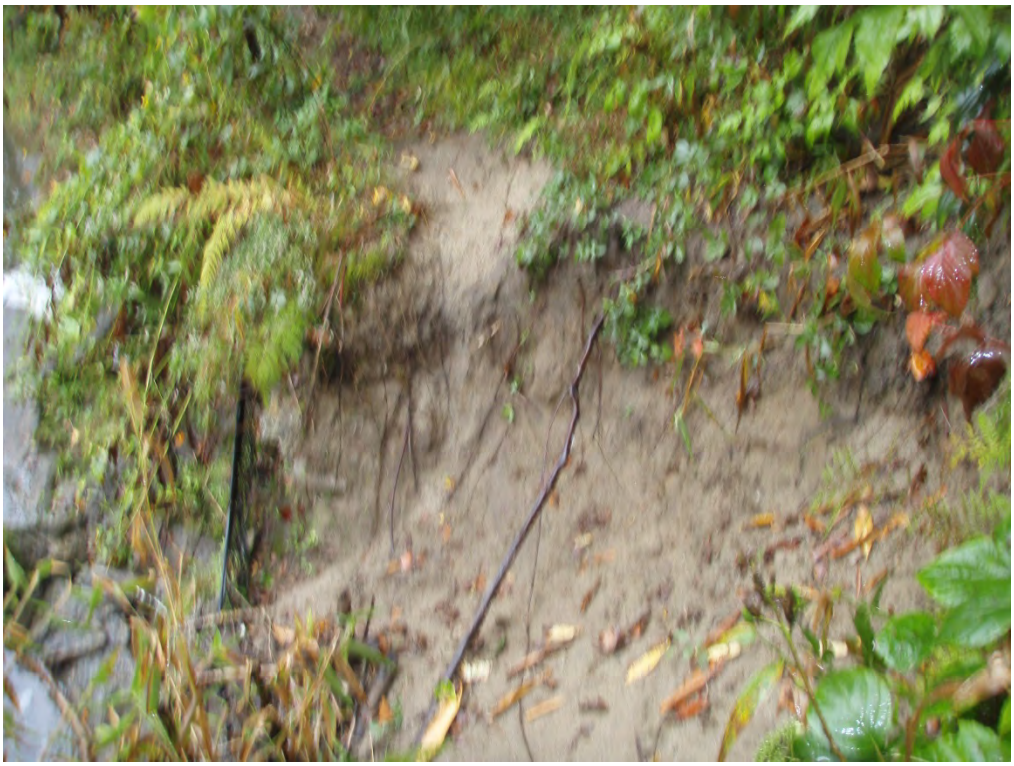
These photos demonstrate why boating is incompatible with this section of the river. Because of the fragile nature of the soils and steep slopes associated with the Chattooga in North Carolina, each of these boater created river evacuation points, portage trails, and boat re-launch sites can become chronic sources of visible flows of displaced soil into the creek.

To draw a third distinction between creek boating and other recreational uses of the North Carolina section of the Chattooga, *creek boating* directly destroys the trout buffer, and causes chronic sources of sediment to develop, because paddlers *must "seal launch"* into the Chattooga when the current is ripping with flows greater than 350 cfs. During these mandatory high flows, a paddler cannot put the boat into the water before entering its cockpit, because the ripping current would sweep them away. *Instead, the paddler must climb into the cockpit of the kayak and then launch themselves into the narrow creek by scooting the bottom of the boat across the*

top of the bank while simultaneously using their hands or paddle to accelerate the force of that forward motion. This is called "*seal launching*".

The destructiveness of a creek boat being "*seal launched"* is analogous to a plow blade being pushed/dragged by a tractor across the top of the riverbank. *It is highly destructive when repeated over and over again.* In fact, it can cause the top of a fragile riverbank to destabilize and to collapse.

Here are a series of photographs documenting the unavoidable impacts/consequences of boaters "seal launching" into the creek from the river bank.



