Massachusetts Recreational Bluefin Tuna Landings Census Pilot - Phase I: Design and Testing

FY 2011 Proposal

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1. Overview

1.1. Sponsor

1.2. Focus Group

Survey Design and Evaluation

1.3. Background

Bluefin tuna support a socially and economically important recreational fishery along the U.S. Atlantic coast from North Carolina through Maine. The NOAA Fisheries Atlantic Highly Migratory Species Management Division manages bluefin tuna and other HMS (i.e., other tunas, sharks, swordfish and billfish) domestically. Internationally, Atlantic bluefin tuna are managed by the International Commission for the Conservation of Atlantic Tunas or ICCAT. ICCAT sets annual bluefin tuna landings quotas for the U.S. and other member nations, and NOAA Fisheries divides that quota into sectors and size class allowances. In recent years the recreational sector has exceeded their quotas on several occasions, resulting in highly restrictive regulatory controls in subsequent years. Such controls have been criticized by segments of the recreational fishing industry, particularly charter boat captains, who request more stable or predictable regulations for their businesses to succeed. Bluefin tuna recreational landings numbers are currently estimated from the NOAA Fisheries Large Pelagics Survey (LPS). The LPS is specifically designed to collect information on recreational fishing directed at large pelagic species including tunas, billfishes, swordfish, and sharks. Using this specialized survey design allows for higher levels of sampling large pelagic trips, which ultimately improves precision on estimates of catch and effort for highly migratory species. The LPS has been conducted by NOAA Fisheries since 1992 from Maine through Virginia from June through October. This spatial and temporal coverage encompasses the majority of U.S. recreational fisheries for bluefin tuna. The issue of bluefin tuna recreational monitoring was discussed at length during the HMS Advisory Panel Fall 2010 meeting in Silver Spring, Maryland. The discussion focused on the need for more timely recreational data for in-season monitoring, rather than on the accuracy or precision of LPS estimates The Advisory Panel strongly recommended that NOAA Fisheries implement census-based programs for bluefin tuna that will provide management with “real-time” (or as near real-time as possible) accurate landings updates for managing the recreational quota. NOAA Fisheries currently has a rule that requires mandatory reporting of all recreationally landed Atlantic bluefin tuna. This mandatory reporting requirement is fulfilled either by phone or web tool in all states except Maryland and North Carolina, where catch card programs exist. Known as ALRS (Automated Landings Reporting System), this census-based recreational landings program was intended to be an important component for management of bluefin tuna. However, ALRS compliance rates are thought to be extremely low (i.e., as low as 10-20% compliance) based on matching with observed bluefin tuna from the LPS and comparisons with LPS expanded estimates. Given the identified shortcomings of the ALRS, NOAA Fisheries has been exploring options for implementing more reliable and accurate recreational bluefin tuna census-based programs in other states to better meet management needs. Independent Validation of Census-based EstimatesCatch card and other census-based programs can be designed to provide more timely landings updates compared to most surveys. However, because compliance is never 100% the numbers produced are typically considered minimum estimates. Without some form of independent validation the compliance rate, and therefore accuracy, of such programs remains unknown.Although compliance rates associated with the state-run HMS Catch Card programs are considered better than ALRS rates, independent validation of these programs has never been conducted. As mentioned above, Maryland Catch Card compliance rates have been estimated by attempting to match bluefin intercepted in the dockside LPS with fish in the catch card database. However, compliance rates calculated using this method may be biased if participation in the dockside LPS and filling out a catch card are not entirely independent events. Respondents who are intercepted by LPS interviewers are more likely to fill out a catch card because the interviewer may remind/encourage them to do so. This would have the effect of artificially inflating the compliance rate (or deflating the non-compliance rate). Compliance rates may also be greater for anglers/captains who are intercepted by LPIS interviewers because they may (incorrectly) associate participation in the survey with some enforcement mechanism or higher probability of being caught without landings tags. While Maryland bluefin tuna Catch Card estimates track well with LPS estimates they are also consistently lower (between 19%-42%) for 8 out of the last 9 years (Figure 1). Only in 2010 was the Catch Card estimate slightly higher than the LPS estimate. In the absence of an independent validation survey, the gap between LPS Maryland bluefin landings estimates and Catch Card numbers cannot be sufficiently explained or adjusted for. As a result, LPS estimates are still used as the official Maryland bluefin tuna landings numbers for domestic quota monitoring and reporting internationally to ICCAT. Precision on annual LPS recreational bluefin tuna landings estimates for the Maryland/Delaware geographic strata are reasonably good (i.e., PSE’s range from 8.7% to 14.8% from 2002-2010). Results from the LPS telephone survey component indicate that nearly one-third of Maryland trips targeting bluefin tuna return to private access sites. One would expect compliance with the Catch Card program to be lower for such trips since anglers may be less inclined to go out of their way and stop at a reporting station before returning to a private dock. Since the dockside LPS does not cover private access sites, compliance based on matching fish may be overestimated as a result. Ideally, validation of the accuracy (or completeness) of Catch Card program landings estimates would include validation of bluefin tuna landings at both public and private access sites, including personal docks.

1.4. Project Description

Geographic distribution of bluefin tuna landings typically can vary greatly from year to year due to changes in fish availability, migratory patterns, fishing effort, and management regulations. In recent years the recreational bluefin tuna fishery has

experienced a noted geographic shift from South to North. In particular, the contribution of the Massachusetts fishery to the total recreational landings increased markedly starting around 2006 (Figure 2). Since that time Massachusetts has accounted for between 22%-55% of the recreational bluefin tuna landings from Virginia through Maine. The Massachusetts recreational bluefin tuna fishery is far more geographically dispersed throughout the state compared to Maryland's fishery. The LPS intercept survey component has intercepted landed recreational bluefin tuna at 30 different access points widely distributed throughout Massachusetts (e.g., Cape Cod, the Islands, Cape Ann, Plymouth region). By contrast, the Maryland fishery is geographically concentrated within a 10 mile radius in the greater Ocean City area. From 2006-2010 the LPS telephone survey component recorded 67 different Massachusetts public access sites used on trips targeting bluefin tuna, compared to only 10 Maryland sites. North Carolina's recreational bluefin fishery is more geographically dispersed than Maryland's. Twenty-five bluefin tuna Catch Card reporting stations have been established over a widely dispersed geographic area along the coast. Therefore, in terms of geographic distribution of landings, the Massachusetts fishery is more akin to North Carolina than to Maryland. However, in terms of numbers of fish landed, the North Carolina recreational fishery is small compared to Massachusetts. The largest number landed in a single year since the North Carolina Catch Card program began was 590 bluefin and the average per year (1999-2010) was only 212 fish. By comparison, LPS estimated bluefin landings for Massachusetts have been considerably higher, particularly in recent years (Figure 2). Differences in landings are too large to be explained by variances associated with LPS estimates or by non-compliance with the North Carolina Catch Card program. Although a compliance rate has never been estimated for the NC Catch Card program, the NC Division of Marine Fisheries believes that most landed bluefin are being reported either through reporting stations or the state's large team of dockside interviewers who effectively serve as "roving" reporting stations. The Massachusetts recreational bluefin tuna fishery also differs from Maryland and North Carolina's fisheries in terms of distance traveled to the fishing grounds. From 2006-2010 about one-fourth (26%) of Massachusetts recreational bluefin tuna targeted trips intercepted by the LPS fished within 6 miles from shore and nearly one-half fished within 10 miles. By comparison only 2% of Maryland's recreational bluefin targeted trips traveled less than 20 miles from shore and one-half fished beyond 35 miles from shore. Although miles from shore data are not available for North Carolina, anecdotally the bluefin tuna fishery is known to occur farther offshore compared to Massachusetts. The relatively near-shore availability of bluefin tuna in Massachusetts makes this fishery more accessible to smaller boats. In terms of access sites this means a greater potential for bluefin to be landed at smaller sites, including more boats ramps and small docks. As discussed above, private access trips could result in under-reporting of bluefin tuna landings to established reporting stations with the Catch Card programs. Survey results suggest that private access bluefin tuna landings may be more prevalent in Massachusetts than Maryland. In Massachusetts 41% of trips landing recreational bluefin tuna reported returning to a private access site, compared to 24% in Maryland (Source: LPS telephone survey component 2003-2009 data pooled). A successful bluefin census program in Massachusetts will need to differ from the existing Maryland or North Carolina Catch Card models due primarily to differences in the number, distribution, and type of access sites where bluefin are landed recreationally. The sheer volume of the Massachusetts fishery, in combination with the geographic dispersion of landings, will make it more difficult to attempt a complete census of landings through establishment of dockside catch card reporting stations. Whereas, in Maryland Catch Card reporting stations have been established at nine marinas that account for the large majority of recreational bluefin tuna landings, reporting options for a census-based program in Massachusetts would need to accommodate vessels returning to a much larger number of dispersed sites including many boat ramps and smaller docks that accommodate a growing small boat bluefin tuna fishery, as well as a significant private access component.

