

7. River use allocation systems in North America

This section describes allocation systems on North American rivers based on agency documents, websites, and interviews. It includes summary information about:

- Number of rivers with allocation systems
- Allocation approaches
- What's limited?
- Primary systems
- Secondary systems
- Use limit seasons
- Lottery and reservation distribution schedules
- Private-commercial splits
- Trip leader policies
- Participant tracking
- Cancellation and no show policies
- Application fees
- User fees
- Success rates
- Group size limits
- Numbers of outfitters

Number of rivers with allocation systems

Information was initially developed from agency documents or websites for about 110 rivers that were known to have allocation systems (some in place, others in plans but not yet implemented), or appeared to be candidates for one. The goal was a complete survey of systems (although some may have been missed). Subsequent work suggested differences between “full” and “partial” allocation systems, discussed separately below.

Full allocation systems have distribution mechanisms for both private and commercial sectors. We have identified 25 full allocation systems on rivers in North America (Table 1), although this “count” depends on definitions of segments or systems. Most of this chapter focuses on these systems.

Table 1 lists the full systems by river, segment, mileage, and managing agency. Of these, 22 allocate boating, two allocate land-based fishing (Dukes Creek in GA, McCloud River in CA), and one allocates land-based bear viewing (McNeil River in AK). The BLM and Forest Service manage seven systems each, National Park Service manage five, with the remainder managed by other state and federal agencies, and the Nature Conservancy. Of the 22 boating-based allocation systems, all but the Youghigheny (PA) involve multi-day trips, although day trips are possible on the limited segments of the Deschutes (OR) and Tuolumne (CA).

Table 1. Full allocation systems on North American rivers.

River and State(s)	Segment	Miles	Lead Managing Agency
Alsek/Tatshenshini (BC, Can & AK)	Haines Jct./Dalton Post to Dry Bay	266	NPS & Parks Canada
Colorado River in Cataract Canyon (UT)	Green confluence to Lake Powell	44	NPS – Canyonlands NP
Colorado River in Grand Canyon (AZ)	Lees Ferry to Diamond Creek	226	NPS – Grand Canyon NP
Colorado River in Grand Canyon (AZ)	Diamond Creek to Lake Mead	51	NPS – Grand Canyon NP
Colorado River in Westwater Canyon (UT)	Westwater Ranch to Cisco Landing	17	BLM – Moab
Deschutes River (OR)	Warm Springs to Columbia	97	BLM – Prineville
Dukes Creek (GA)	Segment in Smithgall-Woods park	5	GA State Parks
Green River (UT)	Gray and Desolation canyons	84	BLM – Price
Karluk (AK)	Kodiak Refuge segment	22	USFWS – Kodiak
Kern River (CA)	Forks of the Kern	17	USFS – Kernville
McCloud River (CA)	Nature Conservancy Preserve	6	The Nature Conservancy
McNeil River (AK)	Bear viewing areas	2	AK Dept. of Fish and Game
Main Salmon (ID)	Wild segment (Corn Ck to Vinegar)	79	USFS – North Fork
Middle Fork Salmon (ID)	Boundary Creek to Cache Bar	99	USFS – Challis
Rio Chama (NM)	Overnight segment	32	BLM – Taos
Rio Grande (NM)	10 segments, including Taos Box	80	BLM – Taos
Rogue (OR)	Wild segment: Graves Ck to Foster	34	BLM – Grants Pass
Salt (AZ)	Gleason Flat to Roosevelt Reservoir	52	USFS – Globe
San Juan (UT)	Sand Island to Clay Hills	84	BLM -- Monticello
Selway (ID)	Paradise to Selway Falls	47	USFS – West Fork
Smith (MT)	Camp Baker to Eden Bridge	59	MT Fish, Wildlife & Parks
Snake in Hells Canyon (ID/OR)	HC Dam to Pittsburg Landing	72	USFS – Clarkston
Tuolumne (CA)	Lumsden to Wards Ferry	19	USFS – Groveland
Yampa / Green in Dinosaur National Mon.	Deer Lodge/Lodore to Split Mountain	115	NPS – Dinosaur Nat. Mon.
Youghiegheny (PA)	Ohiopyle to Bruner Run	7	Pennsylvania State Parks

Partial allocation systems refer to rivers where only some types of use are limited, or some aspects of an allocation system have not yet been implemented. In most cases, partial systems have **commercial limits only**, usually on the number of outfitters and some aspects of their trips (e.g., the number of trips, people, or user-days in a certain period). Partial systems typically do not limit non-commercial use (because such limits have not been defined, or non-commercial use

is low and has not exceeded defined capacities). In other cases, neither commercial nor non-commercial use is limited because use remains below capacities, but agencies have developed *potential systems* that will be employed if needed.

Table 2 lists 40 *examples* of partial allocation systems. Among these, 30 have “commercial-only” systems in place but non-commercial use is not limited or has not reached its limits yet. Ten *example* “potential systems” have limits in one or both sectors, but limits have not yet been reached and allocation systems have not been implemented.

Both lists in Table 2 are illustrative rather than exhaustive. For these rivers, we focus on basic information to characterize variation among partial systems, but more extensive analysis was beyond the scope of this report.

The survey also identified about 30 other rivers where the number of commercial outfitters is limited, but use levels are not. These may be candidates for allocation systems in the future, but it was beyond the scope of this document to focus on managing commercial uses outside the purview of a capacity/allocation system. Even so, Appendix A provides brief notes about all the partial and potential allocation rivers surveyed.

Allocation System Survey Disclaimer

All of the information summarized in this chapter was based on available documents and interviews collected in 2006-2007, and some caveats apply. First, information about allocation systems is not standardized, and there is diversity in how different agencies and rivers have developed systems, labeled characteristics, or kept track of use, applications, and success rates. To make useful comparisons, we have used judgment in categorizing parts of their systems or analyzing available data about the use those systems produce.