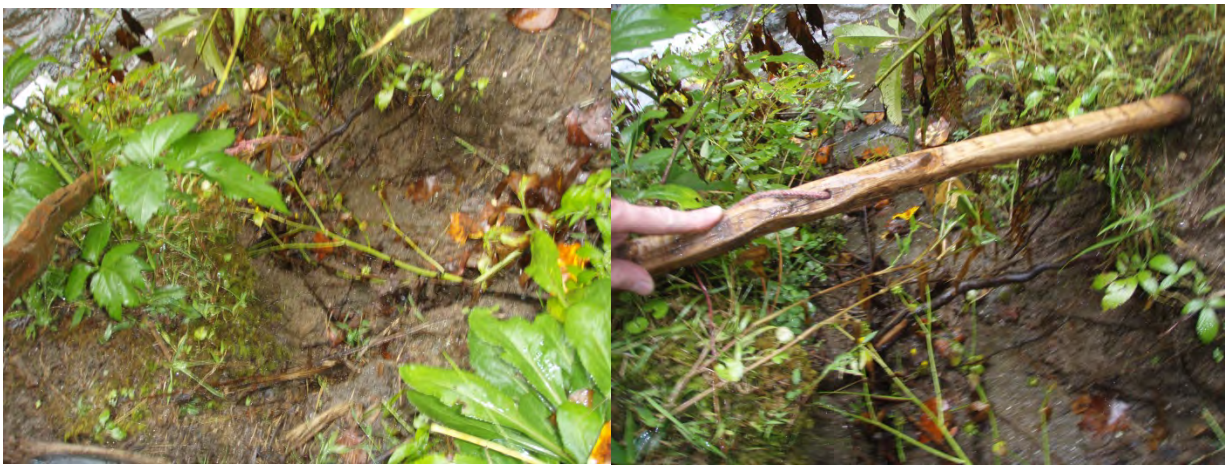
Boater Created Erosion Site B-5 @ 35 02 51.54 N 83 07 14.52 W on Sept. 25, 2015.

Boater Created Erosion Site B-5 on March 25, 2016. All ground cover now denuded and point source of pollution remains unaddressed. See the rock shelf on the left of the bottom photo.

Boater Created Erosion Site B-5 constitutes the first place where the Chattooga River Trail, after departing from the Green Creek parking lot trailhead, runs adjacent to the creek. Up until reaching this point, the Chattooga Rive Trail runs along the ridge where it remains separated from the creek by thick tangles of rhododendron and mountain laurel. As a consequence, this represents the first *convenient location* where a paddler can drop his boat to the ground and launch without having to fight their way through a tangle of rhododendron, laurel, and briars—although this is not permitted under the restrictions put in place in 2012.

For decades, the Chattooga River Trail has existed in this same location without suffering any form of erosion. It was only subsequent to boats having seal launched off of the bank that this collapse occurred. After having caused the bank to collapse in the first location (Boater Created Erosion Site B-5), the paddlers simply moved several feet further down the Chattooga River Trail and dug out a narrow trench to facilitate their sliding their kayaks across the bank and over a rock shelf into the creek (Boater Created Erosion Site B-5-B).

Boater Created Erosion Site B-5-B Sept. 25, 2015



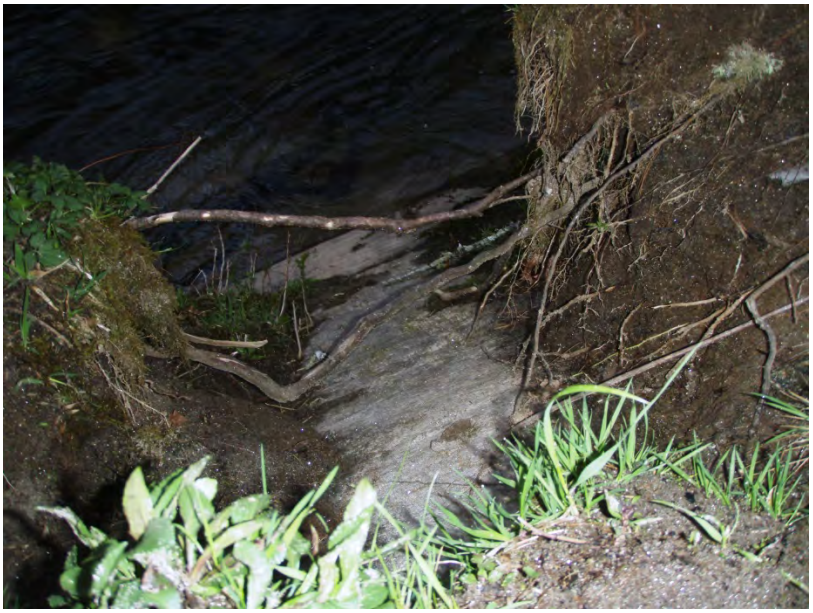
Boater Created Erosion Site B-5-B photographed Sept 25 2015

