

A Visual Model of the Impacts of Rest and Rotation and Boat Bans on the Upper Madison River

(original post at <https://www.montanaangler.com/montana-fly-fishing-blog/visual-model-impacts-rest-and-rotation-and-boat-bans-upper-madison-river>)

Rest and Rotation has been proposed in a petition to the Montana Fish and Wildlife Commission as a solution for protecting the river from crowding. Rest and Rotation refers to restrictions on specific reaches of the river where guided anglers would be barred from access on Saturdays and Sundays from June 15 to Sept 30. On Saturdays the proposed restrictions would be from Varney Bridge to Ennis Bridge (9.2 miles or 24.4% of the float fishing zone of the river) and on Sundays from Lyons Bridge to Palisades (8.2 miles or 21.8% of the float fishing zone). The same petition also would ban the use of boats for angling access on 18.6 miles of water 3 days a week. A thoughtful and balanced recreation plan is needed for the Madison River. Such a plan should set limits on the number of users while allowing users to organically spread throughout the river.

We strongly oppose the Rest and Rotation management tool for several reasons:

1. Rest and Rotation does not set limits on future growth of non-commercial use. Continued rapid growth for the Gallatin County will likely result in population growth of 350% over the next 50 years, surpassing 500,000 residents by 2070. If Rest and Rotation is adopted to supposedly reduce crowding, it will delay a real solution of setting a capacity for recreational use.
2. Rest and Rotation unfairly discriminates against any angler that chooses to hire the services of a professional guide by banning them from large reaches of the river 2 days each week.
3. Rest and Rotation places more people into a smaller space
4. Rest and Rotation forces clusters of users vs. organic spreading which allows anglers to spread out naturally. So with the same number of boats, anglers will “feel” more crowded.

What are the numbers for the Upper Madison

- Approximately 15% of anglers are guided while 85% are unguided
- The vast majority of wading anglers are unguided
- In the float fishing zone, camera data collected by FWP indicates about 50% of floaters are guided while 50% are unguided

How will Rest and Rotation result in an increased feeling of crowding?

We looked at all commercial float angling trips for the entire industry from the 2017 season using data provided by Montana FWP. These trips included both float fishing and using boats for access in the wade only areas. We then looked at just the proposed peak window of June 15-September 30th

- 7739 guided trips using boats during the peak window
- Only 234 were in the upper wade area from Quake Lake to Lyons bridge which amounts to an average of just 2.18 guided boats per day (a density of about 1 guide boat per 5.77 miles)
- Banning boats in the current wade zones would have impacted 569 trips or 7.3% of all trips
- On Sundays 54.8% of all guided trips would have been displaced since they were either in the proposed rest and rotation zone OR the proposed banned boat area
- On Saturdays 25.4% of all guided boats would have been displaced due to rest and rotation or boat bans in current wade only areas

Guided anglers

1. The GGTU petition would force all anglers using boats (both guided and unguided) to be displaced Friday through Sunday due to the proposed ban on watercraft access on 18.6 miles of water

2. Additional displacement would occur for guided anglers due to both the boat ban in the wade area and Rest and Rotation. 54.8% of guided anglers would be displaced from traditional float access on Sundays, while 25.4% would be displaced on Saturdays.
3. Displaced boats would be forced to other areas of the river which would increase concentrations
4. Rest and Rotation and boat bans also remove many launch points and take out points from the equation. Most guided trips float for 12-17 miles. With the purposed rest and rotation model, on Saturdays few guided trips would use Story Ditch as a launch site since boats would be barred from floating below Varney Bridge. Story to Varney is too short at 9.1 miles for a most guided trips. McAtee bridge to Story is still a bit on the short side at 11.3 miles. So the vast majority of boats would be compressed and forced to launch between Lyons Bridge and Ruby Creek access, just 13.7 miles of water and only 4 launch locations.
5. By banning access to about 50% of the river, all guided anglers would be compressed into a much smaller zone creating clusters of boats and crowding at ramps.

Non guided float anglers

1. Non guided anglers would also be losing 33% of the river to float access due to the boat ban on 18.6 miles that would apply to all users. The unguided float anglers would be compressed from accessing 56 miles of river to just 37 miles
2. Some unguided float anglers will be attracted to the non-commercial zones on weekends. Unguided float anglers use is rising rapidly as the Gallatin County grows. Bozeman is the fastest growing city in the United States.
3. Many other floaters will still float their favorite reach of river (just as we see on the Bighole and Beaverhead) even if it is out of the rest and rotation area. These zones will be much, much more crowded
4. As time goes on, crowding will rapidly increase since rest and rotation does not place limits on non-guided boats. We would expect the number

of non-guided boats to increase in step with the population growth of Gallatin County and quite possibly see an increase of 350% by 2070.