Second, we have tried to provide the latest information for each full system, but the “latest year” varied by river. In addition, external factors (e.g., fires, flows) may have affected use or participation in a system for a given year, in which case a more “typical” recent year was used. Readers should recognize that one-year statistics (e.g., use levels, actual splits between sectors, applications) are “snapshots” rather than multi-year averages. The goal was to show how these systems generally work and how they affect use or compare to each other, not provide comprehensive detailed information for individual rivers.

Third, information in this report may become outdated over the years. Use will vary from year to year, and system characteristics may also change (particularly nuances regarding how to apply, and fees.). A data base developed as part of this report will allow future updating.

Taken together, these caveats urge readers to focus on concepts rather than the details of any particular system described in this summary. Appendix A provides additional information about individual systems. A comprehensive understanding of any individual system requires more extensive review than can be provided here.

Table 2. Example partial and potential allocation systems on North American rivers.

Commercial limits only (no non-commercial limits or no implemented non-commercial limits)	"Potential" systems (some defined limits or allocation decisions, but systems have not been fully implemented)
Arkansas, CO	Bruneau/Jarbridge, ID
Animas (Upper), CO	Delta River, AK
Chattooga, GA/SC	Dolores River (Gateway reach), UT
Cherry Creek (Tuolumne), CA	Gulkana River, AK
Cheat, WV	Illinois River, OR
Clackamas (Three Lynx Reach), OR	John Day River, OR
Dead River (ME)	Owyhee, ID
Gauley, WV	Rio Grande in Big Bend, TX
Goodnews River, AK	Snake River in Teton NP
Green below Flaming Gorge Dam (WY)	Susitna Basin Recreation Rivers, AK
Kern River (Upper and Lower), CA	
Kennebec River, ME	
Kennekok River, AK	
Madison River (Bear Trap), MT	
Merced (BLM Section), CA	
Merced (Yosemite Valley), CA	
Middle Ocoee, TN	
Middle Fork American (CA)	
New River Gorge, WV	
North Fork American, CA	
Shenandoah, WV	
Six Mile Creek, AK	
Situk River, AK	
South Fork American, Ca	
Twenty-Mile River, AK	
Upper Kenai River, AK	
Verde, AZ	
West Branch Penobscot, ME	
White Salmon, WA	

Allocation approaches

Among the 25 full allocation systems, all but two of the boating systems use a split allocation approach. The common pool approach is used on the Deschutes and three low use segments on New Mexico's Rio Grande. The two land-based fishing rivers (McCloud and Dukes Creek) also operate *de facto* common pools because guides are not allowed to make reservations or control a permit (but may accompany anglers who receive one). McNeil River bear viewing use is essentially all guided (by the state agency that manages the area).

Among partial systems, all of the commercial-limits-only rivers appear to be committed to a split approach. In several cases, non-commercial limits have been specified, making a split approach likely when limits are reached.

At least two potential systems have indicated that a common pool approach will be used when limits are needed (Chetco and Illinois River in Oregon), and allocation goals developed in a plan for the six Susitna Basin Rivers in Alaska also indicate that a common pool approach will be considered (if not required). On the Middle Fork Flathead River in Montana, the management plan calls for a common pool approach when limits are reached, but existing annual "service-day" limits for outfitters in the entire Flathead basin might confound those attempts (Ryan, 2008).

In addition, a common pool system is in place in Minnesota's Boundary Waters Canoe Area Wilderness (although this is not a river setting; see case study in Chapter 8). No current system uses an adjusting split approach, although several have adjusted their splits through planning efforts (most notably in Grand Canyon, see case study in Chapter 8), and several others allow cross-sector use at some points in the allocation process (see below).

What's limited?

Table 3 summarizes the type of use (launches, people, user-days) that is limited for full allocation systems; Table 4 does the same for example partial systems. The "combination" category lists rivers where limits differ by segments, different sectors are limited by different types of use, or where people and launches are both limited (and whichever is exceeded first controls the use level). Details are available in Appendix A.

There is diversity in what type of use is limited, but launches and people are most common. When launches are combined with group size limits, the result is a *de facto* limit on people (but usually won't be reached unless actual group sizes approach group size limits). Among full systems, longer multi-day rivers tend to limit launches, while shorter rivers tend to limit people. The exception "short trip river" that limits launches is the Rio Chama; the exceptional "long trip rivers" that limit people include the Rogue and Colorado through Cataract Canyon.

Partial allocation systems most commonly limit launches per day, but the Arkansas, Snake in Grand Teton, and Merced in Yosemite National Park manage boats per day. Most systems specify limits per day (e.g., launches per day, people per day), but a few specify limits per week (Cherry Creek, CA), per month (Green in Flaming Gorge, WY), or per year (Sixmile, AK). There are also partial systems that limit "boat-days" (number of boats per day through a season; Situk River, Alaska) and "service days" (number of days per year that trips can be offered, but not number of trips or people on those days; NF and Middle Fork of the Flathead, MT).

Table 3. Type of use limited under full allocation systems.

Launches	People	Combination
Alsek/Tatshenshini	Colorado in Cataract (UT)	Grand Canyon – Lees Ferry to Diamond (AZ) has additional annual user-day limits in the commercial sector.
Green Desolation (UT)	Deschutes River (OR)	
Main Salmon (ID)	Dukes Creek (GA)	Grand Canyon – Lower Gorge (AZ) manages private use by launches and commercial use by people
Middle Fk Salmon (ID)	Karluk River (AK)	
Rio Chama (NM)	Forks of the Kern (CA)	Rio Grande (NM) limits people on most segments; for Taos Box Canyon, non-commercial use is limited by people and commercial use is limited by launches.
Salt (AZ)	Rogue (OR)	
San Juan (UT)	Youghigheny (PA)	
Selway (ID)	McCloud TNC (CA)	Tuolumne (CA) has launch and people limits (which ever is exceeded first controls use).
Smith (MT)	McNeil (AK)	
Snake Hells Canyon (ID/OR)		Colorado in Westwater (UT) limits launches and people in each sector.
Yampa/Green (UT)		

Table 4. Type of use limited under example partial or potential allocation systems.