1.5. Public Description

1.6. Objectives

The primary objective of this project is to design and test a new census-based data collection program with independent validation for the Massachusetts recreational bluefin tuna fishery. An accurate census-based landings program in Massachusetts could be an extremely valuable tool for managing the recreational bluefin tuna quota given the state's recent contribution to the coast-wide landings and anticipated continued growth of this fishery. An independent validation component would allow for a presumably unbiased estimate of compliance and provide a landings correction factor. NOAA Fisheries has engaged the Massachusetts Division of Marine Fisheries on this issue and the state agency has expressed strong interest in partnering on the project.

1.7. References

2. Methodology

2.1. Methodology

This proposal addresses Phase I of the project which includes the tasks below for designing and testing a census-based recreational bluefin tuna landings data collection program in Massachusetts. If Phase I is successful, a proposal for Phase II will be submitted for full implementation of the pilot data collection program. • Explore technological solutions for reporting landings that encourage compliance, are relatively universal, intuitive and easy to use, and enforceable. • Generate design ideas and receive feedback on proposed data collection methods through:o Focus groups with bluefin tuna anglers and captains in Massachusetts. o Meetings with HMS fishing industry leaders, fishing clubs and HMS Advisory Panel members.o Meetings with state and federal fisheries enforcement agents.o Collaborating with IT consultants and other experts on innovative solutions.• Select one or more data collection approaches for beta testing.• Hire contractors to develop data reporting system.• Design a

survey for independent validation of the census-based program survey to assess reporting rates and accuracy of landings. • Conduct initial testing (limited in geographic and temporal scope) of the data collection system(s) and validation mechanism.

2.2. Region
North Atlantic

2.3. Geographic Coverage
Massachusetts

2.4. Temporal Coverage
June through October

2.5. Frequency

2.6. Unit of Analysis

2.7. Collection Mode
Mode(s) to be determined

3. Communication

3.1. Internal Communication
- Project kick-off meeting August/September 2011- Project team conference calls (monthly or more frequently as needed)- Information shared through emails

3.2. External Communication
- Monthly reports to OT- Detailed final report to OT- Engage constituents in design of new data collection pilot through focus groups, attending and presenting at fishing organization and club meetings, informal outreach, and other opportunities- Once a design has been selected for testing launch an educational outreach campaign targeted at Massachusetts HMS recreational permit holders.

4. Assumptions/Constraints

4.1. New Data Collection
Y

4.2. Is funding needed for this project?

4.3. Funding Vehicle

4.4. Data Resources

4.5. Other Resources
Due to the late availability of funds, NOAA Acquisitions and Grants Office (AGO) deadlines for new procurements in FY2011, and AGO's workload in general it is not likely that the project team will be able to hire a contractor for the data collection and validation testing component.Even if a contractor can be hired in FY2011, the general late start of this project means that the testing phase would not get underway until October at the earliest when the bluefin recreational fishery is typically winding down in Massachusetts. Given these constraints the project team has decided to postpone the testing phase until 2012 and use 2011 only to design the data collection program and validation component. This assumes that MRIP FY2012 funds will be available to support testing next season.

4.6. Regulations
OMB Paperwork Reduction Act (PRA) approval to conduct limited testing of the data collection program and validation survey is either already covered by (or can be obtained through modification of) an existing PRA.

4.7. Other
This pilot project will be a collaborative effort between NOAA Fisheries and the Massachusetts Division of Marine Fisheries.

5. Final Deliverables

5.1. Additional Reports

Report that evaluates the success of the new data collection program

5.2. New Data Set(s)

5.3. New System(s)

6. Project Leadership

6.1. Project Leader and Members

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7. Project Estimates

7.1. Project Schedule

Task #	Schedule Description	Prerequisite	Schedule Start Date	Schedule Finish Date	Milestone
5	Educational outreach campaign to spread word about 2012 pilot program	4	04/02/2012	06/15/2012	

Task #	Schedule Description	Prerequisite	Schedule Start Date	Schedule Finish Date	Milestone
3	Plan and hold focus groups and conduct outreach to get desing input.	2	09/17/2011	10/10/2011	
7	Complete first draft of project report.	6	11/01/2012	12/03/2012	Y
6	Test data collection system and validation mechanism.	4	06/01/2012	10/31/2012	
8	Finalize report and submit to MRIP Operations Team.	7	12/03/2012	01/03/2013	Y
4	Develop data collection design document and independent validation survey approach.	3	10/10/2011	10/31/2011	
1	Plan and hold project kick-off meeting.		08/31/2011	08/31/2011	
2	Hire consultants to assist with focus groups and outreach efforts	1	09/15/2011	09/15/2011	

7.2. Cost Estimates

Cost Name	Cost Description	Cost Amount	Date Needed
Contractual Services	Test methods and validation survey	$20000.00	08/01/2011
Project-specific travel	Meetings with fishing industry representatives and fishing clubs	$2000.00	05/15/2011
Consultants	IT experts and focus group facilitator	$18000.00	03/15/2011
Project-specific travel	Project kick-off meeting	$2000.00	04/01/2011
Project-specific travel	Travel costs for conducting focus groups	$2000.00	05/15/2011
TOTAL COST		$44000.00	

8. Risk

8.1. Project Risk

Risk Description	Risk Impact	Risk Probability	Risk Mitigation Approach
Due to the late start of this project we will not be able	Significant if funds are not available in 2012 to test	Medium	MRIP could find ways to obligate the FY11 $20,000

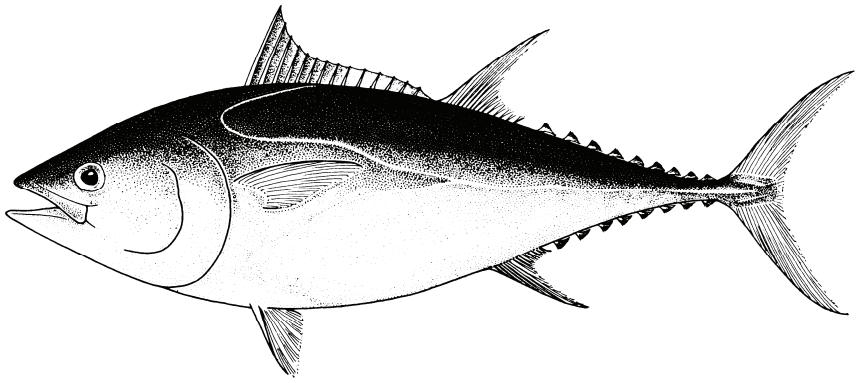
Risk Description	Risk Impact	Risk Probability	Risk Mitigation Approach
to test the data collection pilot until 2012 bluefin season which starts around June. The OT approved $20,000 for contractual services in FY11 but we may not be able to put this on a contract given deadlines imposed by the contracts office. If the FY11 funds cannot be obligated we will need new funds in 2012 to hire a contractor for the data collection phase.	the design.		to another contract vehicle or to a grant and then pay that money back to the project in 2012.

9. Supporting Documents

"Final Report", page 1

Massachusetts Recreational Bluefin Tuna Landings Census Pilot

Final Report



July 2013

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Massachusetts Recreational Bluefin Tuna Landings Census Pilot – Final Report

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EXECUTIVE SUMMARY

Atlantic Bluefin Tuna (BFT) are a highly valued target species in both recreational and commercial fisheries along the U.S. Atlantic coast. The International Commission for the Conservation of Atlantic Tunas (ICCAT) sets annual BFT landings quotas for the U.S. and other member nations, and NOAA Fisheries allocates the U.S. quota into commercial and recreational sectors. Under the current management plan, about 20% of the U.S. quota is allocated to the recreational sector. Monitoring the recreational quota can be particularly challenging due to the rare event, pulse-like, and often unpredictable nature of BFT landings. The Large Pelagics Survey (LPS) is the primary data source for monitoring the BFT recreational quota. In addition to the LPS, there is a mandatory requirement that all landed recreational Atlantic BFT be reported to NOAA Fisheries. This mandatory reporting requirement is fulfilled either by phone or Internet through the Automated Landings Reporting System (ALRS) in all states except Maryland and North Carolina where catch card programs exist. Compared to the LPS, these census-based mandatory programs have the advantage of producing timelier in-season landings updates, which can provide managers with a "finger on the pulse" of the fishery. However, if compliance with the reporting requirement is poor the utility of the data for management purposes is significantly compromised. This is the case with the ALRS where compliance rates are estimated to be around 10-20%. Compliance with the HMS catch card programs is considered to be significantly better, which has allowed for greater use of these data by fishery managers. When used in combination, surveys approaches and census-based approaches can often complement each other and generate better data for fishery management and stock assessment.

An accurate and timely census-based landings program in Massachusetts could serve as an extremely valuable tool for managing the recreational BFT quota given the state's recent contribution to the coast-wide landings. From 2007-2012 combined, Massachusetts accounted for over 40% of the U.S. recreational Atlantic BFT landings. The goal of this project was to design and pilot test a new census-based data collection program for the Massachusetts recreational BFT fishery aimed at improving compliance with the current system. Specific project objectives included: 1) Improve our understanding of anglers and captains perceptions of the ALRS, including reasons for not reporting fish, 2) Fully involve the fishing industry and state fisheries agency representatives in the design and implementation of the pilot program, and 3) Increase awareness among HMS permit holders of the pilot project and of the general importance of reporting recreationally landed BFT.