A Visualization of Rest and Rotation - how we built these models

1. We used an “average” peak season day on July 10, 2017. Commercial guide trips on the upper river range from around 60-150 boats per day. On July 10th there were 101 guided boats on the Upper River.
2. We assumed the non-guided boats were equal to guided boats based on FWP camera ratios so we “launched” 101 non-commercial trips
3. We know exactly where every guided boat launched and took out on July 10th from the required outfitting logs.
4. We approximated where non-commercial boats floated. Camera data shows us that non-commercial boats use the lower reach of the Upper River closer to Ennis more than the upper reach near Lyons. This makes sense since most anglers are driving in from the Gallatin Valley and Lyons is a much longer drive than launching at McAtee or Varney Bridges. Camera data tells us that about 38% of boats just below Lyons are non guided, while below Varney non-commercial boats are more common than guided boats.
5. We launched most commercial boats between a 3 hour window from 7am to 10am with most launches between 8:30 and 9:30 (think a bell curve). We also launched a small handful of the shorter floats as “afternoon” half days between noon and 1:30pm
6. Non-guided boats were launched over a larger window to mirror what we regularly observe on the river. Some early and some in the late morning or early afternoon.
7. Every hour we moved the boats down the river and took another snapshot
8. On rest and rotation days we moved every guided float that was either in a banned boat zone into a legal area to float. This required 25.4% of boats to be relocated on Saturday and 54% on Sunday.

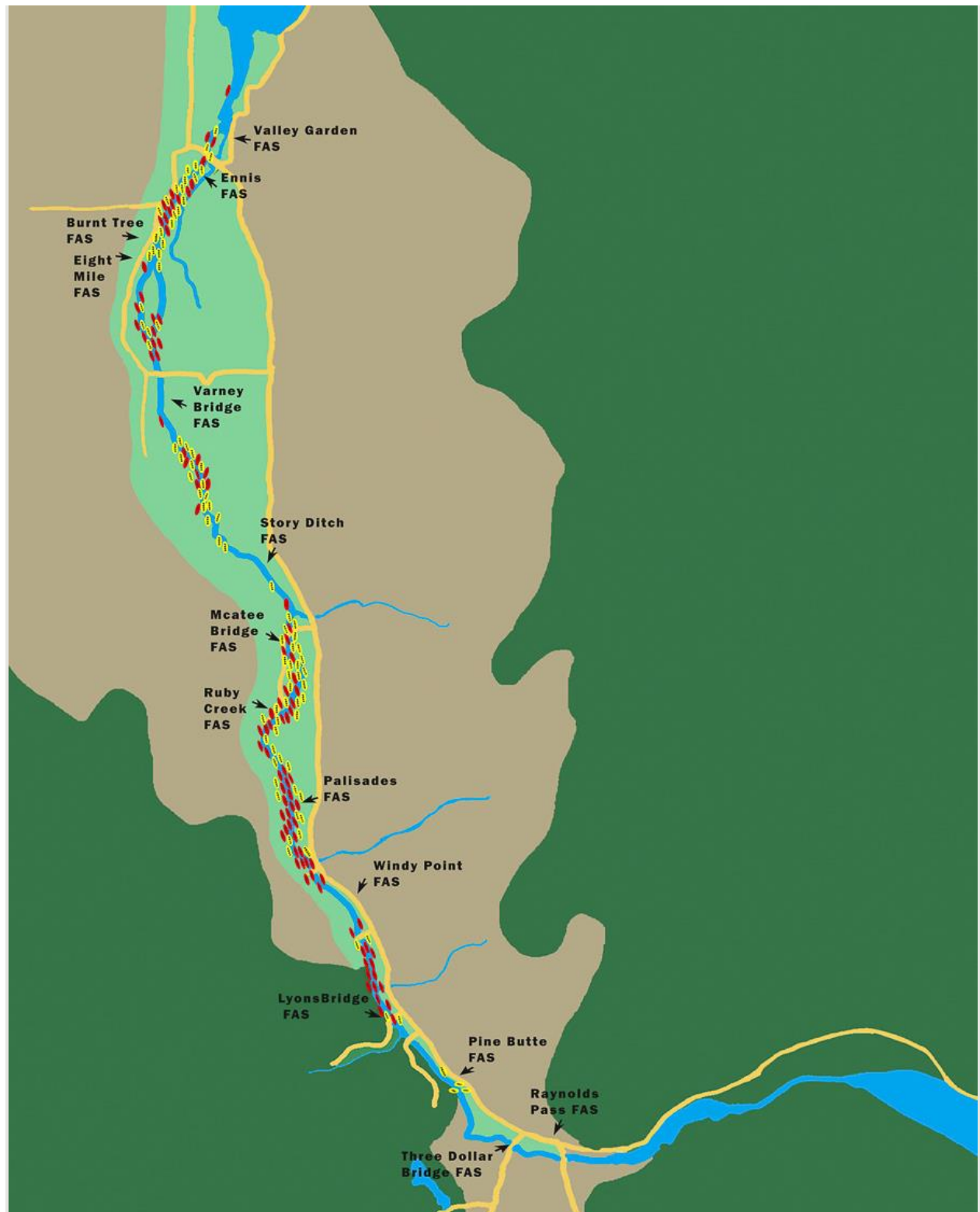
9. We then “doubled” and later “tripled” the number of non-commercial boats to forecast what use would look like in the future if rest and rotation is adopted to “solve” non-commercial use instead of actually setting a carrying capacity for use. If Gallatin County continues its growth trajectory, the population will double in 20 years and triple in 35 years.
10. Red boats represent guided boats while yellow boats represent unguided boats (the boats are scaled to be larger than real life to allow them to be visually displayed more easily).