Launches	People	Boats	User Days	Combination / Other
Animas (CO)	Cheat (WV)	Arkansas (CO)	Sixmile Creek (AK)	Upper/lower Kern (CA)
Cherry Creek (CA)	Dead River (ME)	Merced NPS (CA)	Twentymile River (AK)	Flathead (MT) (service days)
Goodnews River (AK)	Gauley (WV)	Snake in Grand Teton		
Flaming Gorge (WY)	Kennebec (ME)	Snake (Henry's Fork)		
Gulkana (AK)	New River (WV)	Situk River (AK) (boat-days)		
Kannektok (AK)	So Fk American (CA)			
Merced BLM (CA)	Verde (AZ)			
MF American (CA)	WB Penobscot (ME)			
Middle Ocoee (TN)				
Rio Grande (Big Bend)				
Su Basin Rivers (AK)				
Snake (Alpine Canyon)				
Upper Kenai (AK)				

Primary distribution mechanisms

In split allocation systems, the *primary distribution mechanism in the commercial sector* is most commonly a “*negotiated calendar*.” Outfitters receive a block of access specified as a use level per day (or week or season) and then schedule their trips accordingly.

On day-use rivers where the limit is launches or people per day for each outfitter, scheduling is simple. When allocations vary by outfitter or do not provide each outfitter trips every day, a within-sector allocation is needed. Outfitters sometimes negotiate for dates among themselves, but most rivers have an agency-managed process. Of these, adopting the previous year calendar is common (and often links back to the calendar in use when limits were first set). In a few cases, agencies conduct “selection meetings” that involve several rounds of choosing dates. The complexities of such processes are beyond the scope of this report, a detailed example for the Middle Fork American is available (Deitchman, 2003). Regardless of how a calendar is negotiated, the important consequence is that outfitters generally know when they can offer trips well before the season begins.

On *the non-commercial side in split systems (or in common pools)*, there is considerable *diversity* in how permits are distributed. Table 5 summarizes the primary distribution mechanisms for full systems. More rivers (14 of 25) use lotteries or weighted lotteries than reservations (11 of 25). No primary mechanisms use pricing, on-site queuing, or merit.

Table 5. Types of primary distribution mechanisms for full allocation systems (non-commercial sector or for common pools).

Lottery	Reservations	Weighted Lottery
Forks of the Kern (CA)	Alsek/Tatshenshini (Can/AK)	Grand Canyon (Lees-Diamond) (AZ)
Karluk (AK)	Colorado in Cataract (UT)	
McNeil (AK)	Grand Canyon (Lower)	
Main Salmon (ID)	Colorado in Westwater (UT)	
MF Salmon (ID)	Deschutes (OR)	
Rio Chama (NM)	Dukes Creek (GA)	
Rogue (OR)	Green in Desolation (UT)	
Salt (AZ)	McCloud TNC (CA)	
San Juan (UT)	Rio Grande (NM)	
Selway (ID)	Tuolumne (CA)	
Smith (MT)	Youghigheny (PA)	
Snake (Hells Canyon)		
Yampa / Green (CO)		

Secondary distribution mechanisms

In split allocation systems, *secondary distributions are less important* in the *commercial sector* because outfitters market and fill trips for a known calendar, and are therefore less likely to need a trip outside that schedule. Although many scheduled commercial trips may not be used, the ability of other commercial outfitters to take advantage of unused trips is often more limited. For example, data from the Rogue River suggests about 11% of commercial use was distributed via a secondary system compared to 48% of private use.

Some rivers build flexibility into their systems by making unused commercial allocations available to other outfitters, or by creating a separate allocation available to all outfitters. Ten of the full allocation systems have commercial-sector secondary distributions (Cataract, Green River in Desolation/Gray Canyon, Main Salmon, Rio Chama, Rio Grande, Rogue, San Juan, Smith, and Tuolumne). Several commercial-only allocation systems also allow this practice among outfitters; examples include the Arkansas (CO), North and Middle Forks of the American River (CA), the BLM segment of the Merced, and Race Course segment on New Mexico's Rio Grande. These systems generally allow outfitters to request additional launches (or add people to existing trips) from a pool of unused commercial allocations. In some cases, this mechanism also allows outfitters to build future allocations while outfitters unable to use their allocations shrink. On other rivers, commercial pools of this sort do not decrease long-term allocations of the donating outfitter (Arkansas, CO).

On *the non-commercial side*, secondary systems are important because cancellation rates can be high and non-commercial users can often use cancellations on short notice. Table 5 summarizes the secondary mechanisms among full permit systems. Most rivers (16 of 25) use phone-in reservations, but there are two with web-based reservation systems, four walk-in reservation systems, and two that notify people on short-term waiting lists. Among the phone-in systems, most limit hours of operation (e.g., weekday mornings) to minimize administration costs.

Grand Canyon (Lees Ferry to Diamond Creek) is the only system with supplemental lotteries (4 to 8 per year) to fill cancellations. The park also has a phone-in reservation program to utilize cancellations that occur close to the launch date.

Table 6. Secondary distribution systems for full allocation rivers.

Call-in reservations	Web-based reservations
Alsek/Tatsheshini (Can/AK)	Deschutes (OR)
Colorado in Cataract (UT)	Youghigheny (PA)
Grand Canyon (Lower)	
Colorado in Westwater (UT)	Notification by agency (short-term waiting list) / call-in reservations
Dukes Creek (GA)	Salt (AZ) for one date
Green in Desolation (UT)	Snake (Hells Canyon) for one date
Karluk (AK)	
Forks of the Kern (CA)	On-site queuing (walk-in reservations)
Main Salmon (ID)	McCloud TNC (CA)
MF Salmon (ID)	McNeil (AK) among “stand-by” users
Rio Grande (NM)	Tuolumne (CA)
Rogue (OR)	Rio Chama (NM) walk-in on weekdays only
San Juan (UT)	
Selway (ID)	Other
Smith (MT)	Grand Canyon (Lees-Diamond) (AZ) supplemental lotteries and call-ins
Yampa / Green (CO)	

Commercial / non-commercial splits

Choosing the split between commercial and non-commercial use is probably the most challenging allocation decision under a split approach. Example splits are given for several launch-based (Figure 1) and people-based (Figure 2) systems. The splits reported are for the “control season” in full allocation systems, and percentages assume full utilization of an allocation.

