Evaluating the Influence of R3 Treatments on License Sales
These programs, known here as ‘treatments’, have been analyzed to measure their effects on participating individuals, otherwise known as the ‘treatment groups’.

**Contest Entries** – completed forms from shows and events where PFBC had a booth. Target: potential anglers, non-license buyers.

**Family Fishing** - a hands-on education program targeting families, and provided basic fishing skills as well as the opportunity to fish. Target: geared to recruit and reactivate anglers.

**Fly Fishing Program** - a hands-on education program that targeted families and provided basic fly fishing skills training and the opportunity to fish. Many targeted at women. All stages of R3.

**Fishing Skills Instructor Training** - a “train-the-trainer” workshop that worked to certify individuals to deliver PFBC angler education programs. Target: seeking to retain anglers.

**Late Season Discount** – an effort to recruit more anglers to purchase licenses by offering a discounted rate late in the season. Target: lapsed anglers. Also recruit.
Retained customers are those anglers who purchased a license within the year of treatment as well as during the previous year. In order to properly classify an angler as “retained”, only one year of license history is required. Five years of data is needed in order to accurately calculate this. Within the "Reactivated" category there are two sub-definations: “Short-Term Lapse”, and “Long-Term Lapse”. Those with a lapse of 1 to 3 years were identified as a Short-Term Lapse, while those with a lapse of 4 or 5 years were identified as a Long-Term Lapse. Individuals with a lapse of more than 5 years are identified as recruited.
Individuals who had entered ‘treatment groups’ were analyzed against the greater license buying population. In order to do so, Treatment Group individuals were mapped to license purchasing data within the PALS data set in order to gather purchasing history.
While each treatment had a unique focus, either to recruit, reactivate, or retain anglers in the license market, their overarching goals were the same: to influence long term buying patterns, creating sustainable growth in the license market.

Discuss metrics used.

In analyzing the results presented here it is important to note that while there are many reasons an individual would enter into a treatment group, all treatment groups were comprised of individuals who choose to participate in the contest, event, or program, introducing both a selection and avidity bias.

These biases are important caveats in analyzing the data. Selection bias means that the person who signed up was not randomly assigned, but rather they chose to participate. By selecting themselves into the sample they may have had a better idea about whether or not they wanted to purchase a license. As well, avidity bias means that more avid anglers may have been more likely to participate in these treatments. This can potentially skew the findings as more avid anglers are more likely to purchase licenses.
This approach had two limitations: (1) incomplete data for individuals in various Treatment Groups did not allow for the confidence to suggest that an individual had *not* purchased a PA fishing license during the timeframe, but rather that individuals were not able to be mapped back to license purchasing data;

Not a limitation, but a note: because treatment dates occur throughout the license year, defining an angler’s purchase relative to the license year becomes difficult. For this reason, we’ve broadened the definitions of “recruited” and “retained” anglers to include purchases relative to the date of treatment, not necessarily relative to license years.
RECRUITMENT:
KEY FINDINGS
Question being answered: Did participants hold a license at the time of treatment?
Green = yes
Red + Blue = no.
Potential customers include those for whom we couldn’t find any history of license purchase.

Here, we’re getting to see the effects of the data limitations. Neither “potential” or “prior” customers had a license at the time of treatment. Overall, contests had the most participants, especially among potential customers. However, late season discounted licenses attracted more lapsed license holders than contests. Licensed holders did not participate as much as non-license holders and were more involved with contests and family fishing programs than late season discounted licenses.
There are about four male customers for every female customer in the PALS data. There are slightly more anglers that are ages 45 and over.
Many of the treatment programs appealed to demographic groups not well-represented within the PALS data. Of those in the treatment group for which gender data were available, a greater proportion of women were represented compared to general license sales in several treatment groups. Contest and Fly Fishing Programs had much higher participation rates from women. Family Fishing Programs had high participation rates among women and those ages 35 to 44. One treatment appealed to both younger participants as well as women: Fishing Skills Instructor Training.
Although fly fishing programs don’t attract as many as contests, they convert more participants into license holders. Contests engage a lot of non-license holders, but they are not motivating enough for participants to purchase a license as do fly fishing programs and late season discounted licenses.
Lapsed customers are also more likely to reactivate their license when they participate in the fly fishing program or family fishing program than in a contest.