Status Quote - organic spreading through the system

The models using the status quo show that boats are well dispersed throughout the river system. Most boats are in the “float fishing zone” but 7.3% also use the current wade only zones (often for just part of the day). We see that in the morning boats are clustered around launches but as the day goes on and they travel down river boats disperse. Boat density is about 5 per mile or approximately 10 anglers per mile in the float fishing zone.



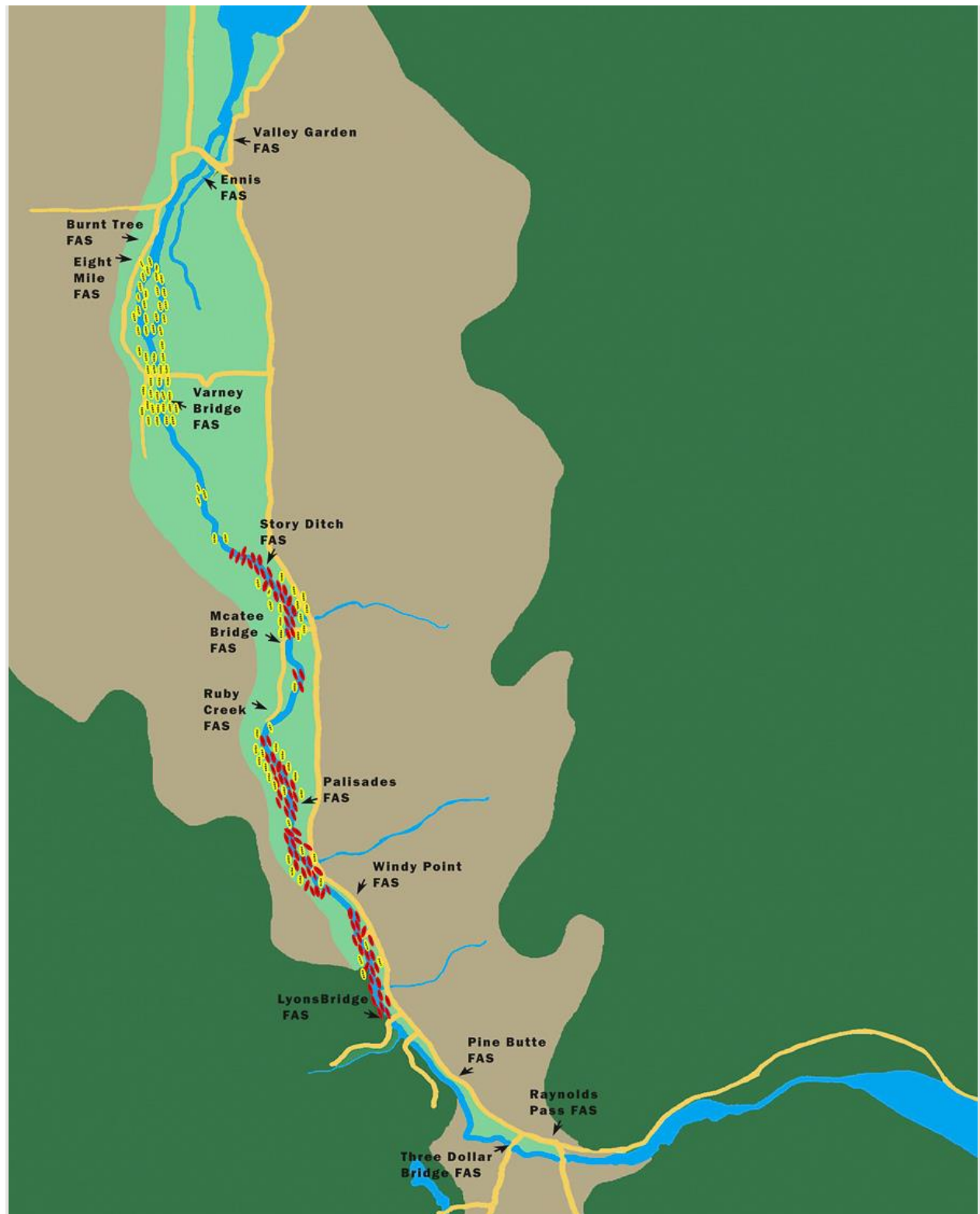
11 am on July 10th when most boats have been launched. Red is guided and yellow is unguided. Launches are dispersed organically up and down the river. There are equal amounts of non guided and guided boats