Figure 1 shows that most launch-based systems provide at least 50% to the non-commercial sector, and some favor non-commercial use (e.g., Westwater, Tuolumne, Rio Chama, Selway, and Smith). The only river with more than 50% commercial launches is Grand Canyon (Lee’s Ferry to Diamond Creek). The figure highlights the popularity of 50-50 splits (7 out of the 13 shown), which carry the aura of “equality.”

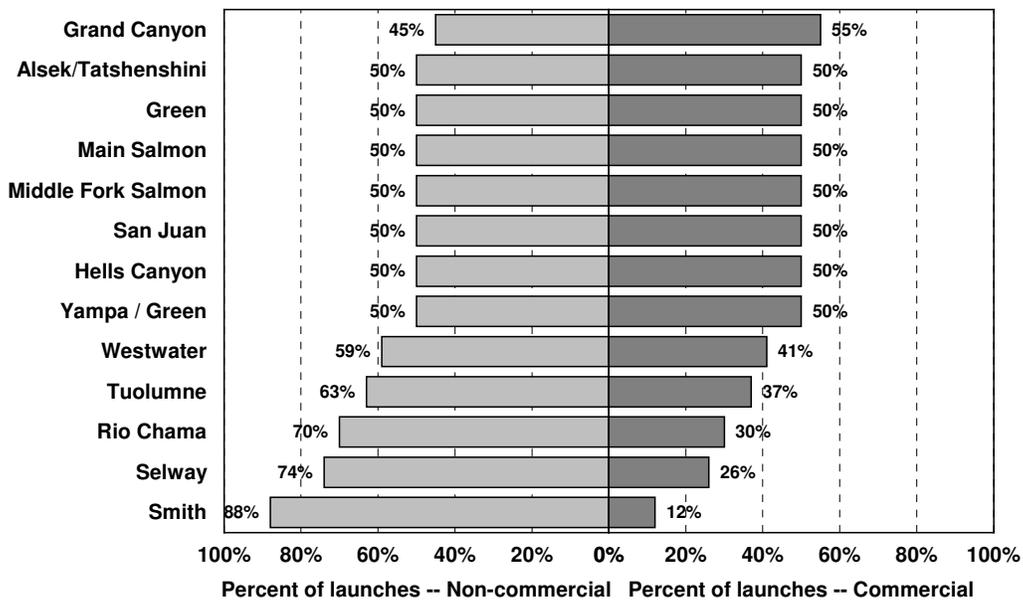


Figure 1. Example commercial / non-commercial splits for launch-based allocation systems.

Figure 2 shows that people-based systems tend to provide higher proportions to commercial use, although few segments favor non-commercial use. Commercial groups tend to be larger, so it is possible to send more commercial passengers down the river with similar numbers of launches in both sectors. It is also possible to develop splits that differ by day of the week. For example, the Taos Box segment on the Rio Grande (NM) has different splits for weekends (favors non-commercial) and weekdays (favors commercial) based on relative demand.

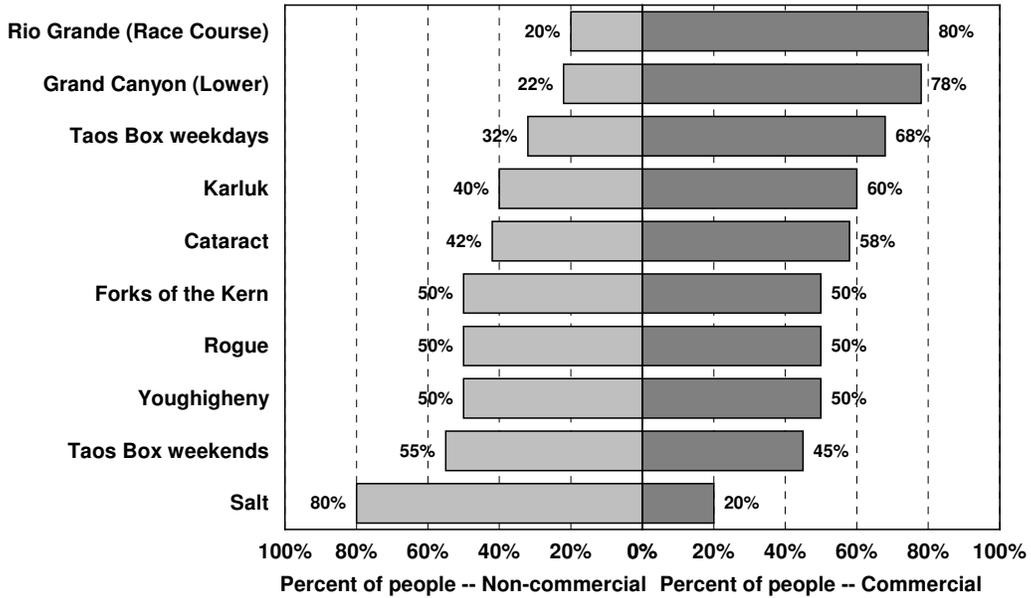


Figure 2. Example commercial / non-commercial splits for people-based allocation systems.

