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Recommendations and Strategic Tools for Effective Angler Recruitment, Retention and Reactivation (R3) Efforts

A work product of the
partnership between the

**Aquatic Resources
Education Association**

and the

**Recreational Boating &
Fishing Foundation**

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Introduction

In August 2015, the Recreational Boating & Fishing Foundation (RBFF) and the Aquatic Resources Education Association (AREA) partnered on a project to develop recommendations and strategic tools to increase the effectiveness of angler recruitment, retention and reactivation (R3) efforts nationally. Using expertise and strategic tools developed by the Wildlife Management Institute (WMI) and Bob Byrne Consulting for hunting and shooting sports R3 efforts, and building upon the foundation provided by RBFF's *Best Practices Workbook for Boating, Fishing and Aquatic Resources Stewardship Education*, RBFF and AREA began a process to develop recommendations for angler R3 efforts with the primary goal of enabling state agencies, nongovernment organizations, and the fishing industry to improve the effectiveness and efficiency of their individual and collective work.

As part of the process, RBFF and AREA assembled a working group comprised of state fish and wildlife agency education and marketing staff with knowledge and experience in developing and implementing R3 efforts (see Acknowledgements). Together with project leaders, this team framed, drafted and produced the contents of this document through in-person meetings, conference calls and countless review cycles.

From the beginning, the goals, process and products of this project were produced through community consensus. The products, ideas, tools and recommendations contained in this document are the result of the alignment of numerous strategic visions and personal experiences. Our hope is that the resources and materials produced through this partnership will assist those who are deeply vested in the tradition of fishing to secure its role in the future of America's culture.

Acronyms Used in This Document

R3: Recruitment, Retention and Reactivation

RBFF: Recreational Boating & Fishing Foundation

AREA: Aquatic Resources Education Association

ORAM: Outdoor Recreation Adoption Model

Literature Review: Angler Recruitment, Retention and Reactivation Literature Review

Work Products Developed

(See Appendices for additional details for some work products)

1. Highlights of the Angler Recruitment, Retention and Reactivation Literature Review

To assist the project leaders and the Angler R3 State Agency Working Group (Working Group) in developing recommendations for angler R3 efforts, a review of pertinent research was conducted at the outset of this project. This independent literature review can be accessed at [https://www.takemefishing.org/getmedia/b18711d8-874c-4714-8a50-7188a6d08bc9/Highlights-of-Angler-Recruitment,-Retention-and-Reactivation-\(R3\)-Literature_March-2016](https://www.takemefishing.org/getmedia/b18711d8-874c-4714-8a50-7188a6d08bc9/Highlights-of-Angler-Recruitment,-Retention-and-Reactivation-(R3)-Literature_March-2016).

2. Angler-type Definitions (Appendix A)

The Angler Recruitment, Retention and Reactivation (R3) Literature Review (literature review) revealed that there is not a unified standard for how angler groups are classified as a function of their participation. The Working Group addressed this issue by specifically identifying stages of participation and producing a definition that quantifies each stage. This will allow researchers and angler R3 administrators to begin using common terminology to describe angler populations.

The following terms were selected and defined:

- **ACTIVE ANGLERS** – Active anglers are all anglers who currently possess a fishing license or participate in angling.
- **LAPSED ANGLERS** – A lapsed angler is any angler whose license purchases (or participation in angling) have been interrupted for any length of time. Intervention strategies will vary depending on the length of time that they may have lapsed.
- **NEW ANGLERS (RETENTION)** – New anglers are anglers who purchased licenses (or participated in angling) in the current year, but not in any previous year. Current state license sales database limitations may not be able to determine when or if they may have fished in the past. However, over time, this limitation will be eliminated as the database spans longer timeframes. New anglers are prime targets for retention interventions in the year after their first license purchase.

- **RETAINED ANGLERS (RETENTION)** – Retained anglers are anglers who have repeatedly bought licenses (or participate in angling). Specifically, retained anglers have purchased a license in the current year as well as in the immediate past year (and longer). They likely will need only minimal interventions to maintain their retained angler status.
- **RECENTLY LAPSED ANGLERS (RETENTION/REACTIVATION)** – Recently lapsed anglers are anglers whose license purchases (or participation in angling) have been interrupted for less than three consecutive years. Retention/reactivation interventions have the highest probability of success if implemented within a three-year time frame.
- **LONGER-TERM LAPSED ANGLERS (REACTIVATION)** – Longer-term lapsed anglers are anglers whose license purchases (or participation in angling) have been interrupted for three consecutive years or more. Anglers who lapse for three years or more will likely need different types of interventions (reactivation strategies) than recently lapsed anglers.
- **POTENTIAL ANGLERS WHO MAY CONSIDER FISHING (RECRUITMENT)** – People who have never been fishing, but have expressed an interest in doing so. Or, people who do not know if they are interested, but would be willing to go if an opportunity to do so was presented to them.

3. Angler R3 Threats

The Working Group identified five direct threats to fishing: Lack of Access, Lack of Awareness, Lack of Skills, Lack of Motivation, and Lack of Angler R3 Capacity. Additional indirect threats or barriers that could affect a person’s participation in fishing were also identified as sub-sets of these threats.

The items in this list represent potential threats, whether real or perceived, to participation in fishing. They should be used as a conceptual framework for the angling R3 community to use strategically when developing or improving angler R3 efforts.

Angler R3 Working Group identified the following barriers:

Lack of Access

- Lack of fisheries resource
- Lack of convenient access
- Lack of facilities and infrastructure
- Perceived cost as a barrier

Lack of Awareness

- Lack of information accessibility
- Underappreciated values of angling
- Environmental and health concerns within potential participants
- Lack of awareness of opportunities

Lack of Skills

- Lack of basic fishing skills
- Hard to understand rules and license process
- Lack of knowing where to go fishing
- Lack of effective learning tools

Lack of Motivation

- Competing outdoor actives
- Competing indoor activities
- Lack of relevance to potential audiences
- Lack of casual organized angling activities
- Lack of reminders and invitations
- Lack of social support available to participants
- Fear of citation
- Perception of complex regulations
- Increased risk sensitivity of potential participants

Lack of Angler R3 Capacity

- Lack of effective R3 implementation, coordination and evaluation
- Inability of states to integrate emerging technology
- Lack of focus on social support in R3 efforts
- Restrictive data usage policies
- Ineffective communication
- Lack of inter and intra coordination among R3 organizations
- Complex regulations
- Lack of industry/retail/tourism focus on new audiences

4. Angler R3 Effort-type Definitions (Appendix B)

The Working Group produced and defined a list of angler R3 effort-types as a way to identify and categorize the majority of angler R3 efforts currently being conducted in the U.S. This list should not be viewed as a comprehensive census of all angler R3 efforts, but rather as an initial catalogue of current efforts that document the general scope of R3 efforts being implemented in the U.S., and to identify where those efforts are likely impacting the individual process of becoming an angler in the Outdoor Recreation Adoption Model (ORAM).

5. Map of Angler R3 Effort-types (Appendix B)

Each of the angler R3 efforts identified by the Working Group were “mapped” in relation to the ORAM. Each effort-type is represented by its scope of influence on a participant’s path to either becoming an angler, being retained as an angler, or being reactivated as an angler.

6. Evaluation Framework for Angler R3 Efforts (Appendix C)

During the process of documenting the significant variety of angler R3 efforts currently being conducted in the U.S., the Working Group noted a common shortcoming in the design and delivery of the majority of those efforts. Namely, a general lack of evaluation data that documented an effort's ultimate outcome (i.e., the number of new anglers or increased fishing participation the effort produced). Additionally, there appeared to be an absence of evaluation structures needed to help angler R3 administrators improve their program over time.

This section presents a process and set of tools that angler R3 effort administrators can use to design effective R3 efforts, evaluate their ultimate impact, and identify the elements of the efforts that need to be improved.

List of Recommendations

1. **Angler R3 efforts within agencies and organizations should be assessed and mapped using the Outdoor Recreation Adoption Model.**
2. **Improve the capacity of agencies and organizations to design, implement and evaluate angler R3 efforts.**
3. **Develop strategic angler R3 program priorities within agencies and organizations.**
4. **Improve partnerships among agencies and organizations to collaboratively implement angler R3 efforts.**
5. **Improve angler R3 efforts by ensuring that they are outcome-driven in their design, implementation and evaluation.**
6. **Coordinate angler R3 efforts with hunting and shooting sports R3 efforts.**
7. **Structure future angler research to address the threats, needs and strategies and other angler R3 best practices.**

Detailed Explanation of Recommendations

1. Angler R3 efforts within agencies and organizations should be assessed and mapped using the Outdoor Recreation Adoption Model.