3pm on July 10th under the status quo. At 3pm most boats are still on the water but have also dispersed even more as the day progresses

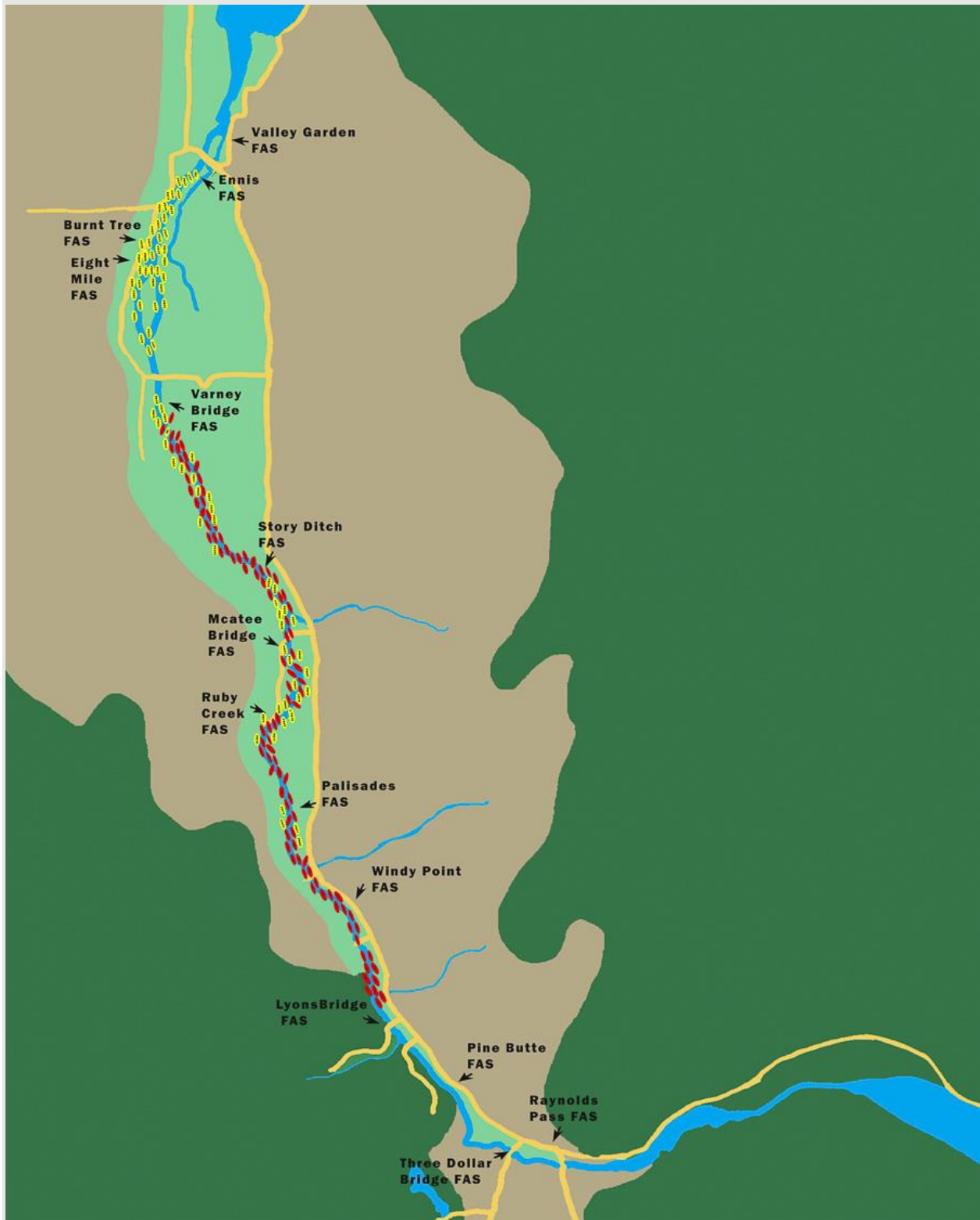
The effect of boat bans and Rest and Rotation on Saturdays

On Saturdays Varney to Ennis Bridge would be banned for anglers that hire guides under one of the petitions being considered. This would force 25.4% of all anglers hiring float guides to compress into a smaller zone. It would also result in a “dead spot” on the river since few anglers would now use Story Ditch access for launching (too short of a float) and to a lesser degree McAtee Bridge. We estimate a larger percentage than normal of non guided float anglers would launch at Varney Bridge producing another “wave” of boats. There will likely be dramatically increased crowding at Lyons, Windy, Palisades, Ruby and Varney Bridge access sites on these days.