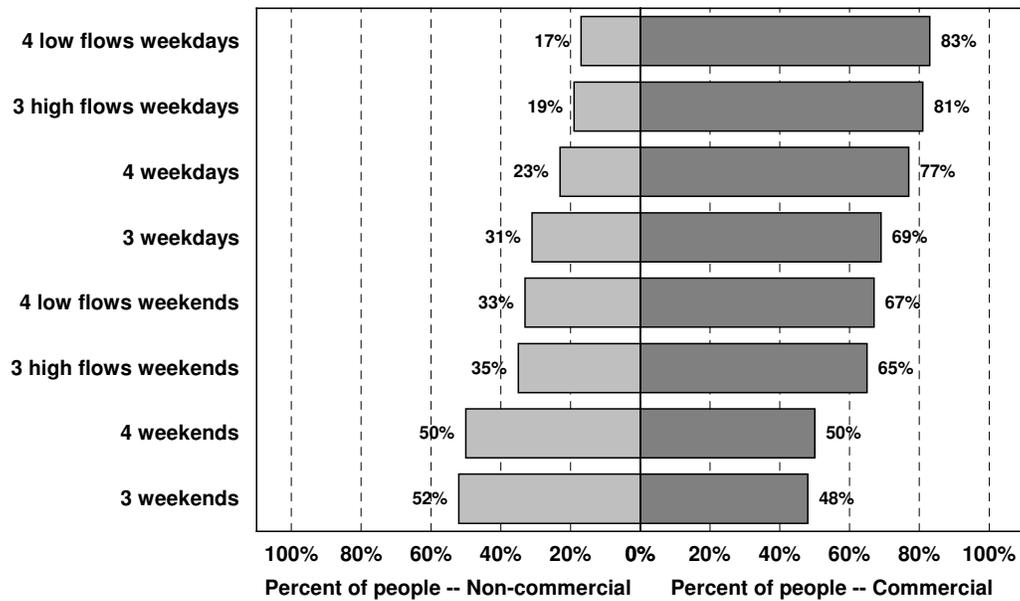


Figure 3. Commercial / non-commercial splits on Sections 3 and 4, Lower Chattooga River (GA/SC).
 Note: Non-commercial use has not exceeded limits frequently enough to implement a full permit system.

Variable splits for the Lower Chattooga River (Figure 3) recognize demand in different sectors on weekends vs. weekdays, low vs. high flow times, and winter vs. summer (not shown). The Arkansas in Colorado also has variable splits on several segments (see case study in Chapter 8).

It is important to recognize that intended allocation splits (goals) do not always match actual utilization. Initial distributions usually allocate all the commercial and non-commercial launches, but cancellations, no shows, and secondary distributions do not occur equally in the two sectors. In addition, some systems allow non-commercial use of unused commercial allocations or vice versa (a common pool of unused allocation).

On high demand rivers, actual splits are closer to the intended splits because there are fewer cancellations. On rivers with less demand or longer seasons, actual use tends to shift toward non-commercial users who are more adept at using secondary distribution systems (probably because they have shorter planning horizons). Examples include:

- The Green River in Gray/Desolation has a 50-50 launch split, but allows non-commercial sector to utilize cancellations from both sectors, so about 70% of launches are ultimately non-commercial.
- Forks of the Kern has a 50-50 person split, but 60% of all users are non-commercial.
- The San Juan has a 50-50 launch split, but 77% of the launches, 64% of the people, and 73% of the user-days are non-commercial.
- The Main Salmon has a 50-50 launch split, but 64% of the launches, 53% of the people, and 57% of the user-days are non-commercial.
- Hells Canyon has a 50-50 launch split, but 58% of the launches and 62% of the user-days are non-commercial.

Length of “control season”

Many rivers with allocation systems require permits year-round (17 of 25), but most operate distribution systems only during a shorter “control season” when actual use is likely to exceed capacities. The average length of these seasons is 125 days, but a few are much shorter (e.g., 31 days for the Karluk, 79 days on the Main Salmon, and 77 on the Selway). The Deschutes and Youghie rivers limit use only on weekends during summer and early fall. Four rivers have control seasons year-round (Grand Canyon, Desolation/Gray, Dukes Creek in GA, and Rio Grande in NM).

Year when limits began

Figure 4 shows the dates when use limits were established for the 25 full allocation systems. Half of were developed in the 1970s, 24% in the 80s, 17% in the 1990s, and 8% so far in the 2000s. A comparable data set for partial allocation systems is unavailable, but it is likely to show a similar pattern. For unlimited rivers where we have examined use information, the most dramatic increases occurred in the 1970s and 80s and peaked in the 1990s. Since that time, use on many rivers is stable or increasing slowly; however, it is approaching defined limits on some popular rivers (e.g., Arkansas, Chattooga).

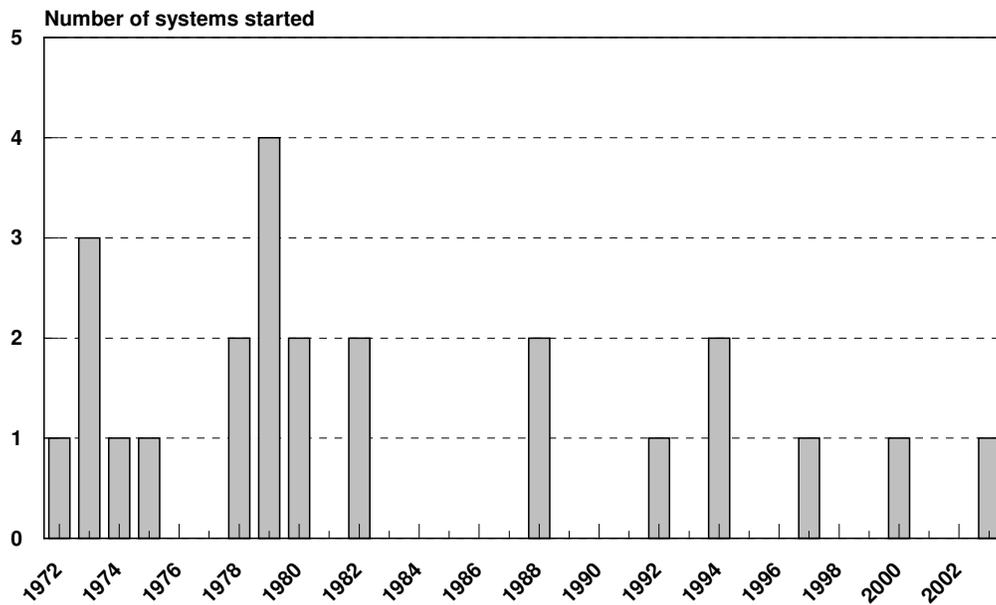


Figure 4. Number of full allocation systems started by year.