*I’ll have a table handy with % breakouts of short term, long term lapse figures.
Of those anglers designated as “reactivated” or “recruited”, many purchased their PA fishing license prior to entering the treatment, within the same license year or within one month afterwards. For example, if they entered treatment in February, but purchased their license in June of the same year, they would be considered to have purchased prior to treatment, within the same license year.
RETENTION: KEY FINDINGS
Churn, as used here, denotes the proportion of anglers who did not renew their license in the following year. Thus, the 2015 churn rate of 37.2% shows that (62.8%) of all anglers who bought a license in 2014 were retained anglers in 2015.

5-year moving average shown in blue. This denotes an overall decline in the churn rate, at a slow rate.
Lower Churn Rates in Treatment Groups

Individuals Who Entered Treatment Groups had:

- Lower Churn Rates
- Higher Rates of License Purchasing 5 yrs. After Treatment

This could likely be due to the avidity of the angler and not necessarily caused by the treatments.
Those who participated in a treatment are more likely to renew their license the following year than licensed anglers that did not participate in the PALS data. Skills Instructor Training had the highest retention and reduced rate licenses had the biggest percentage of people that did not renew their licenses each year. For reduced rate licenses, we actually see a possible reduction in the likeliness of treated individuals to purchase in the next year.
Those who participated in a treatment are more likely to renew their license the following year than licensed anglers that did not participate in the PALS data. Please note that in 2016 for reduced rate licenses, everyone purchased a license at a discounted rate, so there is no measurable churn rate. When you look at the following year, 55% of those who purchased a license at a discounted rate did not purchase a license the following year!
There is an observable pattern in the PALS data: for each cohort of buyers in a given year, they are less likely to have purchased a license in the year before, and even less likely to have purchased in the previous year, and so on. As well, they are also less likely to purchase in the next year, and even less likely in the one after that, and so on. However, they are slightly more likely to purchase in the year following a purchase then the year preceding a purchase.

This pattern holds true for those in the treatment groups. Each treatment group sees an incline in purchase rate leading up to the treatment year, however, in the years after the treatment there is a much higher than expected purchase rate. Because anglers don’t have to purchase in the year of treatment in this measure, in some cases the purchase rate increases in the year following treatment.
For this study, comparing the demographics on the participants in the various treatments to licensed holders in the PALS data was difficult because of the missing data. Many of the participants are not licensed holders and so it’s important that the state collects their date of birth and gender to understand the demographics of those participating. Collecting the address can be a useful tool as well to gathering further demographic information. If data can’t be matched to PALS, there is no guarantee on the exact number of participants that purchased a license.

Voluntary licenses – under 16 and other groups. The ability to track an angler’s trajectory through their fishing experience in PA is important to being able to craft effective R3 programming.
Saw a net increase in license sales (relatively low churn with increased rates of reactivation and recruitment), when a treatment was targeted at a specific age group or was focused on a single topic.

Success is achieved when a program can put the license into context and demonstrate its value!
Designing a follow-up survey to understand why the successful programs found success would help to replicate that success with other programs in the future. Was it the hands-on nature of the fly-fishing program that can be credited for the success? Then maybe hands-on ice-fishing, or kayak/canoe fishing programs could serve those markets! Was it family-oriented fishing? Then maybe grandparent/grandkid programs during the summer, or overnight family camping + fishing excursions could also experience success!

Lastly, speak to the notion that replicating this study to build a deeper understanding of which programs are working, would be instrumental to gearing programming to the unique needs of the PA angling and license buying population.
QUESTIONS?