What a Saturday would look like at 11am after most boats have launched. Guided anglers would be banned from Varney to Ennis. This also backs up launches as few boats would use Story Ditch resulting in a huge gap below McAtee since most

*commercial trips would need to launch even higher to have the correct float length.
Boats are heavily clustered*

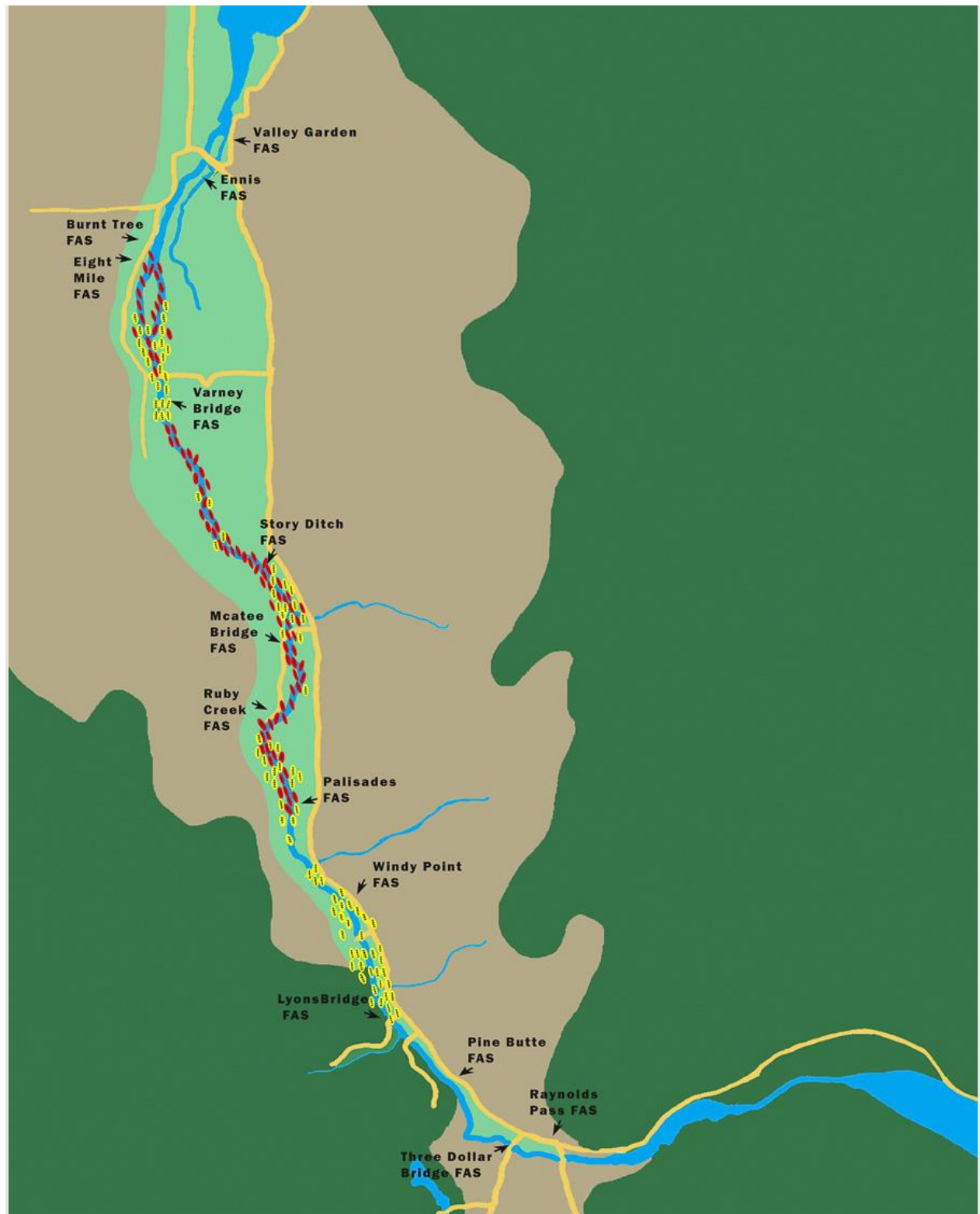


Saturday at 3pm. Even after several hours boats are still heavily concentrated and clustered. Ramps at both launch and take out will be poorly utilized. Some

location swill be overcrowded at morning launches while others will be under used.

The effect of boat bans and Rest and Rotation on Sundays

On Sundays the reach from Lyons Bridge to Palisades would be closed to guided anglers in one of the proposals. This reach is the least used zone by non-commercial floaters since it is the furthest drive from population areas such as Bozeman. This reach is more heavily used by guided float anglers which often come from within the Madison Valley in towns like Ennis, or tourist locations such as Big Sky and West Yellowstone. Guides also often prefer to drive up the river a bit since this reach is used less by resident float anglers. Closing Lyons and Windy is very problematic since they can handle a lot of parking and launch capacity. This also forces guided trips further downriver into the zone that is currently preferred by most non-commercial float anglers. Even with the “carrot” of a lack of guided anglers between Lyons and Palisades, it is likely that only some non-guided anglers will make the longer drive to this reach. Many non-commercial anglers are also nervous about floating under the potentially dangerous Wolf Creek Bridge which is low to the water with numerous piers across the river. As a result of the safety concerns and longer drive many non-guided anglers would likely still float from Palisades to Ennis bridge in a highly congested reach as a result of Rest and Rotation.