Distribution dates

Lotteries for non-commercial sectors are typically held in winter and offer a relatively short period when applications must be filed (Table 7). The most common deadline for applications (8 out of 15 systems) is January 31, although start dates vary (November 1, December 1, or January 1). Other deadlines are slightly earlier or later, and can create some confusion for boaters trying to keep the deadlines straight. The only lottery held substantially before actual trip dates is for the Grand Canyon, which held its 2009 main weighted lottery in February 2008.

Table 7. Application and distribution dates for non-commercial lottery systems (organized by end of application period).

River and State(s)	Application period		Results to applicants
	Start	End	
Karluk (AK)	Nov 1	Dec 15	Early Jan
Alsek/Tatshenshini (BC, Can & AK)	Anytime	Dec 15	Jan 15
Salt (AZ)	Dec 1	Jan 15	Feb
San Juan (UT)	Dec 1	Jan 31	Feb
Yampa / Green in Dinosaur National Mon.	Nov 1	Jan 31	Late Feb
Smith (MT)	Jan 1	Jan 31	Late Feb
Main Salmon (ID)	Dec 1	Jan 31	Mar 1
Middle Fork Salmon (ID)	Dec 1	Jan 31	Mar 1
Rogue (OR)	Dec 1	Jan 31	Mar 1
Selway (ID)	Dec 1	Jan 31	Mar 1
Snake in Hells Canyon (ID/OR)	Dec 1	Jan 31	Mar 1
Rio Chama (NM)	Feb 1	Feb 28	Early Mar
Colorado River in Grand Canyon (AZ)	Feb 1	Feb 28	Early Mar
McNeil River (AK)	Anytime	Mar 1	Mar 15
Kern River (CA)	Mar 15	May 15	May 1

Lottery success rates

Table 8 shows success rates for example non-commercial lotteries with comparable data. Rivers are ordered from lowest to highest success and rates range from about 3% on the Middle Fork Salmon to 62% on the Alsek / Tatshenshini. If only one person from a group applies each year, a 3% rate means success one out of 33 years, while 50% means success every other year.

Because most lotteries require applicants to specify individual dates (usually three to five preferences), odds are typically lower during the peak use season but better toward the shoulders. Demand for particular dates is sometimes available to the public (e.g., Grand Canyon, Yampa/Green, four Idaho WSR rivers), which can help applicants assess their chances of success. Applicants can increase their odds by having multiple people apply, and by competing in secondary distributions if they are unsuccessful in the primary distributions.

Success rates in lotteries are calculable only for those who apply through these systems. It is likely that some users find participation too burdensome (because of application fees, deadlines, planning horizons, etc.), but application/success statistics do not estimate this percentage. Similarly, success rates for reservation systems can't be calculated unless agencies track inquiries or those unable to reserve their first choice date.

Table 8. Recent success rates in example non-commercial lotteries (organized by success rates).

River	Applications ^a	Permits awarded ^b	Success rate
Middle Fork Salmon (ID)	10,200 ^c	350	3%
Selway (ID)	1,600 ^c	62	4%
Yampa / Green in Dinosaur National Mon.	5,200 ^d	300 ^d	6%
Grand Canyon (AZ)	2,300	194 ^e	8% ^f
Main Salmon (ID)	3,400 ^c	310	9%
McNeil River (AK)	1,600	185	11%
Rogue (OR)	5,800	800	14%
Smith (MT)	3,900	530	14%
Snake in Hells Canyon (ID/OR)	1,000 ^c	325	33%
Alsek/Tatshenshini (BC, Can & AK)	60 ^g	37	62%

Notes:

- a. Number is rounded and based on most recent year (usually 2005 or 2006).
- b. Number of permits = launches except for McNeil River (Rogue manages for numbers of people but also tracks launches).
- c. Success rates based on first choice only (because 2nd, 3rd, and 4th choices could be on other rivers). Applicants that used all their dates for one river had slightly higher odds of success than reported here.
- d. High use season.
- e. 300+ permits awarded to applicants from previous waiting list + scheduling system (see case study for more details).
- f. This was a weighted lottery, so odds were improved by people with more years since their latest trip; see case study.
- g. NPS maintains multi-year waiting list; about 120 elect to remain from year-to-year, but only 60 request dates in any given year.

Fees

Application fees

Fees are charged for applications or reservations on 16 of the 25 rivers with full allocation systems. The median fee at these rivers is \$6.00 (average is \$10.50). The highest application fees are \$25 per person at McNeil River bear viewing area, and \$25 per application for the Grand Canyon and Alsek/Tatshenshini lotteries. Free applications are available at Cataract, Westwater, Karluk, McCloud, Rio Grande, San Juan, and Tuolumne.

User fees

User fees are charged at 21 of the 25 rivers with full allocation systems, but vary widely in how they are assessed. The most common method a fee per person per trip (9 of 21 systems or 43%); the median is \$12.50, but this varies widely from \$3 (Youghioghney day trip) to \$100 (Grand Canyon for 7 to 21 days). Other rivers charge trip fees for the entire group (6 of 21 rivers), with a median amount of \$52.50, and a range from \$10 (Forks of the Kern) to \$185 (Yampa/Green in Dinosaur). Some rivers charge user fees per person per day (3 of 21 rivers); these fees range from \$2 to \$6 per person per day.

Table 9. Application and user fees for non-commercial permits on full allocation systems.