An Email survey was sent to Massachusetts HMS permit holders to collect information regarding recreational BFT reporting histories, preferences, capabilities, and constraints. Project team members gave presentations and provided handouts at several events where BFT captains and anglers were present to both spread the word about the pilot study and get feedback on the proposed data collection design. For program recognition the project team agreed on the following pilot study program name and acronym: Recreational Bluefin Landings Tag pilot program or RBLT.

A subsample (416 or about 10%) of all Massachusetts HMS Angling and Charter/headboat category permit holders were recruited by phone to participate in the pilot. The relatively low refusal rate (13%) for RBLT participation indicated a general willingness to help improve the existing data collection program, and supported the notion that participants were fairly representative of the fishery as a whole. RBLT participants were not exempt from their usual mandatory reporting requirements under the ALRS program. Although participation in the pilot study was considered voluntary, enforceability was identified as an important feature for possible future implementation.

Under the RBLT design, all recreationally landed BFT should be tagged at sea when the fish is boated. BFT landings tags were mailed to participants at the start of the fishing season: Angling 5 tags, Charter/headboat 10 tags. Additional tags could be obtained from one of 19 designated RBLT tag stations throughout Massachusetts. Pilot participants reported BFT by phone or Internet through a modified version of the ALRS questionnaire that allowed for reporting of a BFT landings tag number. Participants were asked to return any unused tags at the end of the season by mail or to an RBLT tag station. An attempt was made to track and account for the disposition of all tags distributed to pilot study participants. Participants were contacted by Email, mail, and phone during the implementation phase to further encourage both reporting fish and returning unused tags. Post-season follow-up phone calls also served to track the disposition of unaccounted for tags, validate reported landings, obtain information about unreported landings, and obtain feedback on the RBLT pilot design.

Accounting for all RBLT tags distributed proved to be more difficult than anticipated, even for the relatively small sub-sample of Massachusetts permit holders participating in the pilot program. Two weeks after the follow-up mail reminder, which included a postage-paid tag return envelope, 72% of RBLT participants still had unaccounted for tags. Although the follow-up phone calls proved to be somewhat effective, by the end of the study nearly one-third of participants still had not returned their unused tags. If implemented state-wide with several thousand HMS permit holders, tracking and accounting for all tags distributed will be administratively costly and time consuming.

Results suggest that the overall project goal of improving compliance with the current reporting system for recreational BFT landings was achieved. RBLT participants had higher reporting rates (i.e., BFT reported per permit holder) than non-RBLT permit holders in both the Angling and Charter/headboat categories. Interestingly, when considering only permit holders who reported at least one BFT (i.e., exclude zero's), RBLT participant reporting rates were actually lower than non- RBLT. Thus, the main driver in the overall reporting rate difference was that a higher percent of RBLT participants reported at least once compared to non-RBLT. Results also suggest that the RBLT pilot may have even reduced non-compliance rates for some presumably chronic non-compliant permit holders who had been in the fishery many years without ever reporting a BFT to the ALRS prior to 2012. Although considered voluntary for purposes of the pilot, if the RBLT is fully implemented as a mandatory program, the increased enforceability of the landings tag requirement will likely further improve compliance beyond what was found in the pilot study. The positive impact of the pilot on compliance rates was also supported by directly matching individual fish from the LPS dockside sampling programs to the ALRS database. LPS sampled BFT from RBLT participants matched at a much higher rate than non-participant BFT.

In addition to matching individual fish, comparisons were made between an extrapolated RBLT estimate and an adjusted LPS estimate for recreational BFT landed in Massachusetts. Although the RBLT expanded BFT estimate (1,052 fish) was somewhat lower (54%) than the adjusted LPS estimate (2,283), it was still considerably larger (43%) compared to the ALRS count (595). The gap between RBLT expanded and LPS adjusted estimates was primarily due to the Angling category or LPS private boat mode. This could have been partially due to the fact that pilot program outreach was more directed at charter boat captains than private boat anglers.

Reasons given in the Email survey for not reporting a recreationally landed BFT in the past varied by HMS permit category. The most common reason given by Angling permit holders was that they did not know that reporting was required, while the most common reason by Charter/headboat permit holders was that they forgot to report. The project objective of increasing awareness of both the reporting

requirement and of the importance of reporting likely had a positive effect on compliance rates. To reduce noncompliance due to "forgetfulness", anglers and captains should be strongly encouraged to report their fish as soon as possible - either at sea or when they return to the dock. One of the purposes of the landings tag in the RBLT pilot was to serve as a visual reminder to anglers and captains that every landed BFT must be reported. The addition of mobile reporting options such as Smartphone "apps" and a mobile Website may also help reduce the time elapsed between the catch event and reporting. Survey results suggest that the majority of HMS permit holders are already capable of electronically reporting at the dock prior to removing their fish from the vessel, and this proportion is anticipated to increase over time.

The project team recommends that the RBLT program be further pilot tested in Massachusetts with the proposed design modifications as indicated below:

Mandatory Reporting Requirement

- Reporting of landed recreational BFT should be mandatory and replace the current mandatory ALRS in Massachusetts.
- NOAA Fisheries should review the current regulations regarding mandatory reporting of recreationally BFT to assure that the RBLT program is covered under the existing law.
- To encourage compliance, NOAA Fisheries and the Commonwealth of Massachusetts should work together under the existing Joint Enforcement Agreement to increase enforcement presence at locations where recreational BFT are landed.
- Massachusetts DMF should consider passing a compatible state regulation for the mandatory reporting of recreational BFT landings through the RBLT program.

Proposed Reporting System

- Limit the number of mandatory questions to only collect the minimum data elements needed for estimating BFT landings by size class.
- Develop and test Smartphone applications or "apps" for both the Droid and IPhone platforms as a reporting option for the RBLT program to supplement the existing phone and online options.
- Create a mobile version of the recreational BFT landings reporting Web site.

Tag Distribution and Tracking

- Mail initial tag kits to permit holders immediately after the HMS permit is purchased.
- Official RBLT tag stations will provide BFT tags to any permit holder with a valid Massachusetts HMS Angling or Charter/headboat permit.
- Reduce the number of RBLT tags initially mailed to permit holders (possibly 2 tags for Angling and 6 tags for Charter/headboat per year).
- Increase the number of tag stations to cover as many access sites where recreational BFT are landed in Massachusetts as possible.
- Considering the inherent difficulties and anticipated costs associated, tracking and fully accounting for all tags distributed should not be a goal of the modified RBLT design.
- Randomly select a sample of permit holders for an end of season survey to validate reported landings, determine the disposition of unreturned tags, and estimate unreported landings.

Outreach and Education

A significant investment in educational outreach is recommended to increase awareness and promote the new data collection program. The outreach campaign should:

- Use different media channels including printed materials, web sites, E-mail and text message program reminders, and electronic newsletters.
- Target both private boat anglers and charter boat captains who fish for recreational BFT. Different outreach strategies may be needed to engage these two fishery sectors.
- Clearly distinguish the RBLT use of the term "tag" (i.e. landings tag) from "tagging" programs that involve the live release of tagged fish. If confusion persists, consider using a different term.
- Encourage anglers and captains to report BFT landings as soon as possible after the catch – preferably at sea or, if not possible, immediately upon returning to the dock.
- Emphasize that being intercepted by a dockside sampler does not replace the mandatory RBLT reporting requirement and that fish reported to both programs will not count twice towards the quota.
- Increase angler and captain understanding of how the information they provide will be used and of the general importance of collecting accurate and complete recreational BFT data.
- Elements of the RBLT outreach campaign aimed at increasing awareness of the bluefin tuna reporting requirement could also be implemented outside of Massachusetts where the ALRS will still be in effect.

With these recommended design changes the project team anticipates that RBLT compliance rates will improve markedly, and over time should be similar to estimated compliance with the Maryland HMS catch card program (i.e., 80-85%). If not, continuation of the program should be reevaluated based on the decreased management utility of the information due to noncompliance. As with any long-term data collection program, the ultimate decision to continue funding the RBLT should involve a thorough cost-benefit trade-off analysis. This decision should be based on many inter-related factors including management's utility/need for the information, statutory requirements to collect the information, the value of the fishery and added value the program may provide, available funding levels, and other funding priorities.

BACKGROUND AND PURPOSE

Atlantic Bluefin Tuna Quota Management

Bluefin tuna (BFT) support a socially and economically important recreational fishery along the U.S. Atlantic coast from North Carolina through Maine. The NOAA Fisheries Atlantic Highly Migratory Species Management Division manages BFT and other HMS (i.e., other tunas, sharks, swordfish and billfish) domestically. Internationally, Atlantic BFT are managed by the International Commission for the Conservation of Atlantic Tunas or ICCAT. ICCAT sets annual BFT landings quotas for the U.S. and other member nations, and NOAA Fisheries allocates the U.S. quota into commercial and recreational sectors.