These photographs show how paddlers used a digging tool to excavate a trench the width of a kayak to facilitate their sliding their boat across the rock shelf and into the water. The next series of photographs show what B-5-B looks like as of March 25, 2016. Conditions have become even worse. Visible sediment is being channeled into the creek by this boater created launch site.

This photograph was taken on March 25, 2016 while standing at Boater Created Erosion Site B-5, and looking down the Chattooga River Trail at Boater Created Erosion Site B-5-B. Notice how all the ground cover, briars, etc., which was present in the photos taken on September 2015, has now been denuded during the course of the current paddling season. It looks like elephants have been using the trail and the area around the trail.

Technically, launching a boat from this site does not comply with the rules—but the rules are clearly not being enforced. Boats are clearly being launched from here—even after the Forest Service was advised of this damage with latitude and longitude precision in July 2015. Note the presence of the black silt fence. It will be interesting to find out who set this silt fence, since the Forest Service never acknowledged the existence of this boater created erosion site in its 2015 Environmental Assessment. This site existed prior to the publication of that document.The act of kayaks being seal launched into the creek led to the destabilization and collapse of the river bank.

This photograph was also taken on March 25, 2016. It is looking back up the Chattooga River Trail, with Boater Created Erosion Site B-5-B *in the foreground,* and Boater Created Erosion Site B-5 in the background. See the hiking staff on the right. It marks the location of Boater Created Erosion Site B-5-B. In comparison to the photos taken on Sept. 25, 2015, it is clear that Erosion Site B-5-B has become larger. What is remarkable is how much of the area around the trail has been denuded of all ground cover—including briars. It appears that Boater Created Erosion Site B-5-B continues to be intensely used by paddlers launching at this location. The photo below shows where the kayaks are being launched across the rock shelf. Sediment is being channeled into the creek by boating activity.



This does not constitute the *sole* location that has suffered further degradation during the 2015-2016 boating season.

Here are three photographs evidencing another place further down the Chattooga River Trail where the riverbank has been denuded of all ground by some kind of intense human use of the bank. This bare ground did not exist on September 25, 2015. It did not exist when the 2007 Biophysical Inventory was conducted. It has occurred during the current boating season.

This photo was taken March 25, 2016, 16 minutes up trail, or approximately 1408 feet up trail from Norton Mill Creek Pool bridge, hiking at a pace of approximately 1 mph, and 12 minutes or approximately 1056 feet further down trail from Boater Created Erosion Sites B-5 & B-5-B. As shown in the photo, *the area has been entirely denuded of ground cover*. This erosion site has developed subsequent to September 25, 2015. It certainly did not exist when the 2007 Biophysical Inventory was compiled by the Forest Service.