River	Application or reservation fee	User fees		
		Per trip	Per person per trip	Per person per day
Alsek/Tatshenshini (BC, Can & AK)	25	100		
Colorado River in Cataract Canyon (UT)	0	30		
Colorado River in Grand Canyon (AZ)	25		100	
Lower Gorge in Grand Canyon (AZ)	0		Hualupai Reservation fees only	
Colorado River in Westwater Canyon (UT)	0		7	
Deschutes River (OR)	2			2 (weekdays) 6 (weekends)
Dukes Creek (GA)	0		2	
Green River in Desolation (UT)	20		25	
Karluk (AK)	0	0		
Kern River (CA)	2	10		
McCloud River (CA)	0	0		
McNeil River (AK)	25 (per person)		150 residents 350 non-residents	
Main Salmon (ID)	6			4
Middle Fork Salmon (ID)	6			4
Rio Chama (NM)	6		5	
Rio Grande (NM)	0		0	
Rogue (OR)	6		10	
Salt (AZ)	10	75		
San Juan (UT)	0		12 to 18 (depends on segments)	
Selway (ID)	6	0		
Smith (MT)	5		25 residents 50 non-residents	
Snake in Hells Canyon (ID/OR)	6	0		
Tuolumne (CA)	0	15		
Yampa / Green in Dinosaur National Mon.	15	185		
Youghiehyeny (PA)	3		3	

Alternate trip leader policies

Twenty-two of the 25 full allocation systems issue permits to trip leaders (the other three issue them to individuals). Of those, half (11 out of 22) allow alternate leaders if the initial leader cannot make the trip. For three rivers (Rio Chama, Salt, and San Juan), agencies accept alternates only with explanations or written requests. The others encourage alternates to help reduce cancellations, but have concerns that transfers to these alternates could encourage “speculation.” To address this, most rivers require alternates to be named during the application process (and alternates cannot be a trip leader or alternate on other applications); alternate trip leaders cannot be named after a permit has been obtained. This may reduce multiple applications from the same group.

Policies intended to reduce cancellations of trips that “legitimately” lose their leader thus serve two reasonable administrative goals, but they also “force” users to make choices about which group to join when the trips are still uncertain to occur (before the lottery).

Repeat user limitations and participant tracking

Limiting people to one trip per year or every couple of years is a way of increasing chances for people who have been unsuccessful in the past (or haven’t been on a trip recently). Of the 25 full systems, only three appear to track participants (as well as trip leaders) to institute this policy: Grand Canyon, McNeil, and Yampa/Green. Of these, the Grand Canyon and Yampa/Green allow one trip per year, while McNeil allows one trip every other year (previously one year in four). The Grand Canyon is the only river that tracks “repeat trips” among commercial users as well as non-commercial users.

Repeat user rules have been criticized for preventing people with more flexible lifestyles from taking trips that are otherwise available (Robertson, 2003; Perry, personal communication). Repeat users may also have valuable experience that can help non-commercial trips be better prepared and more successful.

On some rivers with reservation systems, trip leader tracking prevents individuals from holding more than one (e.g., Deschutes) or two (e.g., Rogue) reservations at once. On the Youghiogheny, “season passes” allows boaters to make unlimited reservations and started to lead some users to “stockpile” good launch dates and times; a simple agency request to these users was apparently sufficient to reduce the problem.

Use of overbooking

Few full permit systems use “overbooking” to ensure higher utilization of allocations (and compensate for inevitable cancellations), but it is practiced on the, Rio Chama, and Rogue (and was used on the Green in Gray/Desolation when it had a lottery). On the Green and Chama, the amount of overbooking is usually just one launch, and rarely resulted in higher than capacity use levels. The Rogue allows over-booking in both sectors, and also has built in a “flex” policy in the commercial sector that allows capacities to be slightly exceeded in certain seasons. A similar allowance is available on some segments of New Mexico’s Rio Grande, but with added fees to remove a profit incentive (but still allow a slightly larger than usual trip to go on occasion).

Cancellation and no show policies

Trips may cancel for many reasons, but one commonly discussed potential cause is related to the number of users that hold “permit parties” to fill out multiple applications to several rivers to increase their chances of their group. Although the extent of this practice is unknown, it probably contributes to higher cancellation rates because some groups may receive more permits than they can use.

Eleven of 25 full system rivers have penalties for cancellations and no shows, generally preventing applications in future years. The most common penalties prevent applications for one year (Forks of the Kern, Green in Desolation, Smith, Snake in Hells Canyon, Tuolumne, Rogue); two years (Alsek/Tatshenshini, Yampa/Green); or three years (Main Salmon, Middle Fork Salmon, and Selway). Penalties typically prevent a person from applying as a trip leader, not from joining other trips.

Six of 25 rivers provide credit toward future fees for cancellations made sufficiently far in advance, thus encouraging people to cancel in time to let others use the launch. The lead time required in these policies ranges from seven days (Forks of the Kern) to 30 days (Green in Desolation, Westwater, San Juan, and Salt). Several rivers encourage permittees to “commit” to a trip after a successful reservation or lottery application by requiring fees shortly after notification. The largest “confirmation” fee is from Grand Canyon, which requires \$400 within 10 days (but this can be used toward eventual user fees).

Group size limits

Group size limits are included in nearly all full allocation systems; they are particularly important for managing numbers of people with launch-based systems. Table 10 shows group size limits for the 25 full systems for private and commercial trips. Notable findings include:

- Eleven out of 25 (44%) rivers had different group size limits for the two sectors. Commercial trips were commonly larger than non-commercial trips when use limits were first established, so differential group size limits are often a historical artifact.
- Three rivers consider guides “invisible” in terms of group size limits (they are not counted). This allows commercial groups to be larger, but has been justified by managers who note that under-staffed commercial trips are more likely to have safety or impact problems (if guides count, there is a motive to bring fewer of them). From a capacity/social impacts perspective, however, guides are not invisible when one encounters a commercial group, so there are trade-offs between managing for capacities and for quality of commercial services with this decision.
- Two rivers (Deschutes and Rio Grande, NM) have different group size limits on different segments, recognizing potential differences in types of recreation opportunities in those segments.
- On all rivers taken together, the median non-commercial limit is 16 and the median commercial limit is 25.

Table 10. Group size limits for commercial and non-commercial trips (ordered by size).