Finding 1

The angler R3 effort-types mapping exercise (Appendix B) conducted by the Working Group is a qualitative assessment of angler R3 efforts currently being implemented. This was used to provide a broad overview of the types of efforts being conducted in the U.S. A state-level (or organization-level) effort-type mapping exercise is far more useful in documenting the scope of angler R3 efforts, identifying where the efforts are being implemented (or not), and where they have the greatest potential to influence angler participation.

The importance of mapping angler R3 efforts cannot be overstated. It is the first step in conducting a programmatic assessment to identify where R3 efforts should be strategically targeted.

Recommended Actions:

Develop state- or organization-level “maps” (example in Appendix B) of angler effort-types using the ORAM to:

1. Determine the scope of current R3 efforts (recruitment, retention, and/or reactivation efforts).
2. Identify gaps in the state’s or organization’s R3 efforts to address all stages of the ORAM pathway.
3. Highlight opportunities to link R3 efforts (e.g., link a recruitment effort to a retention effort) in order to provide next steps for participants and increase the impact of multiple efforts.

2. Improve the capacity of agencies and organizations to design, implement and evaluate angler R3 efforts.

Finding 1

During the process of drafting the threats to angler R3, the Working Group noted that staff time dedicated to angler R3 effort-types (Appendix B) was either very limited or unknown. Dedicated staff resources are critical to an organization’s ability to implement R3 efforts in an effective, efficient manner that capitalizes on the organization’s strengths as well as those of its partners.

Recommended Actions:

Assess staff allocated to angler R3, their expertise, and their program budgets so that internal and external angler R3 efforts are effectively coordinated to target identified threats to angler participation.

Finding 2

The literature review found few examples of programs with effective evaluation systems in place. Currently, the most commonly used evaluation tools only measure program *outputs* (e.g., number of participants; fishing catch rates; age, gender and race of participants; and overall satisfaction). These metrics do not address ultimate effectiveness or *outcomes* (e.g., participant mastery of angling skills and knowledge, or participant behaviors such as going fishing or purchasing a fishing license). A consequence of this lack of outcome-based R3 effort focus is that most programs do not have data management systems for R3 efforts that track indicators of participant behavior. The Working Group noted that most state fish and wildlife agencies have limited capacity to track a participant from an R3 program to a future license purchase.

Recommended Actions:

Design or reconfigure license purchase databases to incorporate the ability to track individual license purchasers through time (from pre- to post-license purchases), and collect detailed contact information (phone number, email, mailing address) that can be used to implement targeted communications and marketing strategies to selected audiences.

Finding 3

During the process of drafting the threats to angler R3, the Working Group found very few programs designed to specifically address identified threat(s) to angling participation. The group noted that most current efforts are generally conducted with the assumption that the primary barrier to a person's long-term participation in fishing is the lack of angler skills and knowledge. However, the Working Group identified 28 potential barriers to angling, only a few of which were related to a lack of skills or knowledge. The long-term success of angler R3 efforts will depend on developing effective interventions that address the full suite of these threats or barriers.

Recommended Actions:

Develop or redesign angler R3 efforts to specifically target identified threats to participation.

3. Develop strategic angler R3 program priorities within agencies and organizations.

Finding 1

The literature review revealed numerous opportunities to strategically target particular demographics, ages, and ethnicities for angler R3 programs. However, it appears that few organizations adequately utilize these in the design and implementation of their R3 strategies, priorities, or efforts.

Based on the literature review and the experience of the Working Group members, it seems that many organizations implementing angler R3 efforts have not developed a strategic plan that aligns the organization's expertise, capacity, and resources with a particular audience (or audiences) in need of an R3 intervention. For the majority of these organizations, their angler R3 efforts were developed without first identifying the highest priority target audiences within their scope of influence, and then designing strategies to address those audiences' barriers to fishing participation.

Recommended Actions:

1. Complete an internal assessment (see Recommendation 1) of R3 resources, staffing and financial capacity, and desired angler R3 focus prior to the design and implementation of R3 efforts.
2. Based on the results of an internal assessment of angler R3 capacity, develop a strategic plan that identifies R3 priorities (i.e., which threats to target), target audiences, measurable objectives and outcomes, and opportunities for partnership with external organizations.

Finding 2

A consequence of the lack of R3 strategic focus within organizations was noted by the Working Group (supported by the literature review); most R3 efforts address recruitment issues. Very few angler R3 efforts have been designed to address the threats to angler retention or reactivation.

Research has documented a very high churn rate among anglers (infrequent license purchases over time), which results in a relatively low retention rate for existing anglers. In all likelihood, the most effective strategies to increase angler participation (and increase fishing license purchases) are those that reduce angler churn rates. This will require organizations to devote or re-direct resources to angler retention and/or reactivation efforts, and to establish partnerships with other organizations.

Recommended Actions:

Following the assessment listed under Finding 1 above, dedicate resources to provide a balance of recruitment, retention and reactivation efforts, and leverage partnerships to assist in effort implementation.

4. Improve partnerships among agencies and organizations to collaboratively implement angler R3 efforts.

Finding 1

The Angler R3 Effort-types mapping exercise revealed that many current efforts only address a small part of an individual’s journey to becoming and remaining an angler. The majority of these programs have not incorporated, nor linked to, effective “next steps” for program participants.

The Working Group noted that it is unrealistic to assume one organization or agency can provide all the resources and support required to recruit and retain, or reactivate anglers. Thus, it is necessary for agencies to engage other organizations to work together to provide “next steps” for participants. If agencies and organizations collaborate, many of the current angler R3 effort-types would become more effective, providing a broader suite of resources, training, and support for participants.

Recommended Actions:

1. Using the mapping exercise (see Recommendation 1), identify gaps in current R3 efforts where participants likely require next steps, and work with partners to address those gaps with additional efforts or resources.
2. Develop a *community-based* strategic plan to address all of the threats facing angler R3 efforts. The plan should identify the strengths and roles of all potential stakeholders with an interest in angler R3

5. Improve angler R3 efforts by ensuring that they are outcome-driven in their design, implementation and evaluation.

Finding 1

During the process of documenting the significant variety of angler R3 efforts currently being conducted in the U.S., the Working Group noted a common shortcoming in the design and delivery of R3 efforts; a general lack of evaluation data that documented an effort’s ultimate outcome (i.e., number of new anglers or increased fishing participation produced by the effort). Additionally, there appeared to be an absence of evaluation structures that could be used to help angler R3 administrators improve their program over time based on participant and staff feedback.

The findings from the literature review and the Angler R3 Effort-type Mapping (Appendix B) revealed that few angler R3 efforts target a specific threat to angler participation, nor do they address specific barriers to fishing that impact a particular audience.

Recommended Actions:

For all angler R3 effort-types, administrators should commit to the following steps in order to identify the R3 effort(s) needed:

1. Confirm that more anglers or increased angler avidity is needed or desired. This can be assessed using license purchasing data, a review of the demographics and ages of current anglers, etc.
2. Target a specific audience in need of, and receptive to, an R3 effort.
3. Conduct an initial assessment of the target audience's barriers to fishing and what motivates them to participate. Past research, audience surveys, or focus groups can all be used as part of this assessment. Based on a target audience's motivations and barriers to their participation, determine what R3 approach is the most appropriate for them (class, self-learning tool, targeted communication, etc.), and design the effort(s) to specifically address identified barriers and motivations.
4. Use a results chain (see Appendix C) to plan the effort and set the framework to measure the actual impact of the effort (the actual recruitment, retention, or reactivation of the target audience), and its effectiveness in addressing identified barriers to participation.

*Note. Appendix C presents a process and set of tools that angler R3 effort administrators can use to design effective R3 efforts, evaluate their ultimate impact, and identify the elements of the efforts that need to be improved.

6. Coordinate angler R3 efforts with hunting and shooting sports R3 efforts.

Finding 1

The identification of angler R3 threats by the Working Group revealed several threats that are analogous to those identified for hunting and the shooting sports (National Hunting and Shooting Sports Action Plan, Council to Advance Hunting and the Shooting Sports, 2015). Improved strategic coordination within and between agencies and organizations implementing hunting, shooting sports, and angler R3 efforts may result in improved effectiveness and efficiency if common threats to all of these activities are prioritized and targeted.