Under the current HMS Fishery Management Plan, about 20% of the U.S. Atlantic BFT quota is allocated to the recreational sector (i.e. Angling Category). Sub-quotas have been established within this sector to further divide the overall recreational quota both geographically (North and South) and by BFT size class (school, large school-small medium, and trophy). An ICCAT provision also limits the harvest of school size BFT (<47 inches) to no more than 10% of a nation's total quota. Recreational BFT quotas are managed by NOAA Fisheries using a combination of bag limits, size limits, and seasons.

Managing the recreational quota for BFT can be particularly challenging. The availability of BFT to the recreational fleet is often highly variable from year to year. Factors such as BFT year-class strength, spatio-temporal changes in migratory routes, and changes in targeted fishing effort can make it difficult to predict recreational landings. In recent years, estimated recreational landings have exceeded quota (or sub-quota) targets on several occasions. The most recent example was in 2009 when the Angling Category landed an estimated 566 metric tons, nearly tripling the base quota of 199 metric tons. Despite this sector overage, the U.S. managed to stay within its overall ICCAT BFT quota due to depressed commercial landings and a provision that allows carry-over of up to 50% of unused quota from the previous year. In 2011 ICCAT reduced the amount of unused quota that could be carried-over from 50% to 10%. This change, combined with increased commercial landings since 2009, has significantly reduced flexibility in managing the recreational sector quota for BFT. As a result, fairly restrictive recreational BFT regulations, including a one fish trip limit and closure of the small medium size class (59" to 73") have been implemented to avoid another large quota overage within this sector. Such controls have been criticized by segments of the recreational fishing industry, particularly charter boat captains, who request more stable or predictable regulations for their businesses to succeed.

Bluefin Tuna Recreational Monitoring

BFT recreational landings numbers are currently estimated from the NOAA Fisheries Large Pelagics Survey (LPS). The LPS is specifically designed to collect information on recreational fishing directed at large pelagic species including tunas, billfishes, swordfish, and sharks. Using this specialized survey design allows for higher levels of sampling large pelagic trips, which ultimately improves precision on estimates of catch and effort for highly migratory species. The LPS has been conducted by NOAA Fisheries since 1992 from Maine through Virginia from June through October. This spatial and temporal coverage encompasses the majority of U.S. recreational fisheries for BFT. North Carolina's recreational BFT landings are based on a state-run catch card census program.

In addition to the LPS, NOAA Fisheries collects recreational Atlantic BFT landings data through a census-based reporting program. This mandatory reporting requirement is fulfilled either by phone or Web tool in all states except Maryland and North Carolina, where catch card programs exist. Known as ALRS (Automated Landings Reporting System), this census-based recreational landings program was intended

to be an important component for management of BFT. However, ALRS compliance rates are thought to be extremely low (i.e., as low as 10-20% compliance) based on matching with observed BFT from the LPS and comparisons with LPS expanded estimates. By contrast, compliance with the Maryland catch card program is estimated to be around 80-85% based on similar comparisons with the LPS (compliance with the North Carolina program is also thought be much higher than ALRS, although this has never been thoroughly tested). Presumably this difference is due to a combination of increased enforceability on the docks and higher program visibility through targeted outreach (letters, posters, web sites) and dockside presence by state agency biologists. Whereas ALRS allows permit holders 24 hours after landing to report BFT by phone or web, in Maryland and North Carolina any BFT landed without a tail tag (provided in exchange for a catch card) represents a violation. Catch card programs have the added benefit of promoting angler awareness, participation and "buy-in" into the fishery management process.

The relative success of the state-run BFT catch card programs has allowed for greater use of the information for management purposes. In North Carolina, catch card numbers are used as the official landings estimates for BFT since the LPS is not conducted there. While the Maryland catch card data are not currently used as the official BFT landings numbers for quota monitoring, the program is still an important component in the management of BFT and other HMS species. Both Maryland and North Carolina catch card data are used to monitor the performance of the recreational sector fishery for BFT. Whereas preliminary LPS estimates are typically available monthly with a one month lag, catch cards can be collected and tallied weekly to provide managers with a "finger on the pulse" of the fishery. This is particularly important for a pulse-like, highly migratory fishery where landings can be concentrated in a very narrow temporal and geographic window. Catch card data are also used to monitor current landings with past performance of the fishery in Maryland and North Carolina as an indicator of the potential coast-wide performance of the fishery. When used in combination, the two programs (LPS and catch cards) complement each other and generate better data with which to manage BFT.

The issue of BFT recreational monitoring was discussed at length during the HMS Advisory Panel Fall 2010 meeting in Silver Spring, Maryland. The discussion focused on the need for more timely recreational data for in-season quota monitoring, rather than on the accuracy or precision of LPS estimates. The Advisory Panel strongly recommended that NOAA Fisheries either improve current or implement new census-based programs for BFT that will provide management with "real-time" (or as near real-time as possible) accurate landings updates for managing the recreational quota. Given the identified shortcomings of the ALRS, NOAA Fisheries has been exploring options for implementing more reliable and accurate recreational BFT census-based programs (in states other than North Carolina and Maryland) to better meet management needs.

Massachusetts' Recreational Bluefin Tuna Fishery

Geographic distribution of BFT landings typically can vary greatly from year to year due to changes in fish availability, migratory patterns, fishing effort, and management regulations. In recent years the recreational BFT fishery has experienced a noted geographic shift from South to North. In particular, the contribution of the Massachusetts fishery to the total recreational landings increased markedly starting around 2006 (Figure 1). Since that time Massachusetts has accounted for between 22%-61% of the annual recreational BFT landings (numbers of fish) from Virginia through Maine. From 2007-2012 (with all years combined), Massachusetts accounted for 42% of the total recreational BFT landings, by far more than any other state.

Massachusetts also has more permitted anglers and captains targeting recreational BFT than any other state. In 2012, Massachusetts accounted for about 20% of all HMS Angling Category and 28% of all

Charter/Headboat Category permits sold from North Carolina through Maine. No other state had more combined permits sold. The proportion of participants in the recreational BFT fishery from Massachusetts is likely higher than these numbers suggest since the HMS permit is a multi-species permit and, with the exception of sharks, there are relatively few alternative HMS species to fish for in Massachusetts. In states to the south (i.e. NJ-NC) there is a higher probability that at least some HMS permit holders focus entirely on billfish, or other tunas such as yellowfin, bigeye, or albacore. Since these popular alternative HMS species are not as available to Massachusetts anglers it is far less likely that an HMS permit holder in Massachusetts does not target BFT.

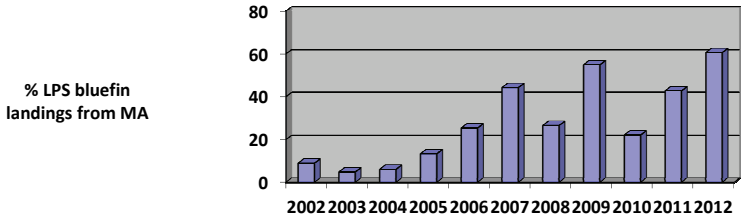


Figure 1. Percent of Maine through Virginia recreational BFT landings estimate (numbers of fish) attributed to the Massachusetts fishery from 2002-2012 (Source: NOAA Fisheries Large Pelagics Survey).

LPS dockside samplers have recorded landed recreational BFT at 30 different access points widely distributed throughout Massachusetts (e.g., Cape Cod, the Islands, Cape Ann, Plymouth region). From 2006-2011 the LPS telephone survey component recorded 67 different Massachusetts public access sites used on trips targeting BFT. By contrast, the relatively large recreational BFT fishery in Maryland is geographically concentrated to about 10 access sites within a 10 mile radius in the greater Ocean City area. Figure 2 shows the geographic distribution of Massachusetts' 2011 HMS Angling and Charter/headboat permit holders by principal port city.

In addition to the large number of sites where BFT are landed, Massachusetts may also have greater diversity in site types compared to other states. In recent years recreational sized BFT have been found closer to shore off the Massachusetts coast. From 2007-2011 about one-fourth of Massachusetts' recreational BFT targeted trips intercepted by the LPS fished within 5 miles from shore and nearly one-half fished within 10 miles. By comparison, less than 1% of the recreational BFT targeted trips from New Jersey through Virginia were within 10 miles from shore and one-half fished beyond 40 miles from shore. The near-shore availability of BFT has resulted in the fishery being more accessible to a fleet of smaller boats in Massachusetts than are typically found in other states where the BFT grounds are more distant. In terms of access sites, this means a greater potential for BFT to be landed at smaller sites, including more boat ramps, small docks, and moorings.