On sundays 54% of all guided anglers floating would be displaced into a smaller space. They will be displaced into the lower reach of the upper madison float zone which is also the most popular with non-commercial float anglers. Although some non-

commercial anglers will make the long drive to Lyons, it is likely many will still launch closer to Ennis producing a significantly increased sense of crowding



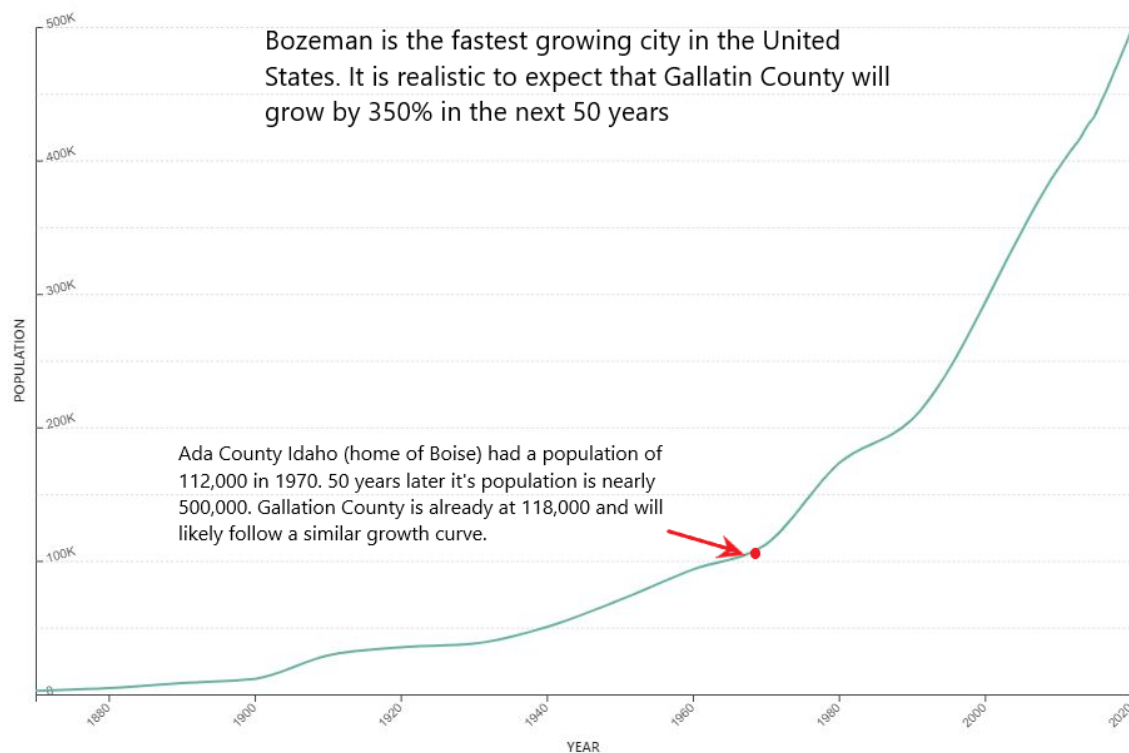
At 3pm boats under the status quo are the MOST dispersed. Under Rest and Rotation all boats are backed up because they can't pass Ennis bridge while

floaters upstream have moved down. The river gets more and more compressed as a result.

What will the Gallatin County Look Like in 50 years?

Bozeman is the fastest growing city in the United States with an annual growth of 3.6% per year (4 times the growth rate of the rest of Montana). On average 12 people move to the Gallatin County every day. Even if growth rates slow slightly from the current blistering rate, it is projected that the county will grow by 350% within the next 50 years and surpass 500,000 residents. New residents are attracted to the outdoor recreation opportunities that the region provides and the Madison is just a short drive away. Ada County Idaho, the home of Boise, experienced a similar growth curve and was only 112,000 residents in 1970. In 50 years Ada County exploded to just under 500,000 residents.