River	Non-commercial	Commercial	Notes
McCloud River (CA)	--	--	10 anglers at one time on 3 mile river.
Dukes Creek (GA)	3	3	15 anglers at one time on 4 mile river.
McNeil River (AK)	3	--	10 viewers at one time at falls.
Karluk (AK)	6	6 + guides	
Smith (MT)	15	15	8 for secondary distribution trips.
Kern River (CA)	15	15	
Asek/Tatshenshini (BC, Can & AK)	15	15	Some outfitters grandfathered at 25.
Salt (AZ)	15	15	
Selway (ID)	16	16	
Rio Chama (NM)	16	16 + guides	
Lower Gorge in Grand Canyon (AZ)	16	20	96 on Hualapai motorized day trips.
Rio Grande (NM)	16	16 / 21 / 32 / 40	Differences for different segments.
Deschutes River (OR)	16 / 24	16 / 24	Differences for different segments.
Colorado River in Grand Canyon (AZ)	8 / 16	32	8 for small party private permits only.
Rogue (OR)	20	30	
Snake in Hells Canyon (ID/OR)	24	24	
Middle Fork Salmon (ID)	24	24	
San Juan (UT)	25	25	
Colorado River in Westwater Canyon (UT)	25	25	
Yampa / Green in Dinosaur National Mon.	25	25	
Youghigheny (PA)	25	25	
Green River in Desolation (UT)	25	25 + guides	
Tuolumne (CA)	26	26	
Main Salmon (ID)	30	30	
Colorado River in Cataract Canyon (UT)	40	40	

Number of commercial outfitters

The number of outfitters vary considerably on North American rivers. In the survey of about 110 rivers with full or partial systems, the median number of outfitters was 12, with the typical range between 5 and 22 (the 25th and 75th percentiles).

There were some rivers with fewer outfitters (30 had five or less), and most of these were remote or difficult streams with low commercial use (e.g., Bruneau/Jarbidge, Forks of the Kern, Illinois, Cherry Creek). Notable exceptions with higher use but low numbers of outfitters include the Chattooga (three rafting outfitters and two kayak instruction outfitters) and the Madison in Bear Trap Canyon (two outfitters).

Some rivers have much higher numbers of outfitters than the averages, including Oregon's Deschutes (104) and Montana's Beaverhead (87), Big Hole (116), and Madison (159). These rivers are characterized by high quality fisheries and have fishing-based outfitting that is often conducted by one-person outfitter-guides. The Kenai River in Alaska, where most of the commercial use is fishing-based, manages guides instead of outfitters and there are over 380.

In most cases outfitter numbers are regulated by the lead managing agency for the river. However, at least three states (Idaho, West Virginia, and Maine) have developed regulations for outfitter-guide industries that include limits on the number of outfitters for particular rivers. In Maine and West Virginia, the state is the *de facto* authority for three and five rivers (respectively). Limits include the number of outfitters and total passengers per day (although most capacities are much higher than current use, and appear to have been raised in the past to accommodate outfitter requests without substantial capacity issue review). Idaho has established limits on numbers of outfitters for about 35 river segments, and for about a third of those rivers, it also controls the number of clients per guide or boats per outfitter at one time.



Guided driftboat fishing on the Upper Kenai River in Alaska during high use “combat fishing” season. The number of guides and “starts per week” are limited on parts of the Upper Kenai.

What's the "right" number of commercial outfitters?

The number of commercial outfitters is not necessarily related to the amount of commercial use, and few agencies expect limits on that number to control commercial use. But there are many reasons to limit the number of commercial outfitters, and that number has implications for other allocation decisions. It is beyond the scope of this report to fully review this issue, but a few key variables include, but are not limited to:

Historic use. The number of outfitters at a river is often an artifact of historical use patterns when limits were established. Most allocation systems began with a freeze on use levels, and that often included a freeze on the number of outfitters. It is possible that market forces and entrepreneurial decision-making decided the "right" number of outfitters prior to the limit, so historic use may provide a good starting point. But establishing such limits also changes the market (see below) and increases the need for administrative oversight, so additional review of the number of outfitters could be important.

Type of trip diversity. In some settings the number of outfitters roughly correlates with the diversity of trip styles that a diverse public might appreciate, but there is a point of diminishing return. When commercial use is "open" and growing (e.g., before limits), diversity may develop organically as entrepreneurs identify and develop marketable trips. As the market stabilizes and outfitters identify the trips with the highest profitability, diversity may decrease. Although agencies could identify and require outfitters to provide certain types of trips to maintain diversity, maintaining a "stable" of outfitters may achieve the same result without direct regulations.

Type of river and recreation opportunities. Larger rivers, longer rivers, or those with more diverse river recreation opportunities are candidates for more rather than fewer outfitters. Similarly, rivers with motorized and non-motorized use may be candidates for more outfitter services.

Economic considerations. There is little public benefit to encouraging more outfitters than the market will bear, but it can be challenging to determine when over-competition (as opposed to individual outfitter quality) produces poor outfitter performance. A monopolistic situation where a small number of outfitters control pricing is another concern, and this can be confounded by the monetary value of allocations. In general, agencies want reasonable-sized "markets" that encourage price and service competition, without encouraging more outfitters than commercial demand will support. Administrative oversight (e.g., applying concession laws that allow profit reviews & price setting) to prevent monopolistic practices is possible, but can be challenging and expensive for agencies if the number of outfitters is large.

Geographic considerations: The way commercial passengers find and use commercial services can be important. The geography of population centers, user travel patterns, outfitter headquarters, and the river are all important. More remote rivers that have a single gateway need fewer outfitters; the public gains little from too many choices in the same place unless they are truly providing a different type of trip.

Continued next page

What's the “right” number of commercial outfitters? (continued)

Administrative efficiency. More outfitters requires more administrative effort, and it doesn't serve the public interest to spend tax dollars managing “many” if similar quality services can be provided by “few.” Regulations can also be used to encourage or require outfitters to be “professionals” rather than “hobbyists,” and many state and federal agencies have minimum licensing or certification standards to help distinguish substantive businesses from marginal ones (e.g., BLM regulations, National Park Service Concessions Management Improvement Act, US Forest Service special use permit program (undergoing revision process winter 2007-2008)).



A mix of commercial and non-commercial boaters at the put-in on the Middle Klamath River near Happy Camp, California.