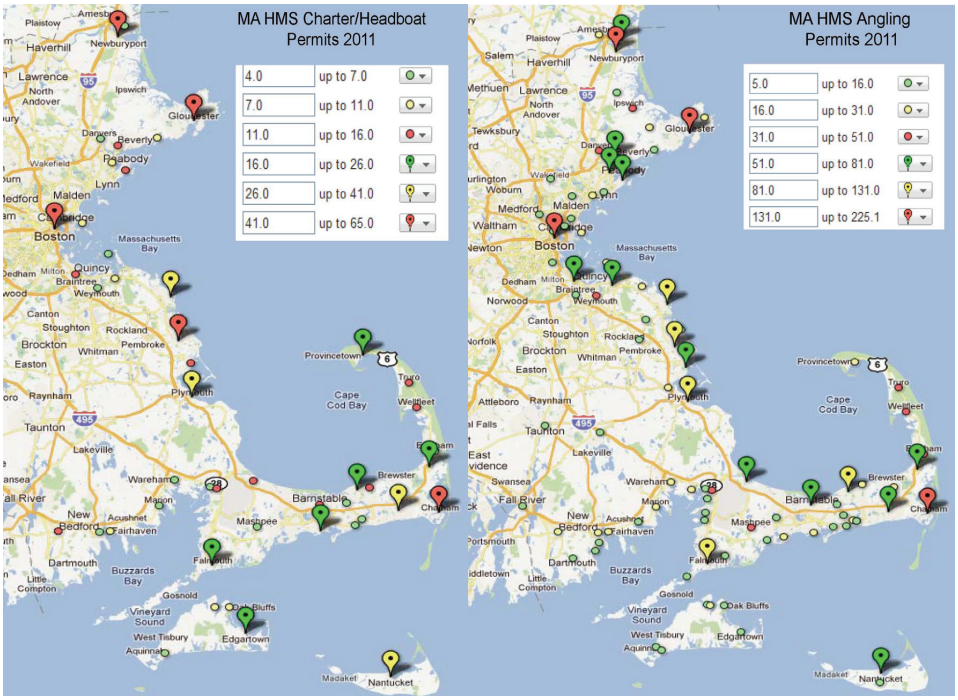


Figure 2. Geographic distribution of Massachusetts' 2011 HMS Angling and Charter/headboat permit holders by principal port city.

Project Goal and Objectives

The need for more timely recreational data has received a lot of attention recently in the wake of the re-authorized Magnuson-Stevens Fishery Conservation and Management Act which mandates establishment of Annual Catch Limits and Accountability Measures for most federally managed species. In general, fishery managers now need not only more precise and accurate recreational data, but also more timely delivery of that data to make the in-season adjustments necessary to prevent quota overages. Depending on the design, census programs can provide fishery managers with timelier in-season landings updates and more frequent "check-in" points for monitoring a recreational harvest quota compared to a survey. For example, the LPS produces preliminary monthly BFT landings estimates with about a one month lag (i.e., July estimates released around September 1st). By comparison, the North Carolina catch card program collects, processes, tallies, and reports preliminary BFT landings weekly.

An accurate and timely census-based landings program in Massachusetts could serve as an extremely valuable tool for managing the recreational BFT quota given the state's recent contribution to the coast-wide landings and anticipated continued growth of this fishery. Successful and well established HMS catch card programs already exist in Maryland and North Carolina. However, due primarily to noted differences in the number, spatial dispersion, and diversity of access sites where recreational BFT are landed, a successful BFT census program in Massachusetts will likely need to differ from these existing

state models. The goal of this project was to design and test a new census-based data collection program for the Massachusetts recreational BFT fishery aimed at improving compliance with the current system. Specific objectives associated with achieving this goal were as follows:

- Improve our understanding of anglers and captains perceptions of the ALRS, including reasons for not reporting fish and suggestions for improving the current BFT reporting system.
- Involve anglers, charter boat captains and fishing industry representatives in the design of the data collection pilot program.
- Create a state-federal partnership between Massachusetts Division of Marine Fisheries (DMF) and NOAA Fisheries in the design and implementation of the pilot program.
- Increase awareness among Massachusetts HMS permit holders of the pilot project and of the general importance of reporting recreationally landed BFT.
- Evaluate the success of the new data collection program, identify weaknesses, recommend improvements in the overall design, and assess the potential for full-scale implementation of the program in Massachusetts.

METHODS

The data collection approach tested in this study was designed with input from all project team members. The project team held an initial face-to-face meeting in August 2011, followed by many conference calls and email exchanges leading up to implementation. An attempt was made to reach consensus on all design elements whenever possible. In addition to including fishing industry representatives on the project team, an effort was made to reach out to the broader HMS fishing community for design input. This was achieved through an Email Informational Survey of Massachusetts' HMS anglers and captains, presentations at charterboat and angler association meetings, and informal conversations.

Email Informational Survey

A short online survey was delivered to all 2011 HMS permit holders from Massachusetts who provided an Email address in their permit application. The informational survey served two primary purposes: 1) Obtain feedback and information from recreational BFT anglers and captains that could be useful in designing an improved data collection system, and 2) As a form of early outreach to get HMS permit holders thinking about BFT reporting. OMB Paperwork Reduction Act (PRA) approval for this survey was expedited under the title "Generic Clearance for the Collection of Qualitative Feedback on Agency Service Delivery."

On March 12, 2012 permit holders were sent an Email (Appendix A) explaining the survey objectives and why they were selected, with a link to the Survey Monkey questionnaire (Appendix B). The Email assured respondents of complete anonymity of their responses. This was considered particularly important to encourage candid responses to potentially sensitive questions about past compliance with the mandatory reporting requirement.

Program Outreach

Project team members gave presentations and led discussions at several events where BFT captains and anglers were present to both spread the word about the pilot study and get feedback on the proposed data collection design. Email notices were sent to fishing association members prior to the event (Appendix C). The following events were covered:

- Massachusetts Bay Guides Seminar, Scituate, Massachusetts, March 2012
- Highly Migratory Species Advisory Panel Meeting, Silver Spring, Maryland, March 2012
- Northeast Charterboat Association meeting, Newburyport, Massachusetts, April 2012
- Stellwagen Bank Charterboat Association meeting, Marshfield, Massachusetts, April 2012
- Green Harbor Tuna Club meeting, Marshfield, Massachusetts, April 2012

A Frequently Asked Questions (FAQ) flyer about the program with contact information for additional questions was handed out to anglers and captains at some of these events (Appendix D). For program recognition the project team agreed on the following pilot study program name and acronym: Recreational Bluefin Landings Tag pilot program or RBLT. The project name and acronym appeared on

all outreach materials and program communications. Both the Massachusetts DMF logo and the MRIP logo were also placed on these items to emphasize the state-federal partnership and collaborative nature of the pilot project.

Landings Census Program Design

The project team identified several important criteria in the design of the pilot data collection program. Recognizing that some HMS permit holders, particularly for-hire captains, may already feel over-burdened by reporting requirements, an attempt was made to minimize reporting burden of the pilot design. To encourage cooperation, reporting of BFT landings should be relatively quick and easy. Reporting options should also be inclusive of all anglers and captains regardless of technological capability. That is, although more high-tech options could be made available, any fisherman with a telephone should be able to report. Finally, the program should be enforceable at the point of landing. Pilot participants were not exempt from their usual mandatory reporting requirements under the ALRS program. Although participation in the pilot study was considered voluntary, enforceability was identified as an important feature for possible future implementation.

The project team reached consensus on the following pilot project design elements:

- All recreational BFT landed by pilot participants should be tagged at sea when the fish is boated.
- Initial BFT landings tags were mailed to participants at the start of the fishing season: (Angling 5 tags, Charter/headboat 10 tags).
- Additional tags could be obtained from designated tag stations located throughout the state.
- BFT should be reported to NOAA Fisheries within 24 hours of landings.
- Pilot participants should report BFT by phone or Internet through a modified version of the ALRS questionnaire that allows for reporting of a BFT landings tag number.
- Attempt to contact pilot participants who report BFT landings through ALRS without a proper tag number or participants who may be experiencing technical issues when trying to report.
- All unused landings tags should be mailed back to NOAA Fisheries at the end of the season or dropped off at one of the designated tag stations.

RBLT Implementation

Establishment of Tag Stations

Tag stations served two important functions in the RBLT design: 1) provide additional tags to participants who had used up the initially mailed tags, and 2) collect unused tags. RBLT tag stations were established at 19 different marinas and tackle shops frequented by Massachusetts' BFT anglers and charter captains (Appendix E, 2nd page). In addition to covering the primary locations where recreational BFT are landed, an attempt was made to strategically locate tag stations such that fishermen who did not use one of these sites would not have to travel far to get to a tag station.

Project team members contacted marina operators and tackle shop owners to recruit tag stations for the RBLT pilot. Massachusetts DMF staff made in-person visits to each potential site to explain the goal

of the pilot program and the tag station's role in implementation. If the owner agreed to participate they were asked to sign a Cooperative Agreement with NOAA Fisheries which formalized their role as a tag station and provided specific instructions for fulfilling that role (Appendix F).