Recommended Actions:

Establish an R3 coordinating committee composed of agencies and/or organizations that address hunter, target shooter, and angler R3 issues. This committee should have representation from a broad cross-section within the agency or organization

(administration, IT, law enforcement, education, outreach, and wildlife and fisheries programs, etc.) and/or key R3 partners.

Finding 2

The literature review revealed considerable overlap between angler and hunter populations. It is likely that participants in one activity are interested in the other. Thus, angler R3 efforts should include programs that promote fishing to hunters and shooting sports participants and provide opportunities for them to become engaged in fishing.

Recommended Actions:

Collect customer contact information (phone, email, address) for all license purchasers and angler and hunter R3 effort participants (see Recommendation 2) and develop effective communications efforts to notify customers and participants of potential opportunities to participate in all activities.

Finding 3

The ORAM used to describe the process of becoming an outdoor recreationist is the same for anglers, hunters, and recreational shooters. Because potential participants may be in similar stages of adoption, coordinating strategies for programs or interventions that serve common needs will improve efficiencies and help program developers and implementers better understand the needs of all user-types.

Recommended Actions:

Map agency/organization angler R3 effort-types (see Recommendation 1) and share the results with the hunter R3 staff to identify commonalities and potential areas of increased cooperation and coordination.

7. Structure future angler research to address the threats, needs and strategies and other angler R3 best practices.

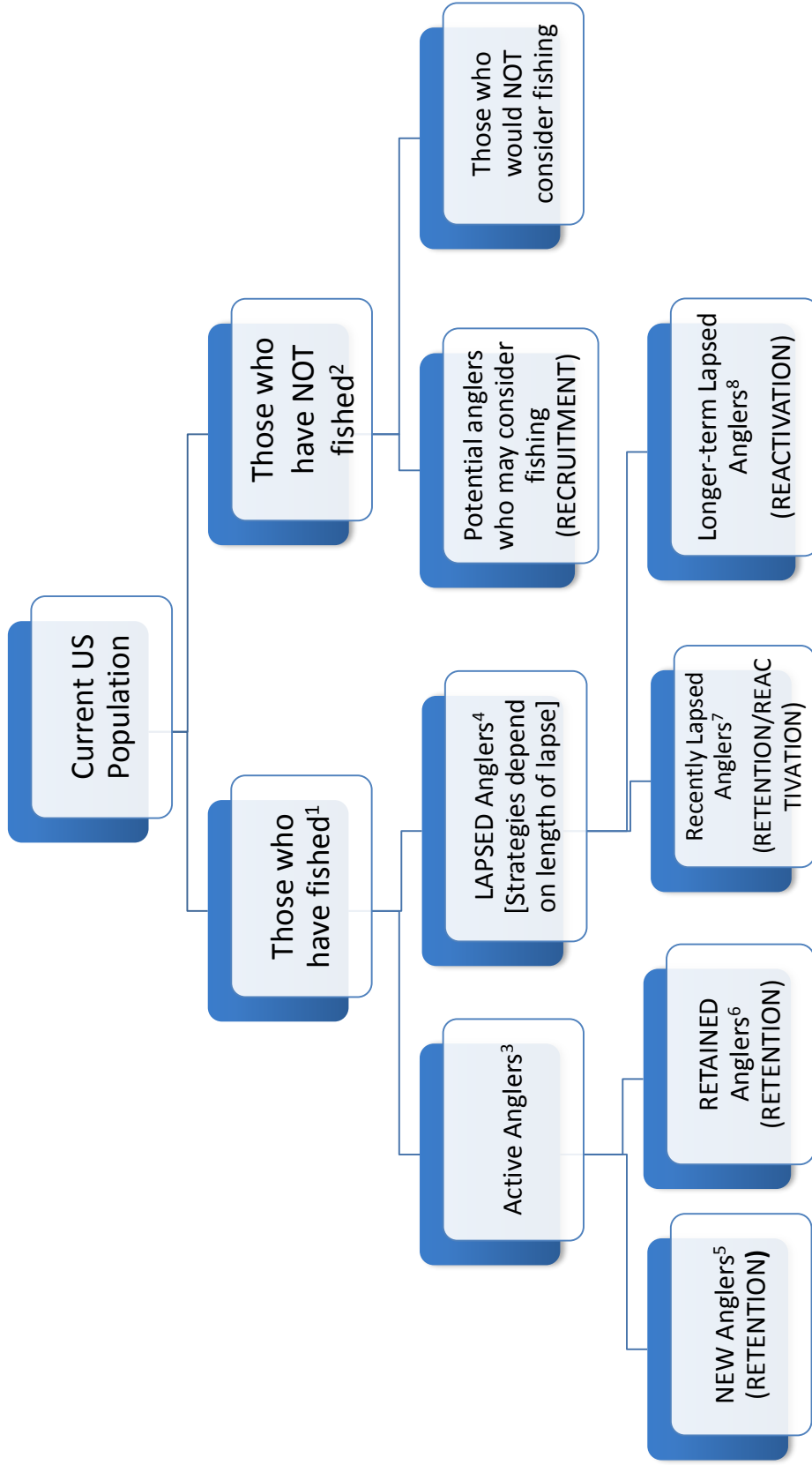
Finding 1

The focus of the studies contained in the literature review demonstrates a need for a more targeted approach to angler R3 research related to angler R3 in the future. Much of the research available addresses topics or issues specific to the interests of individual agencies or organizations, and does not provide actionable information regarding the majority of threats to fishing participation identified by the Working Group.

Recommended Actions:

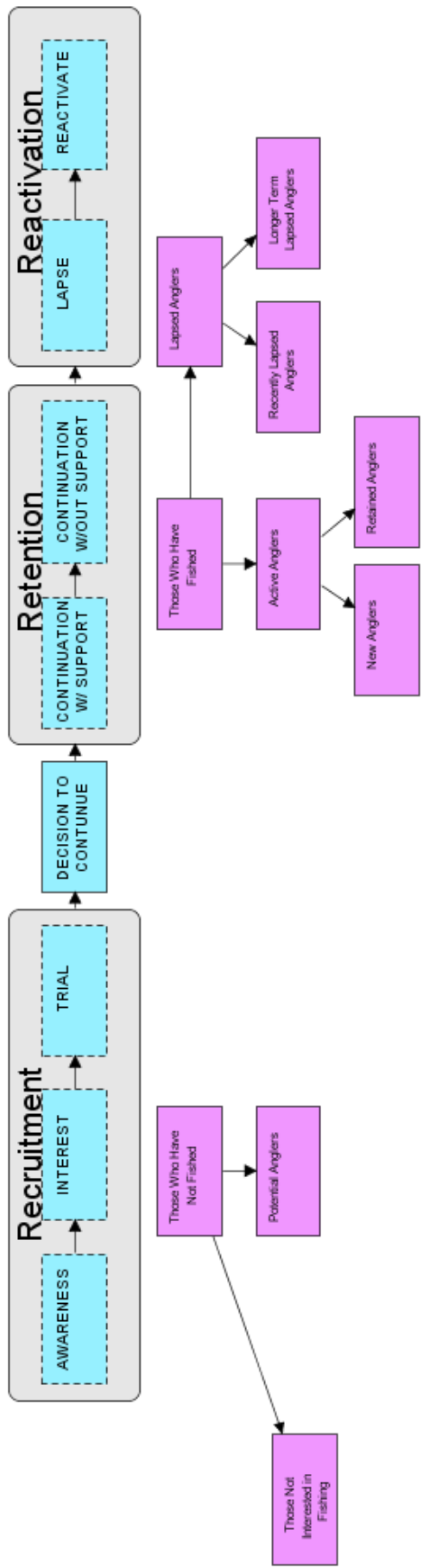
Grant awards and research focus for future angler-related research projects should include projects that document and describe the full suite of threats and barriers to angler participation identified in this report and other angler R3 best practices documents. Research findings should be used to assess effectiveness of current efforts in addressing those threats and barriers and to guide revisions or development of angler R3 efforts.