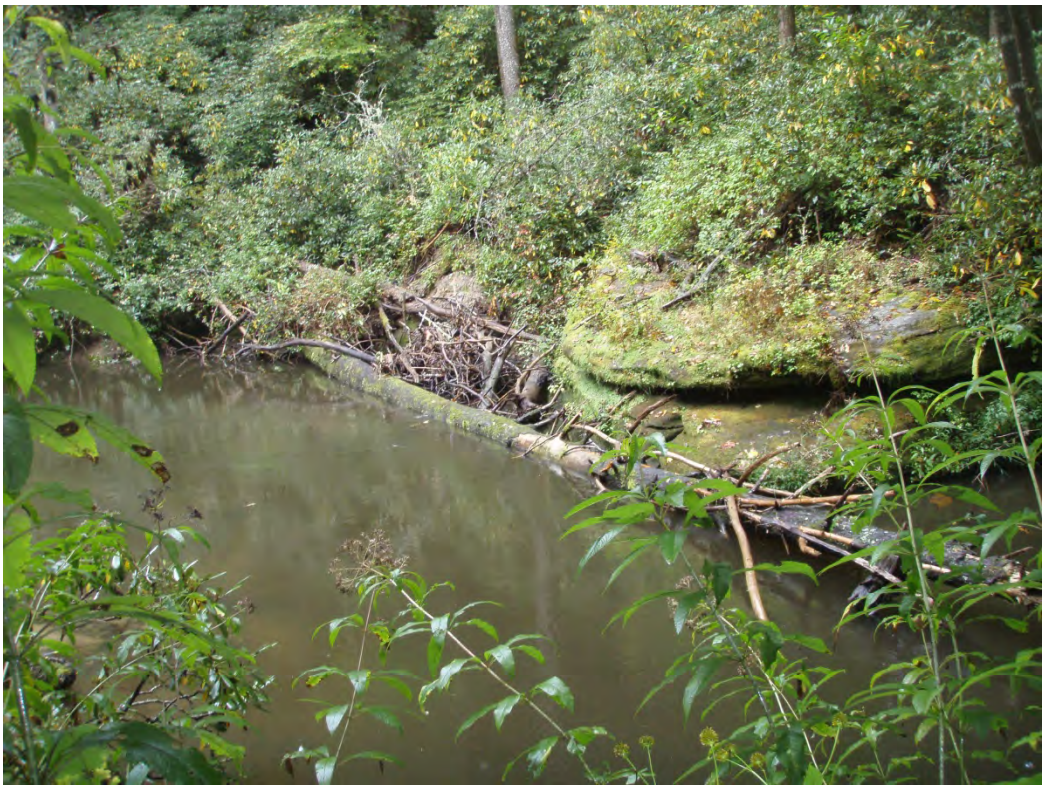
Using this location as an initial boat launch site would violate the restrictions set forth in the 2012 Decision Notice and 2012 Environmental Assessment—restrictions which were put in

place after over a decade of analysis by the Forest Service. Boats may only be initially launched within 500 feet of Norton Mill Creek confluence.

This photo taken on March 25, 2016 evidences the complete elimination of any ground cover on the creek side of the Chattooga River Trail. This now constitutes yet another Boater Created Erosion Site X-1 which did not exist either prior to the introduction of boating in December 2012, or at the time of the 2007 Biophysical Inventory.

Boater Created Erosion Site X-1 was developed subsequent to September 25, 2015 in order to facilitate portaging around a significant pile of hemlock strainers that must have developed just upstream of this point some time subsequent to September 25, 2015. Prior to March 25, 2016, this horizontal stream wide strainer obstacle was subsequently pushed more vertical but there still remains the risk of a paddler getting pinned against the lowest log.

See the two photographs below of the changing dynamic obstacle which is located just above this new Boater Create Erosion Site X-1.



Photograph taken on September 25, 2015

Photgraphs taken on March 25, 2016

The top photo shows a single log which was partially obstructing the channel on September 25, 2015. The photo was shot from the Chattooga River Trail from the same spot that now constitutes Boater Created Erosion Site X-1. Sometime subsequent to September 25, 2015, several additional logs fell into the creek and were pushed downstream by the force of the water to lodge themselves as obstacles within the creek channel. The botttom two photos were also taken standing on Boater Created Erosion Site X-1. At some point in time, these logs must have created a formidable enough obstacle within the creek channel that paddlers felt compelled to evacuate the creek upstream and re-lauch their boats at Boater Created Erosion Site X-1—

located just downstream of this obstacle. The photograph below evidences a new place along the river bank which has been degraded. The top of the bank appears to have been worn down as if a boat were being pushed across the top of the bank.This may be the place where boaters are evacuating the river to avoid the strainer logs which are jambed onto the rock on river left just above the location of Boater Created Erosion Site X-1.

These photos demonstrate how creek boaters have destroyed the “near natural” condition that once existed in North Carolina. Because every *creek boater* is making an individual decision about when they want to evacuate the river to “*walk around*”, and seal launch back into the creek, there simply is no limit on the number of places which might become sources of visible sediment flow into the Chattooga.

The Forest Service’s promotion of this recreational use has exacerbated the degradation of North Carolina’s water quality. None of these point sources of water pollution existed prior to the introduction of creek boating to the Chattooga in North Carolina.