Pilot Participant Recruitment

Given the large number of HMS permit holders in Massachusetts and the project's limited budget, it was necessary to recruit a subsample of permit holders to participate in the pilot program. Pilot participants were recruited from lists of HMS Angling and Charter/headboat category permit holders who indicated Massachusetts as their principle port state. Since recruitment occurred early in the BFT season (June) many anglers and captains had not yet renewed their HMS permit for 2012. Therefore, for a more robust and inclusive sample frame both expired 2011 permits and new/renewed 2012 permits were included in the recruitment frames.

NOAA Fisheries contracted with ICF Macro to implement the RBLT recruitment survey. ICF phone interviewers and supervisory staff participated by phone in a kick-off meeting with project team members prior to recruitment dialing to brief them on the project's objectives and answer any questions they had about the CATI script. ICF programmed the telephone questionnaire using a commercially available software package designed specifically for programming and managing CATI studies.

Randomly selected permit holders were contacted by phone and asked an initial screener to determine if they planned to fish recreationally for BFT in 2012 (Appendix G). If they answered "yes," the interviewer continued by first explaining the goal and basic design elements of the RBLT, and then asking the respondent if they were willing to participate in the pilot study. In addition to confirming contact information, willing participants were asked to estimate how many recreational BFT trips they planned to take in 2012 and which marinas or launch sites they planned to use for these trips.

Recruitment calls extended over a five day period (June 15-19) with the CATI system continuously selecting permit holder phone numbers randomly from each sample frame until the target number of pilot participants was obtained in each category: Angling=300 and Charter=100. The telephone survey followed a dialing protocol in which up to three attempts were made to reach a final disposition. Attempts were distributed among weekday days, weekday evenings, and weekends. Interviewing sessions were scheduled for weekdays, from 9:00 a.m. to 8:00 p.m., respondent time, and for weekends, from 12:00 p.m. to 8:00 p.m., respondent time. A two refusal rule was used whereby if the respondent refused to participate the first time called the record was given a disposition of initial refusal and called one more time. If the respondent refused a second time, the record was given a hard refusal disposition and was automatically removed from calling permanently.

In addition to the random selection of participants, the project team thought it beneficial to recruit particular BFT anglers and captains for purposes of testing and promoting the pilot design. A list of 20 avid recreational BFT fishermen (i.e. "Highliners") was developed and an attempt was made to contact and recruit all permit holders on this sample frame. The project team also decided to try to recruit all recreational BFT fishermen who kept their boat at one particular marina (Green Harbor Marina) in order to test the pilot at a location with a lot of educational outreach and management buy-in, as well as to test the effect of fishermen interactions on the dock on reporting rates (e.g., peer pressure, visual and verbal reminders). Green Harbor Marina was selected because it represents one of the most active marinas for recreational BFT landings in the state and marina management expressed a willingness to participate in the pilot study. A list of all vessels with slips at Green Harbor Marina was matched to the HMS Angling and Charter/headboat permit lists to determine who should be contacted for the pilot. A

minimum of 10 call attempts were made to contact each permit holder on both the "Highliner" and the Green Harbor lists, with the goal being to recruit as many permit holders as possible from these sample frames.

Initial Mailing and Distribution of Tags

The following items were included in the initial tag kits mailed by the contractor (ICF Macro) to all RBLT participants:

- Cover letter (Appendix H)
- Frequently Asked Questions flyer (Appendix D)
- Instructional flyer with tag station list (Appendix E)
- Postage paid oversized business reply envelope for returning unused tags
- Initial RBLT tags (5 for Angling; 10 for Charter/headboat)
    - Heavy duty 11.5 inch plastic cargo seals with locking device were used as tags. Each tag was customized with a 7-digit tag identification number for reporting. Half of the tags were printed with the NMFS phone number and the other half with the web site for reporting recreational BFT.
- Wallet sized business card with program reporting options (phone and web site) on one side and unique tag identification numbers on the reverse. Provided to help participants keep track of tags used and reported throughout the season (Appendix I).
- Waterproof and sealable red plastic pouch with RBLT logos and instructions for holding tags and other program materials.

Additional tag kits (referred to as "replenishment tag kits") were prepared for distribution to the tag stations. Replenishment tag kits contained the same items as described above for the initial tag kits with three exceptions: 1) All replenishment kits had 5 tags, 2) Red plastic pouch was not included with replenishment kits, and 3) Replenishment kits also contained an index card sized Tag Information Card with pre-printed tag ID numbers (unique to each kit) on one side and space for the participant's information and signature on the reverse (Appendix J). Tag Information Cards were placed on the

outside of the replenishment kit envelope in a clear plastic pouch to provide easy access for tag station clerks.

Tag tracking

The tracking of all tags distributed to participants throughout the fishing season was considered an important design element of the pilot study. The contractor (ICF Macro) maintained a tag tracking database that linked unique tag ID numbers to participants. As information became available, the disposition of each tag distributed was recorded in the database (e.g., reported used, returned unused, reported lost or inaccessible, reported returned but never received, unknown).

RBLT Program Reminders: E-mail, Mail, and Telephone

RBLT participants were re-contacted several times and by different methods during the implementation phase. These contacts were designed to reduce program drop-out rates, and serve as a reminder for participants to tag and report all landed recreational BFT and to return their unused tags after the season. On August 29, 2012 a mid-season program reminder E-mail was sent via Survey Monkey from the NOAA Fisheries project manager to all RBLT participants who provided a valid E-mail address. The message thanked participants for being part of the RBLT program and included a clickable link with program instructions, tag station locations, and a comments/suggestions box. Towards the end of the BFT season the contractor (ICF Macro) mailed a reminder for participants to return any unused tags along with another postage paid business reply envelop enclosed (Appendix K). Any participant who had not returned his or her unused tags or had not reported such tags to ALRS by October 25, 2012 was included in the sample for the reminder mailing.

Two weeks after the reminder letter was mailed the contractor (ICF Macro) attempted to contact all RBLT participants who still had unaccounted for tags. A CATI script and questionnaire was developed for the post-season reminder phone calls (Appendix L). The purpose of the follow-up call was to 1) obtain information about the disposition of all RBLT tags provided to each participant, 2) validate reported BFT landings and obtain information about unreported and/or untagged landings, 3) remind participants to return any unused tags still in their possession, and 4) obtain feedback on the RBLT pilot design and ideas for improvement. The dialing period for the follow-up phone calls lasted five days and a minimum of 10 attempts were made to contact each participant. As part of the follow-up phone call script, participants were asked if they wanted another tag return envelope sent to them. One final mailing with cover letter and postage paid business reply tag return envelope was sent to 48 participants who answered “yes” to this question.

Individual participants were contacted by phone or email as needed if a problem was detected with a particular report (e.g., tag number missing, same tag number used for more than one fish, tag number doesn’t match tag series associated with participant in database). Participants were also contacted by phone if, based on their reports, they were close to using up all of their initially allocated tags. These calls served as a reminder regarding procedures for obtaining replenishment tags and also as a form of outreach to continue to encourage participation.

Estimating RBLT Compliance Rates

RBLT compliance rates were estimated using information from Large Pelagics Intercept Survey and Large Pelagics Biological Survey. The LPIS conducts dockside interviews with BFT anglers and captains, and the LPBS collects biological samples of BFT. An attempt was made to match each individual BFT landings recorded from the LPIS and LPBS in Massachusetts with an ALRS reported BFT to estimate reporting

compliance. Only if the landings state, HMS permit number, and date fields all matched exactly between LPIS/LPBS and ALRS was the record considered a "match" (i.e., permit holder complied with mandatory reporting requirement).

In addition to matching individual fish, comparisons were made between RBLT reports and LPS expanded estimates. Since only a sub-sample of Massachusetts HMS Angling and Charter/headboat permit holders were selected for the pilot, RBLT reports were expanded to produce an estimated count for all permit holders. Due to differences in reporting rates between the two groups, expansion was done by permit category to produce separate Angling and Charter/headboat estimates. The basic formula used for expansion was:

(RBLT reported BFT/RBLT participants) X Estimated MA permitted recreational BFT vessels

The RBLT reporting rate could not be expanded to include all HMS permitted vessels in Massachusetts because, unlike RBLT participants, not all permit holders necessarily got the permit to target recreational BFT. RBLT recruitment survey results were used to estimate the number of Massachusetts vessels that fished for recreational BFT in 2012. Based on responses to the question "Do you plan to use this vessel to fish recreationally for BFT in Massachusetts in 2012?", the percent of Massachusetts HMS 2012 permitted vessels that did not fish recreationally for BFT in 2012 was estimated for each permit category. This estimated percent was subtracted from the total number of HMS permits sold in Massachusetts in 2012 for expansion of RBLT reporting rates, by category, in the equation above.

Since the RBLT did not include out-of-state permit holders or non-permitted BFT fishermen, for comparison purposes these components were estimated and subtracted from the LPS Massachusetts BFT landings estimates. The percent of LPIS intercepted recreational BFT landed in Massachusetts by out-of-state/non-permitted anglers and captains, by mode, was subtracted from the LPS private boat (Angling) and charter boat mode estimates. Due to very small sample sizes for this component of Massachusetts' BFT landings estimate, a single correction factor was used for all months and BFT size classes within a particular mode. Although data were not weighted by strata, this approach was considered a reasonable enough approximation of the out-of-state/non-permitted component for purposes of comparing LPS with RBLT expanded estimates.