Appendix A Angler-type Definitions



- 1 People who have fished are defined as anyone who has fished, regardless of how long ago that may have been. Current state license sales database limitations may not be able to determine when, or if, they may have fished in the past. However, over time, this limitation will be eliminated as the database spans longer timeframes. However, as a result of having tried angling, they are likely different than those who have never participated in the activity.
- 2 People who have never been fishing and are entirely new to this activity. They are likely different from those who have participated in the activity in the past.
- 3 Active anglers are all anglers who currently possess a fishing license or participate in angling.
- 4 A lapsed angler is any angler whose license purchases (or participation in angling) have been interrupted for any length of time. Intervention strategies will vary depending on the length of time that they may have lapsed.
- 5 New anglers are anglers who purchased licenses (or participated in angling) in the current year, but not in any previous year. Current state license sales database limitations may not be able to determine when or if they may have fished in the past. However, over time, this limitation will be eliminated as the database spans longer timeframes. New anglers are prime targets for Retention interventions in the year after their first license purchase.
- 6 Retained anglers are anglers who have repeatedly bought licenses (or participated in angling). Specifically, retained anglers have purchased a license in the current year as well as in the immediate past year (and longer). They likely will need only minimal interventions to maintain their retained angler status.
- 7 Recently lapsed anglers are anglers whose license purchases (or participation in angling) have been interrupted for less than three consecutive years. Retention/Reactivation interventions have the highest probability of success if implemented within a three-year time frame.
- 8 Longer-term lapsed anglers are anglers whose license purchases (or participation in angling) have been interrupted for three consecutive years or more. Anglers who lapse for three years or more will likely need different types of interventions (Reactivation strategies) than recently lapsed anglers.

Figure 1. Alternative Outdoor Recreation Model with potential target angling populations.

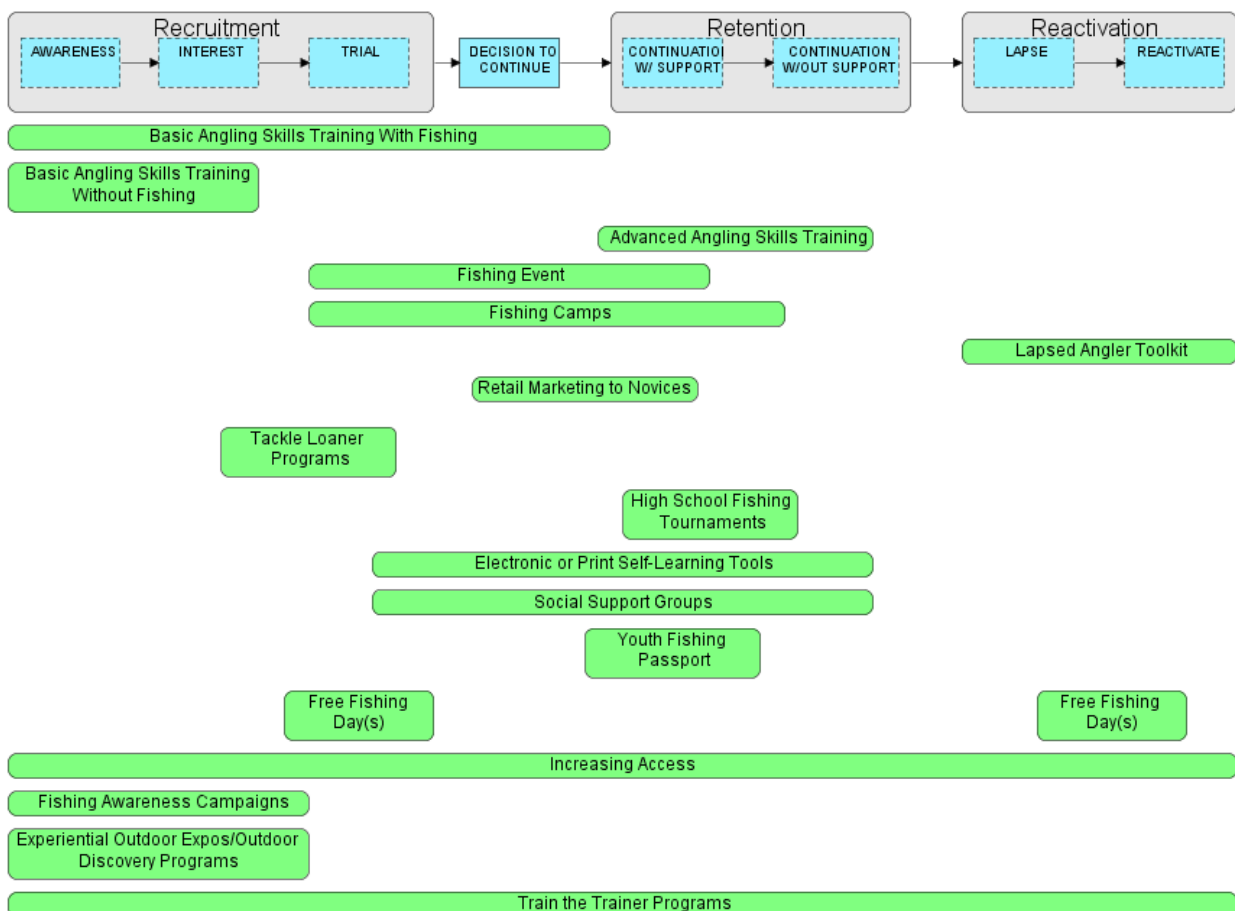


Appendix B Angler R3 Effort-types

The following list of angler R3 effort-types was developed by the Angling R3 State Agency Working Group as a way to identify and categorize the majority of angler R3 efforts currently being conducted in the U.S. This list should not be viewed as a comprehensive census of all angler R3 efforts, but rather as an initial catalogue of current efforts that documents the general scope of R3 efforts being implemented and to identify where those efforts are likely impacting the individual process of becoming an angler (Figure 1).

Figure 1 shows angler R3 efforts “mapped” in relation to the Outdoor Recreation Adoption Model. The length of each effort-type (green box) is a representation of the reach of that particular effort’s impact on a participant’s path to becoming an angler, being retained as an angler, or being reactivated as an angler. For example, the first effort, Basic Angling Skills Training with Fishing, is designed to develop a participant’s awareness of fishing as a desirable activity, increase their interest in fishing, provide them with an initial trial experience, and finally, motivate them to continue. However, the program is not designed to provide additional training and experiences for the participant. An additional effort or interaction is needed (an Advanced Angling Skills Training, for example) to encourage the individual to continue farther down the adoption pathway.

Figure 1. Angler R3 effort-type mapped according to their scope of influence within the Outdoor Recreation Adoption Model



Program: The coordinating entity of funding, infrastructure, staffing and implementation steps. Note: events and classes are implementations of programs.

Event: Fishing opportunity lasting one day or less. This may be one of two types; 1) an event that is largely a threshold experience with little to no skills training or education (i.e. fishing derby), or 2) an event that includes minimal education or skills training component.

Class: Skills or knowledge training that may or may not include a fishing opportunity.

Marketing Effort: One singular action; may or may not be part of a marketing campaign.

Campaign: Combined marketing efforts under a larger marketing strategy.

Angler R3 Effort-types

Basic Angling Skills Training with Fishing

An event or class that combines basic angler education (e.g. casting, fish ID, regulations, basic tackle, knots, fish cleaning, cooking, aquatic education, fisheries management, etc.) with a hands on fishing opportunity. May be small or large groups. Basic tackle often provided. May be one or multiple sessions.

The target of the program may be youth, urban residents, ethnic groups, families, etc. Partners and/or implementers may include: schools, parks, church groups, day-camps, youth organizations, conservation/service organizations, etc.

Examples: Agency sponsored one-day fishing events; School/youth programs that include fishing basics; Parks and recreation workshops or short courses; Fishing classes in a Becoming an Outdoors Woman (BOW) program; Connecticut Aquatic Resources Education (CARE) free "Family Fishing Courses" program.

Basic Angling Skills Training without Fishing

An event or class that includes only basic angler education (e.g. casting, fish ID, regulations, basic tackle, knots, fish cleaning, cooking, aquatic education, fisheries management, etc.) without on-the-water fishing experience.

The target of the training could be youth, urban residents, ethnic groups, families, etc. Partners may include: schools, parks, church groups, day-camps, youth organizations, conservation/service organizations, etc.

Examples: School programs without fishing; Clinics or classes on fishing without fishing experience

Advanced Angling Skills Training

An event or class that focuses on advanced fishing techniques, well beyond the basic (beginner) programs. May focus on specific types of fishing or species-specific fishing education.

Examples: Fly-fishing clinic/event or course; Bass fishing clinic/event or course.