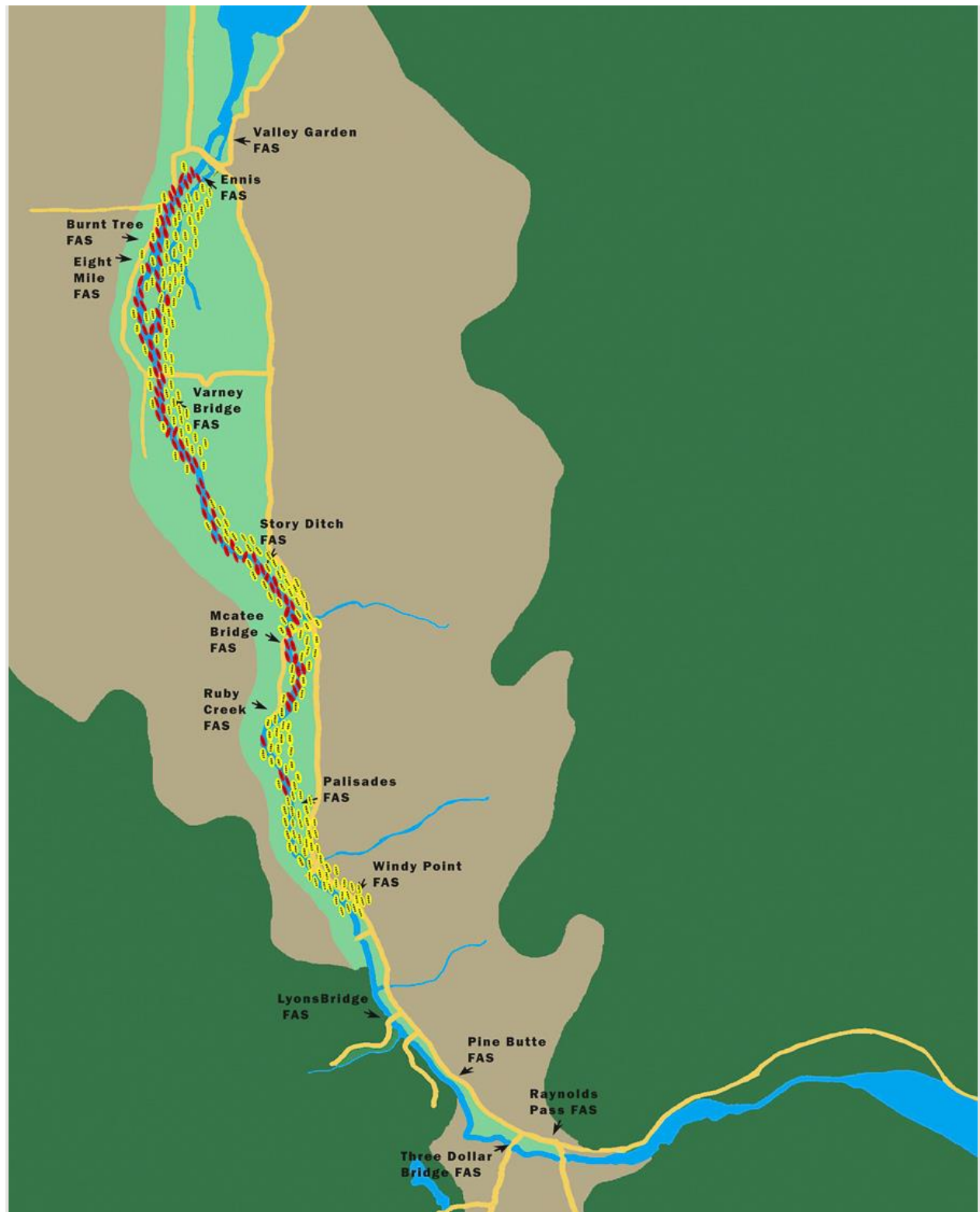
Ada County, Idaho Population Growth



Explosive growth of the Gallatin Valley will drive increased use. Rest and Rotation will not protect the river from population growth