RESULTS

Email Informational Survey

Response rates for the Email Information Survey were 37.7% for Angling category and 36.8% for Charter/headboat permit holders (Table 1). The large majority (84% Charter/headboat; 88% Angling) of Email survey respondents indicated they fish for recreational BFT (see Appendices M and N for complete Email Informational Survey results). Of those targeting recreational BFT, nearly 78% of Charter/headboat and 59% of Angling category permit holders indicated they had ever landed one. Nearly 42% of Angling category and 20% of Charter/headboat category respondents who indicated they had ever landed a recreational BFT also indicated they had never reported their fish through ALRS (neither by phone nor by web). Another 15% of respondents indicated they did not know if they had ever reported through one or both reporting methods (Table 2). Interestingly, when asked directly "Have you ever landed a recreational BFT and not been able to or chosen not to report it?" only about 21% in either permit category answered "Yes". Less than 4% of respondents who indicated they had landed recreational BFT in the past said they experienced problems trying to report through the ALRS phone or Web system.

Table 1. Disposition and response rates for Email Informational Survey by permit category.

HMS Permit category	Total 2011 Permits in Massachusetts	Total with Valid Email Addresses Provided	Responded to Survey	Response Rate
Angling	3,466	2,709	1,022	37.7%
Charter/headboat	882	673	248	36.8%
All	4,348	3,382	1,270	37.6%

Respondents who indicated that they had landed a recreational BFT without reporting it were asked to explain why in an open-ended question. The reasons for not reporting showed some variation between HMS Permit categories (Table 3), with 49% of Angling category permit holders stating that they did not know that reporting was required, compared to only 17% of Charter/headboat permit holders. The most common reason for not reporting among Charter/headboat category permit holders was that they forgot to report. For both categories combined, about 19% indicated that they consciously chose not to report, while 8% tried to report but experienced some technical difficulty.

Nearly 80% of Charter/headboat respondents and 88% of Angling respondents said they always have a cell phone on board when fishing for BFT. Results also indicate that about two-thirds of them use a Smartphone (e.g., iPhone, Droid, or similar). Over one-half of Charter/headboat respondents and nearly two-thirds of Angling respondents indicated they always have cell phone coverage at the dock or marina where they normally return from BFT fishing. Less than 3% responded that they "rarely" had cell phone coverage.

Table 2. Percent of respondents who had reported recreational BFT to the ALRS by reporting option and permit category (Note: Only includes respondents who indicated they had landed a recreational BFT in the past).

HMS permit category	Reported to ALRS phone option only	Reported to ALRS Web option only	Reported to both phone and Web options	Don't know if they reported to one or both options	Did not report to either phone or Web
Angling	9.7%	27.8%	5.6%	15.5%	41.5%
Charter/ headboat	18.2%	33.8%	14.3%	13.6%	20.1%
All	11.7%	29.2%	7.7%	15.1%	36.4%

Table 3. Reasons for not reporting when respondents answered "yes" to the question: "*Have you ever landed a recreational BFT and not been able to, or chosen not to report it?*"

HMS Permit category	Sample Size	Reason for Not Reporting			
		Didn't Know Reporting Was Required	Forgot to Report	Chose Not to Report	Tried to Report but Experienced Technical Difficulties
Angling	66	48.5%	27.3%	16.7%	7.6%
Charter/headboat	23	17.4%	47.8%	26.1%	8.7%
All	89	40.4%	32.6%	19.1%	7.9%

RBLT Recruitment Dialing Results

The contractor (ICF) successfully contacted 940 out of 4,456 permit holders called resulting in a response rate of 21.1%. The large majority of permit holders contacted indicated that they both planned to fish for recreational BFT in 2012 (78%) and were willing to participate in the RBLT pilot program (87%) (Table 4). Of those Angling category respondents who indicated they did not plan to fish for recreational BFT, 48% did not renew their permit in 2012, another 15% switched to the commercial Atlantic Tunas General category, while 36% renewed their Angling permit for 2012. Of those Charter/headboat category respondents who indicated they did not plan to fish for recreational BFT, 24% did not renew their permit in 2012, 2% switched to the General category, while 73% renewed their Charter/headboat permit for 2012.

A total of 416 HMS permit holders (309 Angling; 107 Charter/headboat) were recruited to participate in the RBLT pilot program (Table 5). Permit holders recruited into the RBLT pilot program were asked to estimate the number of trips they planned to take for recreational BFT in Massachusetts in 2012 (Figure 3). On average, Charter/headboat category RBLT participants thought they would take about twice as many recreational BFT trips (17.9) as did Angling category participants (9.1).

Table 4. Responses to RBLT pilot program recruitment screener questions by permit category.

	Do you plan to use your vessel for recreational BFT fishing in Massachusetts in 2012?				*Are you willing to participate in the RBLT pilot program?*			
HMS permit category	Yes	No	Don't Know	Refused	Yes	No	Maybe	Refused
Angling	79.9%	13.1%	6.8%	0.2%	87.5%	9.4%	1.7%	1.4%
Charter /headboat	73.2%	21.3%	4.2%	1.4%	87.0%	11.4%	0.0%	1.6%
All	78.1%	15.3%	6.1%	0.5%	87.4%	9.9%	1.2%	1.5%

Table 5. HMS permit holders recruited for the RBLT pilot by sample frame and permit category.

Recruitment sample frame	Total number of permit holders on frame	Total number recruited to RBLT pilot	Angling category recruits	Charter /headboat recruits
Angling	3,542	299	299	---
Charter/headboat	871	91	---	91
Green Harbor Marina	61	15	9	6
Highliners	20	11	1	10
All Frames	4,494	416	309	107

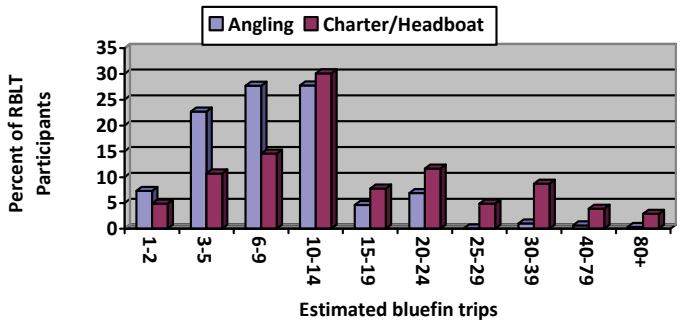


Figure 3. Frequency distribution of RBLT participant responses to phone survey question: *About how many trips do you think you will make this year for recreational BFT in Massachusetts?*

Follow-up Call Results

The contractor (ICF Macro) attempted to contact 299 (out of 416 total) RBLT participants who still had unaccounted for tags (i.e., a tag that was neither reported as used nor returned as unused) by mid-November. The completion rate for follow-up phones calls was 72% (216 participants), with a refusal rate of 5%. About 70% of Angling and 84% of Charter/headboat participants indicated that they still had unused tags in their possession (Table 6).

Table 6. Frequency distribution of follow-up call responses to questions regarding the disposition of unused tags.

HMS permit category	Unused tags still in possession	Already mailed them back	Tag location known but inaccessible	Lost or thrown away	Don't know if they still have unused tags
Angling	69.6%	18.0%	5.0%	3.1%	4.3%
Charter/ headboat	83.9%	12.5%	1.8%	0.0%	1.8%
All	72.6%	17.4%	4.1%	2.3%	3.7%

In addition to obtaining information about the disposition of unused tags, the follow-up call was used to validate RBLT reported BFT landings (i.e., used tags) with participants as well as to inquire about unreported BFT landings. Since these questions required participants to recall fishing activity for the entire season (up to 5 months prior), recall bias could have affected the accuracy of responses. However, given the subject matter, recall bias may have been minimized by the fact that landing a BFT is a rare (and likely memorable) event for most anglers and captains. In virtually all cases (97%) the permit holder verified that the number of BFT reported for their vessel, based on the ALRS database, was correct. In all but one instance where the number of BFT reported from the database was not verified, the respondent said they had reported more fish than appeared in the database. This disparity likely resulted from respondents counting fish reported under a different permit number and/or different

vessel than the one recruited for the RBLT pilot. In a few cases the RBLT participant purchased a new permit for 2012 instead of renewing the 2011 permit number that they were recruited under. Only 7 out of 220 respondents (3%) indicated that they landed recreational BFT that they did not report.

The large majority of respondents said the instructions for participating in the RBLT pilot were "very easy" (67%) or "somewhat easy" (19.3%) to understand. Only 3.2% thought the RBLT instructions were difficult (either very or somewhat difficult) to understand. Although only a few participants actually made use of the RBLT tag stations in the pilot, more than two-thirds of respondents (68%) said the stations were conveniently located for them, while only 4.2% said they were not conveniently located. The remaining 27.8% said they did not know if the stations were conveniently located or did not pay attention to the locations. About two-thirds of respondents also indicated that they would likely use a smartphone application ("app") if one was made available for reporting recreational BFT landings ("very likely"=55.6%; "somewhat likely"=12%). A larger percent of Charter/headboat respondents (26.8%) said they were "very unlikely" to use a BFT smartphone application compared to Angling respondents (15.7%).