Fishing Event

A fishing event with little or no angler education; Basic instruction or tips may be provided while fishing.

Examples: Family fishing events (NE, CT), advertised fishing opportunities at state and community parks with "roving interpretation" providing assistance as needed (IA)

Fishing Camps

Multi-day fishing classes that provide multiple educational and fishing opportunities over the course of several days. Could be a resident program or a day program. Provides advanced skills training, well beyond what is provided in basic programs.

Examples: Florida Fish and Wildlife Conservation Commission's Fishing Camps Program

Lapsed Angler Toolkit

Marketing toolkit for targeting anglers who have lapsed in license purchase. Communications may include direct mail or email. Messages may include license renewal reminders, as well as educational informational resources, etc.

Examples: RBFF's direct and email lapsed angler toolkit, as utilized by the Georgia Wildlife Resources Division

Retail Marketing to Novices

Retail marketing that specifically targets beginner or novice anglers with basic fishing educational information.

Examples: Oregon Department of Fish and Wildlife's retail partner "end cap" fishing promotion program; Marketing or hosting clinics; Skills training sessions, etc.

Tackle Loaner Programs

Equipment loan program (often basic equipment) to the public or organizations.

Examples: State fish and wildlife agency sponsored tackle loaner programs for individuals or for agencies/organizations that provide fishing instruction and/or opportunities.

High School Fishing Tournaments

Organized high school fishing teams who compete in local or regional tournaments against other high school teams. Participants are typically highly engaged in fishing and compete for merchandise and scholarships.

Examples: Bass Federation High School Fishing Teams, as organized in Florida, South Carolina, Illinois and others

Electronic or Print Self-Learning Tools

Self-learning "how-to" information tools on angling. These may be electronic and print media, video, etc. Topics could include, fish ID and biology; maps; lure and bait selection; effective techniques; where-to-go; etc.

Examples: Oregon Department of Fish and Wildlife's self-learning tools; RBFF's self-learning tools; State fish and wildlife agency websites

Social Support Groups

Fishing-centric social groups, networks, clubs, or recurring meetings of fishing participants.

Examples: Iowa "Edible Outdoors" learning group; 4H fishing clubs

Youth Fishing Passport

A voluntary program where a license-like document is issued to youth prior the age they are legally required to purchase a fishing license. This program is primarily used to encourage children and their caregivers to select fishing as an activity of choice while concurrently obtaining participant contact information prior to them being entered into a license database system. Contact information may be

used to communicate with participant and encourage them to continue fishing, participate in passport facilitated fishing challenges, as well as track their long-term participation. Communications may include information fishing clinics, free fishing days, photo sharing opportunities, etc.

Examples: Connecticut Department of Energy and Environmental Protection's Youth Fishing Passport; Michigan Department of Natural Resources' voluntary youth fishing license (no longer available)

Free Fishing Day(s)

Specific days (often legislatively enacted) where fishing license requirements are exempt.

May or may not be coordinated with other fishing outreach efforts like National Fishing and Boating Week.

Examples: Nearly every state has free fishing day(s). In some states, like Connecticut, the "free fishing license day" program requires people to obtain a free license through the licensing system.

Increasing Access

Programs designed to improve fishing access. Often targeted in urban areas. Also includes fish habitat enhancement programs and improving access infrastructure.

Fishing Awareness Campaigns

Campaigns designed to increase the awareness, interest (and possibly early trials) of fishing and/or boating. These may or may not be tied to other fishing outreach efforts or campaigns.

Examples: National Fishing and Boating Week; National Hunting and Fishing Day; Take Me Fishing™ campaign; State-level implementations of national campaigns

Experiential Outdoor Expos/Outdoor Discovery Programs

Short-term skills and/or training classes that are part of a larger multi-day event. The multi-day event may include multiple skills and/or training classes as their primary focus, or be a smaller part of a largely commercial event where retail sales are the primary focus.

Examples: State fish and wildlife agency outdoor expos, such as in Arizona, Iowa and Nebraska

Train the Trainer Programs

Programs designed to train instructors to implement fishing R3 programs, events, or classes.

Examples: Iowa Department of Natural Resources' Fish Iowa! Train the Trainer Program; Nebraska Game and Parks Commission's Certified Youth Fishing Instructor Program; Connecticut Department of Energy and Environmental Protection's Certified Fishing Instructor Program; Boy Scouts of America's Certified Angling Instructor Program

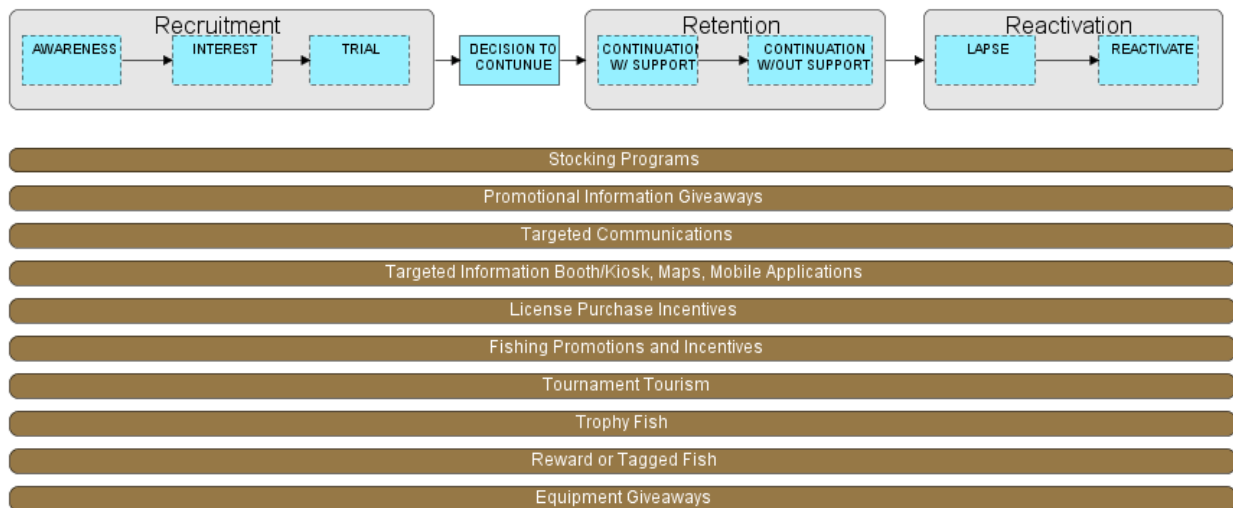
*Note: Aquatic Education efforts have not been included as an angler R3 effort-type. Though these programs sometimes address fishing as it relates to aquatic systems management, the ultimate objective of aquatic education is to increase knowledge, awareness, or appreciation of aquatic environments, not the recruitment of anglers.

Implementation-level Angler R3 Effort-types

It is important to note that the angler R3 effort-types illustrated in Figure 1 do not represent the complete list of R3 efforts defined by the working group. During the drafting of these R3 efforts, the working group noted that some R3 efforts were distinct strategies specifically designed to recruit, retain or reactivate anglers. Others, however, did not appear to be R3 strategies in and of themselves, but rather implementation tools that might be used for numerous types of R3 programs and events. Thus, depending on how these implementation tools are used, they can be incorporated as elements of many different R3 efforts that span all parts of the adoption pathway. The critical distinction is that these programs' scope of influence on the pathway to becoming an angler is dependent upon how well they are targeted. Thus, to be ultimately effective in recruiting, retaining or reactivating anglers, these implementation tools must be integrated as part of a larger R3 effort that has been designed to address the barriers to fishing that affect a particular audience.

Figure 2 illustrates these implementation-level angler R3 effort-types in their potential to impact all steps of the process of becoming an angler. In general, their effectiveness as part of an R3 effort depends upon how well they are targeted to address specific, identified barriers that adversely impact a target audience's ability or motivation to participate in fishing.

Figure 2. Implementation-level angler R3 effort-type mapped according to their potential impact and scope of influence within the Outdoor Recreation Adoption Model



Stocking Programs

Stocking fish to provide sustained or increased opportunities for anglers.

Examples: Stocking urban ponds as part of long-term fisheries management; Stocking accessible waters as part of short-term fishing event

Promotional Information Giveaways

Products or giveaways primarily intended to promote and increase awareness and interest in angling.

Examples: Merchandise printed with logos, pamphlets, etc.