20 years in the future

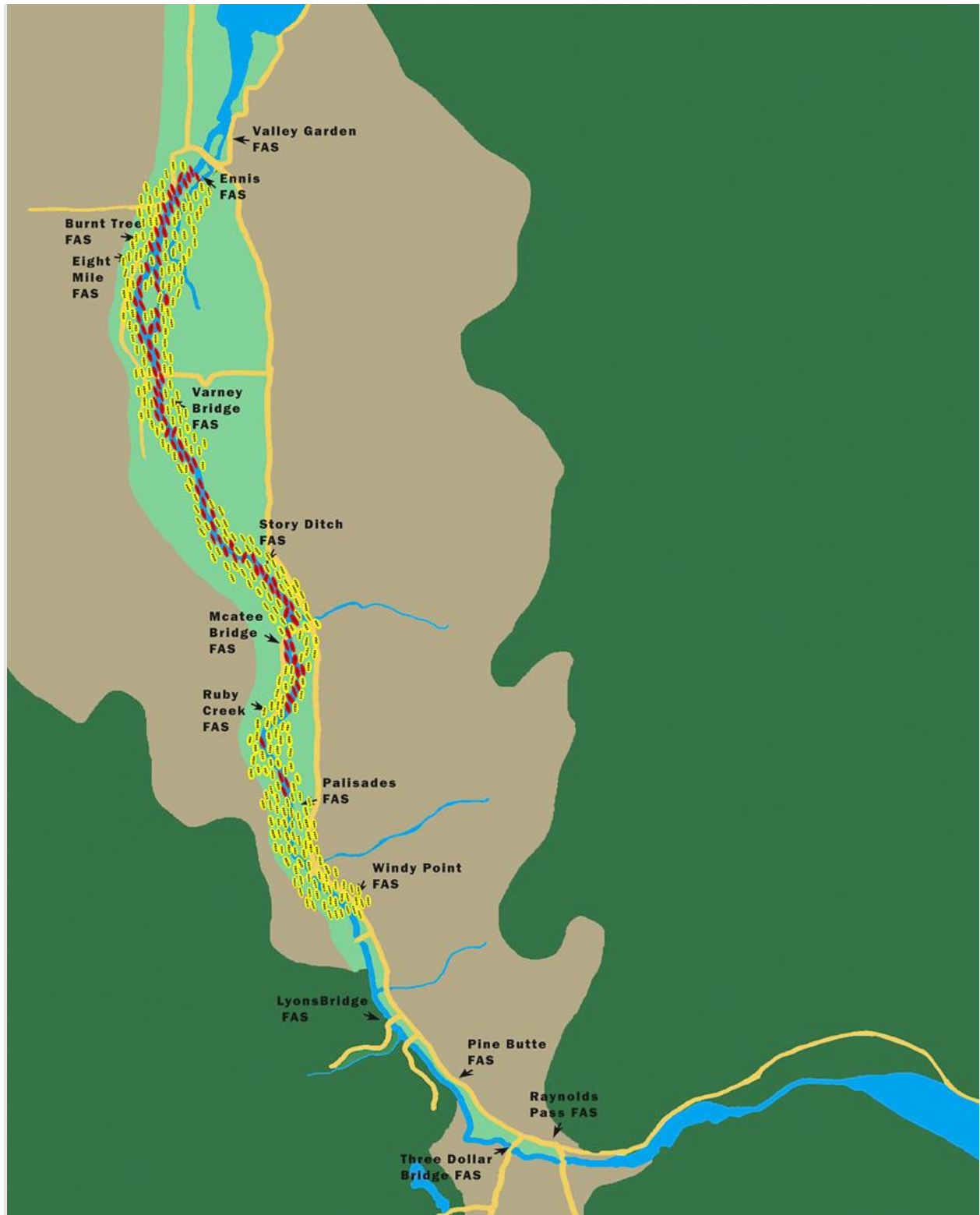
These models show what would happen in 20 years under the assumption that guided trips are capped at current rates while rest and rotation is adopted but a carrying capacity on non-guided use is not put in place. The Gallatin County will likely double in population by 2040. If we assume that the non-commercial float traffic will grow at the same rate, we can expect a much more crowded river in 2 decades.



This is what a Sunday will look like in 20 years when the regional population doubles. Rest and Rotation does not help crowding. A carrying capacity needs to be set and managed for that will protect the current quality of the recreational experience on the Madison

35 years in the future

The prospects grow grim in 35 years when we expect the population to have grown by 300%. Rest and Rotation will not set a capacity for non-commercial use and the river will suffer. Even with guided trips capped at current levels of use, non-commercial use levels will balloon in the future without tools that manage for a recreational carrying capacity.



At current growth rates we can expect a 300% population increase within 35 years. Even if we cap commercial trips now, if a carrying capacity is not set for ALL use the river will become over run. Rest and Rotation will not protect the river from its biggest threat: the growth of Bozeman

What can you do?

Take 5 minutes to submit public comment to the Montana Fish and Wildlife Commission BY OCTOBER 30 deadline by emailing: madisonrivercom@mt.gov

We recommend considering the following:

1. Support setting limits on guided trips at current levels of use (Proposed New Rule 6)
2. Oppose Rest and Rotation (Proposed New Rule 2)
3. Oppose banning watercraft on any stretch of the river (Proposed New Rule 3)
4. Support adding a no-cost, no limit stamp (New Rule 16)
5. Support a 1 year plan evaluation (New Rule 13)

[Madison River Recreational Management Proposed Rules](#) - Click on PDF under "Related Attachments" to see proposed rules.

In addition, we recommend that more specifics be added to the detail of the no-cost, no limit stamp as well as the 1 year plan evaluation:

We recommend that the free stamp be issued in the form of a day pass which can be issued using a free app on your phone or printed online. A day pass will allow more accurate data to be collected on ALL use including non-commercial. We further recommend that after a year of data collection a working group should determine if a carrying capacity should be established for recreational use that may apply to non-commercial users in addition to commercial users.

We will ONLY future proof the recreational experience on the Madison if we have tools to set a carrying capacity for recreation. This is NOT accomplished by banning boats or Rest and Rotation.