Targeted Communications

Communication efforts that are designed and delivered to a specific group/population to increase fishing participation.

Examples: License renewal reminders, social media advertising, email campaigns, direct mailings, billboards, print advertisements, radio advertisements, electronic newsletters, weekly fishing reports, etc.

Targeted Information Booth/Kiosk, Maps, Mobile Applications

Long-term information resources developed for specific audiences to increase their fishing participation.

Examples: Booths and kiosks, electronic or printed maps, mobile applications, regulations, instructional videos, and other information resources.

License Purchase Incentives

Diverse fishing license structures to incentivize fishing license purchases.

Examples: Youth licenses, senior licenses, combination licenses, discounted lifetime licenses, multiple year licenses, group licenses, etc.

Fishing Promotions and Incentives

Promotions and contests used to increase angler motivation or participation.

Examples: Fishing photo contests, "big fish" contests, multi-species catch challenges, etc.

Tournament Tourism

Promotional events associated with fishing tournaments that are intended to increase angling motivation.

Examples: Connecticut Common Carp Tournament; Alabama Bass Trail; Toyota Texas Bass Classic; B.A.S.S. Tournament; FLW tournaments; Bowfishing tournaments

Trophy Fish

Programs designed to increase angler motivation by formally recognizing angler achievement.

Examples: Virginia Department of Game and Inland Fisheries' trophy fish recognition program; Florida Fish and Wildlife Conservation Commission's Trophy Catch program; State fish and wildlife agency "lunker" programs or "grand slams" for catching a suite of species

Reward or Tagged Fish

Programs that reward anglers for catching specific tagged or target fish.

Examples: Maryland Department of Natural Resources' "Diamond Jim" striped bass tagging program, Cabela's Fish for Millions, programs sponsored by local businesses to stimulate fishing in the area

Equipment Giveaways

Fishing equipment distributed as part of outreach or advertising activities aimed primarily at promoting and increasing interest and trial.

Examples: Rod and reel giveaways at fishing clinics, seminars, camps or other angler education activities. Many are conducted by partner organizations on a one-time basis.

Appendix C

Evaluation Framework for Angler R3 Efforts

While documenting the significant variety of angler R3 efforts currently being conducted in the U.S., the Angler R3 State Agency Working Group noted a general lack of evaluation to document ultimate R3 outcomes (i.e., the number of new anglers or increased fishing participation produced), as well as the absence of evaluation structures to gather participant and staff feedback to help angler R3 implementers improve their program over time.

In addition, the literature review found few examples of programs that had effective evaluation systems in place. Currently, the most commonly used evaluation tools only measure program *outputs*, i.e., the number of participants; fishing catch rates; age, gender and race of participants; and overall satisfaction. These metrics are useful to document, but do not address a program's ultimate effectiveness or *outcome*, i.e., how effective the program is in teaching angling skills and knowledge, or long-term behaviors (going fishing or purchasing a fishing license).

Evaluation systems for R3 efforts may seem complicated and difficult to design and deliver, but the evaluation tools needed to determine the ultimate impacts of an effort or highlight areas for improvement are very straightforward. This document presents a simple method that program staff can use to design and evaluate an R3 effort. It is not, however, an all-encompassing manual on evaluation. A much more thorough guide to program evaluation can be found in the Recreational Boating & Fishing Foundation's (RBFF) [Best Practices Guide to Program Evaluation for Aquatic Educators](#). Angler R3 effort planners and implementers are highly encouraged to review the RBFF Best Practices Evaluation Guide as it represents one of the most comprehensive and up-to-date collections of program evaluation information available.

Getting Started

The first step in designing an angler R3 effort is to identify and understand what the effort is trying to accomplish. For angler R3 efforts, that goal is fairly straightforward; the recruitment, retention or reactivation of anglers. More specifically, participant's future fishing behavior is the ultimate measure of effectiveness for an angler R3 effort, and one of the elements that distinguish R3 efforts from general aquatic education programs. Whereas outcomes of education programs can include awareness, knowledge retention, and appreciation, an angler R3 effort can be defined as such ONLY if it ultimately succeeds in recruiting, retaining or reactivating anglers. Additional information on program planning and development can be found in the RBFF [Best Practices Workbook for Boating, Fishing, and Aquatic Resources Stewardship Education](#).

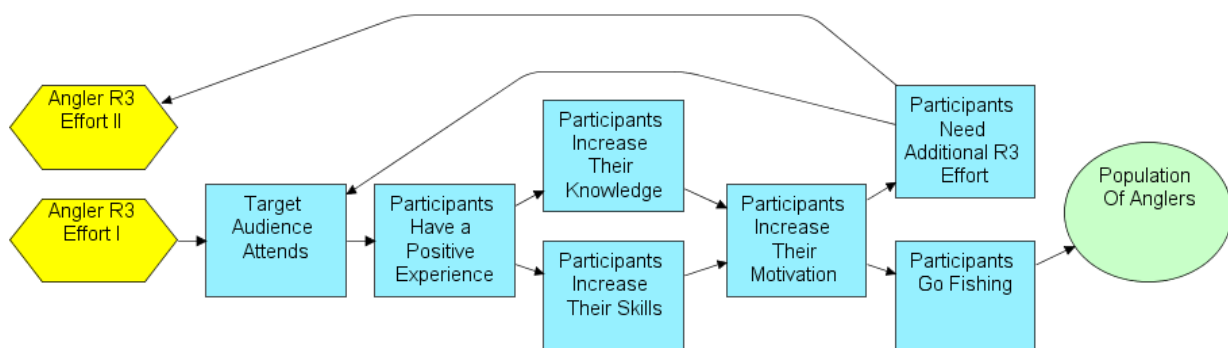
Unfortunately, an individual's future fishing behavior may be difficult or impractical to document with standard evaluation methods like surveys or questionnaires. Fortunately, due to the regulatory requirements of fishing participation, anglers can be tracked by an indicator; a

fishing license purchase. The purchase of a license (or license purchases over time) by individual participants (or a population of participants) can be used to indicate that an effort has been effective in recruiting, retaining or reactivating anglers, and license purchase databases should be designed with this individual tracking need in mind. It is important to note that some R3 efforts like advertising campaigns or fishing regulations simplification cannot be entirely measured by their impact on individuals. In these cases, R3 implementers should look for population-level impacts of their efforts, e.g., increases of new anglers within a region, increase of license purchase rates following an advertising campaign, decrease in churn rates, etc.

While measuring a participant’s behavior change via license purchases or surveys is needed to document the ultimate desired outcome of an angler R3 effort, it does very little to provide program implementers with information that can help them improve their effort over time. For that, a more thorough and thoughtful evaluation strategy is needed, such as a results chain.

Consider the example in Figure 1. Based on previous work done by the Wildlife Management Institute (WMI) on hunting and shooting sports R3 program evaluation, as well as insights from the Working Group, it seems that most angler R3 efforts follow a basic series of steps:

Figure 1. Basic angler R3 effort results chain.



These steps, or “results,” break down the generalized R3 effort in the above figure into a series of “if, then” statements that describe the expected results of each step in an R3 effort. In other words, each result (blue box) must occur before the subsequent result can be achieved. If one of the results is missing or poorly delivered, then the “results” that follow are far less likely to be achieved, and the ultimate outcome of recruiting, retaining or reactivating anglers will likely remain unrealized.

For the example presented in Figure 1, this angler R3 effort (yellow hexagon) was designed to recruit anglers. The logic of how it achieves that outcome is illustrated by the subsequent blue boxes, or expected results. The first step requires identifying a target audience and their unique barriers to fishing participation. Then, the effort should be specifically designed to address these barriers and incorporate the unique needs of the target audience. If the effort is designed without an understanding of the audience and their barriers to fishing, it may deliver an experience that is enjoyable, but one that does not address the audience’s needs.

If an audience in need of an angler R3 effort is targeted, and their barriers to fishing are understood and addressed by the effort, **then** the target audience will benefit from the effort. Note: identifying the target audience and understanding their barriers to participation are two of the most crucial steps to the effectiveness of an R3 effort.

If the right audience attends, **then** they can have a positive experience because the effort was designed with their specific needs and barriers to fishing in mind.

If the participants have a positive experience, **then** they can gain knowledge and skills.

If the participants gain more knowledge and skills, **then** their motivation (as well as confidence and interest) to go fishing will increase.

If their motivation to go fishing increases, **then** participants will likely be faced with two different paths forward. Either the R3 effort provided them with sufficient skills, knowledge and motivation to go fishing on their own, or it made them realize they need even more skills and knowledge (or additional tools like social support) before going fishing themselves.

If the effort succeeds in motivating most of its participants to go fishing independently, then it has achieved the ultimate outcome (green oval). If, however, most of the participants only express a desire to learn more fishing skills and knowledge, program implementers are faced with a choice of either re-designing the effort, or providing participants with next steps by directing them to another existing R3 effort or developing a second effort (e.g., the Angler R3 Effort II in Figure 1) that addresses their needs.

This basic results chain can serve as a starting point for angler R3 implementers to design, plan and evaluate many kinds of R3 efforts. Below are three examples of how this basic logic can be customized for recruitment, retention or reactivation-type angler R3 efforts.

Angler R3 Results Chain Examples

Recruitment-Type Angling Effort

Example: Basic Angling Skills Training with Fishing

Definition: An event or class that includes only basic angler education (e.g. casting, fish ID, regulations, basic tackle, knots, fish cleaning, cooking, aquatic education, fisheries management, etc.) with on-the-water fishing experience. The target of the training could be youth, urban residents, ethnic groups, families, etc. Partners may include: schools, parks, church groups, day-camps, youth organizations, conservation/service organizations, etc.

As with any R3 effort, a need for a recruitment effort should be identified BEFORE an effort is developed. More specifically, for this example, a need for skills training and a first fishing trial experience should be identified as a barrier in a particular target audience BEFORE the effort is developed.

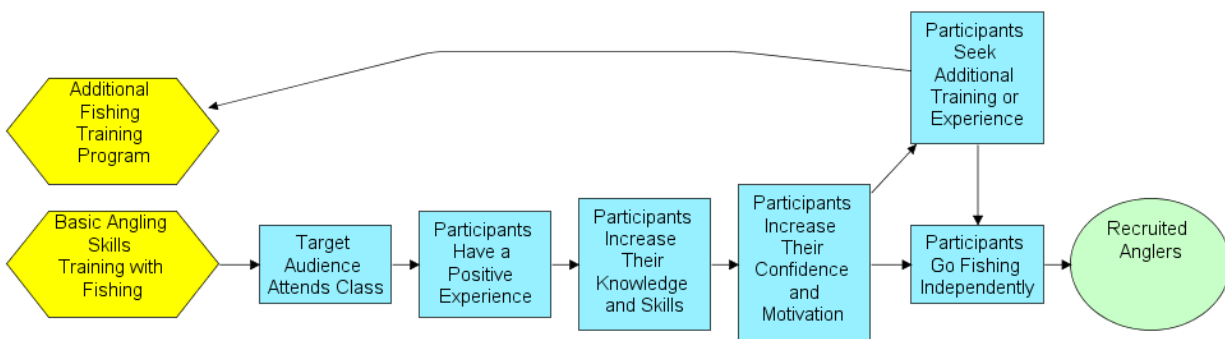
In general, R3 planners should identify the type and content of a recruitment effort needed using the following steps:

1. Confirm that more anglers are needed or desired. This can be assessed using license purchasing data, a review of the demographics and ages of current anglers, or other existing data or needs assessments.
2. Identify and select a specific target audience(s) in need of, and receptive to, a recruitment effort.
3. Using existing data, surveys, focus groups, or other reliable human dimensions research, conduct an initial assessment of the target audience’s barriers to fishing and what may motivate them to try fishing.
4. Based on identified barriers and motivations, determine the most appropriate recruitment effort for the target audience (class, self-learning tool, targeted communication, etc.), and design it to address the audience’s specific barriers and increase their motivation to go fishing.
5. Use a results chain to plan the effort and set up a framework to measure the recruitment of the target audience (i.e., their future fishing participation) and the effectiveness of the effort in addressing the audience’s barriers to fishing.

For the purposes of this example, we will assume that steps one through four above were completed and revealed that a basic angling skills training with fishing class is the best way to meet the initial needs of the target audience. (Note that this is a simplified example; it is likely that a needs assessment may reveal that MULTIPLE efforts over time are needed to address the audience’s barriers to fishing.)

A results chain for this effort could be customized from the basic results chain in Figure 1 as in the below:

Figure 2: Results chain for a basic angling skills training with fishing class.



The results, or “if, then” statements in this results chain are very similar to those in Figure 1. The primary difference is that these were drafted to be slightly more specific in what it is assumed the audience needs to experience in order to become anglers. Thus, each result is a hypothesis of sorts that can be measured. If each result is assessed for its impact on

participants, class implementers will have the information needed to determine which elements of the class are effective, which need to be improved or omitted, and ultimately, which elements of the class are most critical to creating new anglers.

In order to understand which elements of the class are effective and which may need improvement, one or more objectives must be developed to assess each result. These objectives must be time-sensitive, contain a metric that can be validated, be specific to the audience, and be stated as simply as possible. For the results chain in Figure 2, the following are examples of how objectives could be written to measure each result:

Result: Target Audience Attends Class

Objective: X% of the participants who attend the class represent the target audience.

Result: Participants Have a Positive Experience

Objective: At the end of the class, at least X% of participants indicate that they had a positive experience.

Result: Participants Increase Their Knowledge and Skills

Objective 1: At the end of the class, at least X% of participants indicate that their fishing skills increased.

Objective 2: At the end of the class, at least X% of participants indicate that their fishing knowledge increased.

Result: Participants Increase Their Confidence and Motivation

Objective 1: At the end of the class, at least X% of participants indicate that the skills and knowledge they gained at the class sufficiently prepared them to go fishing on their own.

Objective 2: At the end of the class, X% of participants indicate they have a greater interest in going fishing. Note: "Interest" is used here as an indicator of "motivation."

Result: Participants Go Fishing Independently

Objective 1: After attending the class, at least X% of the target audience indicate that they went fishing independently.

Result: Participants Seek Additional Training or Experience

Objective: At the end of the class, X% of the participants indicate that they need additional skills, knowledge or experience before they will go fishing independently.

Using the above objectives, class implementers can draft simple participant surveys that include questions necessary to assess how well each objective was met. Note that, depending on the objectives, a pre- and post-class survey may be necessary. Or, as in the case of the "Participants Go Fishing Independently" objective, a survey is not necessary if the participant's license purchases can be documented by the state fish and wildlife agency license sales database. It is recommended that class administrators develop surveys with the assistance of a human

dimension specialist in order to develop questions that can collect accurate and un-biased participant opinions and experiences.

Using the above combination of pre-class planning, results chain development, and measurable objectives, implementers can create an evaluation system that will allow them to assess the degree to which their class is having the desired impact on its participants or ultimate outcome, as well as identify specifically where their class is in need of improvement.

Retention-Type Angling Effort

Example: Electronic Self-Learning Tools

Definition: Self-learning, "how-to" information tools on angling. These may be electronic and print media, video, etc. Topics could include: fish ID and biology; maps; lure and bait selection; effective techniques; where-to-go; etc.

In this example, as above, a need to retain anglers should be identified BEFORE the effort is developed, and an assessment of the resources, tools or support they need to continue fishing should be completed.

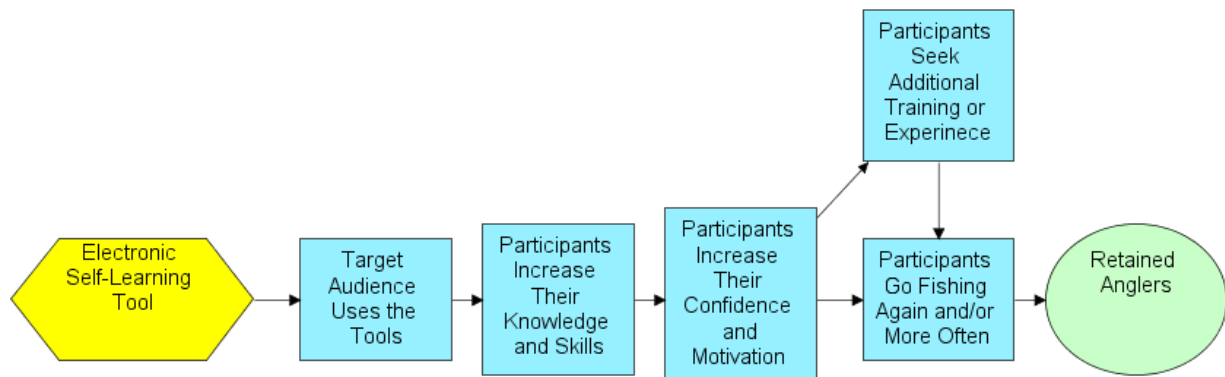
In general, implementers should identify the type and content of a retention effort needed using the following steps:

1. Use fishing license databases, focus groups, surveys and other methods to identify first-time license buyers and assess information resources they need in order to continue angling.
2. Based on the assessment of the target audience's information needs (where to fish, how to clean a fish, which tackle to use, how to tie knots, etc.), identify self-learning tools best suited to provide that information (videos, emails, mobile apps, websites, etc.).
3. Design the tool(s) to specifically address the target audience's information needs and preferred delivery method(s).
4. Promote the tools to the target audience using their preferred communication medium.

For the purposes of this example, we will assume that steps one through three above have been completed, and the results indicated that the best way to meet the target audience's needs are through a web-based self-learning tool that provides local information on where to go fishing for different species, what kind of bait and tackle to use, how to handle caught fish, and how to clean and cook fish.

A results chain for this effort could be customized from the basic results chain (Figure 1) as in the below:

Figure 3: Results chain for an electronic self-learning tool.



When compared with Figure 1, the above results chain is very similar but somewhat simplified in that skills and knowledge are combined into one result, as are confidence and motivation. This is a perfectly acceptable modification of the core results chain. As long as the results (skills and knowledge; confidence and motivation) are measured, effort-specific customization is encouraged if it provides clarity and utility to implementers.

As with all other R3 efforts, objectives should be developed for each result in the results chain. These objectives must be time-sensitive, contain a metric that can be validated, be specific to the audience, and be stated as simply as possible. For the above results chain, examples of how measurable objectives could be written are as follows:

Result: Target Audience Uses the Tools

Objective: X% (or X number) of the users represents the target audience.

Note: Publicly available web content cannot be driven to only one specific audience. However, the target audience must be among those accessing and using the web-based tools and be in sufficient numbers to validate the success of the tools' development.

Result: Participants Increase Their Knowledge and Skills

Objective 1: After using the tools, at least X% (or X number) of the target audience indicate that their fishing skills increased.

Objective 2: After using the tools, at least X% (or X number) of the target audience indicate that their fishing knowledge increased.

Result: Participants Increase Their Confidence and Motivation

Objective 1: After using the tools, at least X% (or X number) of the target audience indicate that they have greater confidence in their fishing-related skills.

Objective 2: After using the tools, at least X% (or X number) of the target audience indicate that they have greater motivation to go fishing.

Result: Participants Go Fishing Again and/or More Often

Objective 1: After using the tools, at least X% (or X number) of the target audience indicate that they increased their fishing activity as a result of using the tools.

Result: Participants Seek Additional Training or Experience

Though not required to measure the effectiveness of this effort, this result recognizes that there will likely be individuals who want or need additional resources or training beyond the scope of this tool(s). These individuals should be directed to other self-learning tools or R3 efforts that address their learning needs. An embedded “Want to learn more?” questionnaire could be used to collect their contact information and identify their needed resources.

Measuring the above results could require a combination of website analytics, embedded surveys (with response incentives), sample target audience surveys, and fishing license sales database queries. It would be unrealistic to attempt surveying all users, but the above objectives must be measured in a significant sample of the target audience in order to improve and justify the tool(s) over time.

Reactivation-Type Angling Effort

Example: Lapsed Angler Communications

Definition: Marketing toolkit for targeting anglers who have lapsed in license purchase. Communications may include direct mail or email. Messages may include license renewal reminders, as well as educational informational resources, etc.

In this example, as above, a need to reactivate lapsed anglers should be identified BEFORE the effort is developed, and the reasons why anglers of various demographics are lapsing should be assessed.

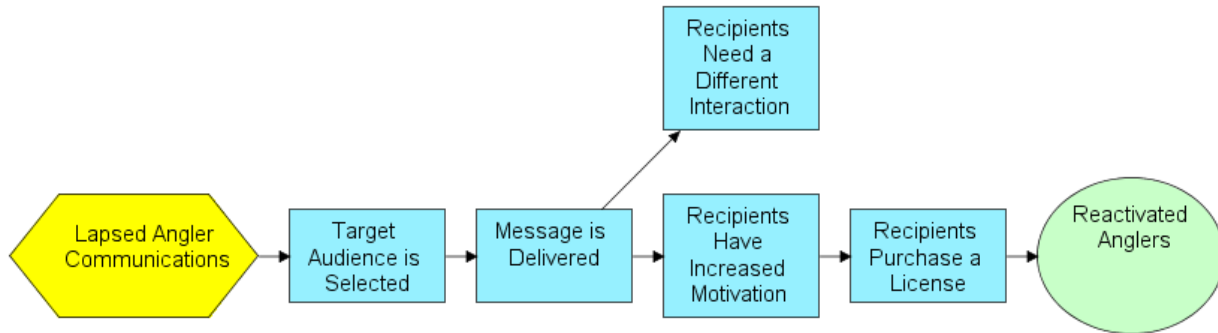
In general, R3 implementers should identify the type and content of a reactivation effort needed using the following steps:

1. Utilize fishing license databases to identify which demographics of anglers are lapsing and at what frequency (e.g. every other year, three times in a five-year period, etc.).
2. Using focus groups, surveys, available demographic information and other existing data, complete an initial assessment of the target audiences’ barriers to license renewals.
3. Based on the assessment of barriers to license renewal, identify what communications tools are needed to address those barriers (renewal reminders, access to current information, information about classes, events, etc.).
4. Develop the content (i.e. the specific messages designed with the assistance of marketing expertise) and delivery mechanism of those tools based on the target audience's barriers to license renewals and communication medium.

For the purposes of this example, we will assume that steps one through four above were completed and revealed that email license renewal reminders with targeted messages and information resources will serve as the best tool to reactivate the lapsed anglers selected as the target audience.

A results chain for this effort could be customized from the basic results chain in Figure 1 as in the below:

Figure 4: Results chain for a lapsed angler email communications effort.



R3 communications efforts can be simple in their design and execution, but their effectiveness is highly dependent on how well they have been designed to target specific barriers and increase target audience motivations. It is important to remember that although this effort targets a license purchase as the outcome, the license purchase itself is only an indicator of the ultimate desired outcome of the effort; the reactivation of anglers.

As with all other R3 efforts, objectives should be developed for each result that are time-sensitive, contain a metric that can be validated, are specific to the audience, and are stated as simply as possible. For the above results chain, examples of how measurable objectives could be written are as follows:

Result: Target Audience is Selected

Objective: 100% of the target recipients have failed to renew their fishing licenses within the past X years.

Result: Message is Delivered

Objective: X% of recipients receive and open the message within X timeframe of sending the message.

Result: Recipients Have Increased Motivation

Objective: After receiving the message, X% of participants indicate they have a greater motivation to purchase a license and go fishing.

Result: Recipients Purchase a License

Objective: After receiving the message, at least X participants renew their fishing license within X timeframe.

Result: Recipients Need a Different Interaction

A sample of those who receive the message, but do not purchase a license, could be surveyed or questioned about why they did not renew. This type of formative evaluation is valuable to implementers as it provides actionable information that can help design better messages or select more receptive audiences.

Aside from an initial assessment of target audience barriers and motivations, the majority of the above objectives can be measured with email analytics and license sales databases.

In Summary

The information included in this evaluation guide outlines a simple framework for angler R3 implementers to prove and improve their R3 efforts over time, while identifying which elements of their efforts are most effective in creating new anglers or increasing angler participation.

The above examples of angler R3 results chains should be viewed as an evaluation plan for a program or effort, but not comprehensive evaluation strategies for organizations vested in angler R3. The RBFF [*Best Practices Guide to Program Evaluation for Aquatic Educators*](#) provides much more detailed information that can help guide R3 implementers in the design and evaluation of angler R3 programs. Additionally, the R3 efforts included as examples under each R3 category (recruitment, retention and reactivation) listed in this document should not be viewed as the only or best type of effort for that particular R3 category. There are many effort types that can fit within recruitment, retention or reactivation. Organization-level R3 strategies should target the breadth of needs that must be addressed for each stage of the participant's pathway to becoming or remaining an angler, and incorporate a variety of resources or "touchpoints" that address the barriers that are impacting participation in fishing.