Tag Accounting

A total of 2,690 recreational BFT landings tags were distributed to RBLT participants: 2,615 initially mailed and 75 obtained at tag stations. By late October, when the reminder letter was sent, 91% of participants still had unaccounted for tags. In mid-November, when the follow-up phone calls were made, 72% of participants still had unaccounted for tags.

More than half of the tags distributed (57.8%) were returned in the mail as unused (Table 7). One hundred and ninety tags (7.1%) were used and reported to the ALRS with another 18 being reported as used during RBLT follow-up phone interviews. About one-third of the tags distributed (928 tags; 34.5%) were neither reported as used nor returned as unused. One hundred and fifty-six participants (37.5% of all participants) accounted for these 928 tags. Follow-up calls were completed with 97 out of the 156 participants (62.2%) with tags neither used nor returned by the end of the project. Reponses to follow-up phone call questions provided additional information about the disposition of tags that were neither used nor returned (Table 8). The follow-up calls resolved the disposition of nearly two-thirds (64.1%) of these 928 tags. By the end of the pilot study the disposition of only 333 tags, or 12.4% of all tags distributed, was still unresolved (12.7% Angling; 12.0% Charter/headboat) .

Table 7. Number of recreational BFT landings tags distributed and final disposition of tags by HMS permit category.

HMS permit category	Tags distributed	Tags used & reported to ALRS	Tags used & reported on follow-up call	Tags returned as unused	Tags neither returned nor reported used
Angling	1,545	38 (2.5%)	10 (0.7%)	947 (61.3%)	550 (35.6%)
Charter/ headboat	1,145	152 (13.3%)	8 (0.7%)	607 (53.0%)	378 (33.0%)
All	2,690	190 (7.1%)	18 (0.7%)	1,554 (57.8%)	928 (34.5%)

Table 8. Final disposition of the 928 tags that were neither returned nor reported used based on follow-up phone call responses.

HMS permit category	Completed follow-up call interview with participant				Interview not completed
	Tag not received by participant	Tag lost or inaccessible	Tag mailed back – not received by contractor	Tag still in possession / confirmed unused by phone	Tag Unresolved
Angling	6	65	31	252	196
Charter/ headboat	20	10	10	201	137
All	26	75	41	453	333

Recreational Bluefin Tuna Reported

ALRS BFT reporting frequency was compared between permit holders participating in the RBLT pilot and permit holders who were not in the program (Table 9). Comparisons were made by HMS permit category due to the large differences in reporting rates between the Angling and Charter/headboat categories. In the Angling category, the RBLT participant reporting rate was more than double the non-participant rate (0.15 versus 0.07). The percent of Angling category RBLT participants who reported at least one BFT was more than triple the percent of Angling non-participants reporting at least once (9.39% versus 3.03%). Of those who reported at least one BFT, Angling non-participants actually had a higher reporting rate than RBLT participants (2.20 versus 1.55). In the Charter/headboat category, the RBLT participant reporting rate was 1.48 BFT per permit holder compared to 0.25 for non-participants. The overall RBLT Charter/headboat reporting rate is likely inflated by captains pre-selected for recruitment as "Highliners" and therefore may not be reflective of this permit category in general. However, even with the Highliners removed the reporting rate for Charter/headboat RBLT participants was still more than double the non-participant rate (0.55 versus 0.25). This difference is even more pronounced when you remove one non-RBLT highliner responsible for 25% of all non-RBLT Charter/headboat ALRS reports. The percent of Charter/headboat category RBLT participants who reported at least one BFT was more than four times the percent of non-participants reporting at least once (20.83% versus 4.91%, without Highliners). Similar to Angling, of those who reported at least one BFT, Charter/headboat non-participants had a higher reporting rate than RBLT participants (3.89 versus 2.65, without Highliners). The 15 RBLT participants (9 Angling, 6 Charter/headboat) from Green Harbor Marina reported a total of 3 recreational BFT during the pilot study.

The ALRS BFT reporting history of vessels participating in the RBLT was examined to evaluate the possible positive impact being part of the RBLT pilot had on reporting compliance. All of the 55 RBLT participants who reported at least one BFT had held an HMS permit for their vessel in prior years (i.e. there were no BFT reported by newly permitted vessels). Overall about two-thirds of participants (35 out of 55) who reported at least one BFT had never reported one to ALRS in the past for the same vessel. Since we do not know the actual BFT landings history of these vessels, we cannot definitively

say whether these participants were previously non-compliant or they simply did not land BFT in prior years. However, the percent of RBLT participants reporting a BFT for a particular vessel for the first time in 2012 was high even for vessels that had been permitted in their name for many years (Table 10). For example, 72.7% of vessels permitted for 3 to 4 years and 62.5% of those permitted 5 to 7 years before the pilot started, reported a recreational BFT landings for the first time as a participant in the pilot study.

Table 9. Comparison of recreational BFT ALRS reporting rates between RBLT participants and non-RBLT permit holders by permit category (Note: only includes BFT reported after July 1 and less than 73" curved fork length).

RBLT Participants	Permit holders	BFT reported	BFT reported per permit holder	Number of permit holders reporting at least one BFT	Percent reporting at least one BFT	BFT reported per permit holder who reported at least one BFT
Angling	309	45	0.15	29	9.39%	1.55
Charter/HB	107	158	1.48	26	24.30%	6.08
Charter/HB without Highliners	96	53	0.55	20	20.83%	2.65
Green Harbor	15	3	0.20	3	20.00%	1.00
Non-RBLT						
Angling	3002	200	0.07	91	3.03%	2.20
Charter/HB	755	192	0.25	38	5.03%	5.05
Charter/HB without one Highliner	754	144	0.19	37	4.91%	3.89

RBLT Estimated Compliance Rates Based on LPS Matching

The reporting rate comparison strongly suggests that participation in the RBLT had a positive effect on reporting, and therefore compliance with the mandatory requirement. However, actual estimation and comparison of compliance rates requires independent validation of observed landings. From July through October 2012 a total of 227 recreational BFT were either reported to the LPIS or sampled by the LPBS in Massachusetts. An attempt was made to match these fish to BFT reported in the ALRS database. About one-half (47%) of LPS fish landed by RBLT participants were matched exactly by permit number and date, compared to only 13% match for non-participants (Table 11). Sample size for RBLT participant matching was small, and one participant was responsible for 50% (10 out of 20) LPS BFT that were not reported to ALRS. The overall Massachusetts match rate between LPIS/LPBS BFT and ALRS of 18.9% was within the previously estimated ALRS compliance rates range of 10-20%.

Table 10. Number of RBLT participants reporting at least one recreational BFT and percent reporting for the first time with that permitted vessel by initial permit year and category.

	HMS Angling		HMS Charter/headboat		All	
Initial Permit Year	Number of permit holders	Percent reporting for first time	Number of permit holders	Percent reporting for first time	Number of permit holders	Percent reporting for first time
2012	0	---	0	---	0	---
2011	5	100%	1	100%	6	100%
2010	8	87.5%	3	66.7%	11	81.8%
2008-2009	8	87.5%	3	33.3%	11	72.7%
2005-2007	4	25%	4	100%	8	62.5%
1999-2004	4	0%	15	46.7%	19	36.8%
All Years	29	69.0%	26	57.7%	55	63.6%

Table 11. Results of matching LPIS and LPBS sampled individual recreational BFT landed in Massachusetts with ALRS reported fish by permit number and date.

Permit Holders	Number of LPIS/LPBS BFT sampled	Number matched to ALRS reported fish	Percent matched to ALRS reported fish
RBLT Participants	38	18	47.4%
Non-participants	189	25	13.2%
All	227	43	18.9%

Landings Estimates Comparisons: Expanded RBLT, ALRS, and LPS

The RBLT reporting rate (i.e. reported BFT/participants) was expanded by the estimated number of 2012 Massachusetts permitted BFT vessels to arrive at an expanded RBLT landings estimate. This was done separately for Angling and Charter/headboat to account for large differences in reporting rates between permit categories. The RBLT Charter/headboat reporting rate was somewhat skewed by two participants who accounted for 90 (58 + 32) out of 158 or 57% of all BFT reported. The next largest number of BFT reported by an RBLT participant was 9. Similarly, one non-RBLT permit holder accounted for 25% (48 out of 192) non-RBLT Charter/headboat BFT reported. In terms of reporting rates, these three permit holders were considered outliers. Rather than include them in the reporting rate

expansion calculation, their reports (138 BFT) were added on to the RBLT expanded Charter/headboat estimate.

From the recruitment survey, 5.7% of Angling and 17.7% of Charter/headboat permit holders with a valid 2012 HMS permit (i.e., excluding those who did not renew) said they did not plan to fish for recreational BFT in 2012. For the RBLT landings estimate expansion, these percentages were subtracted from the total number of permits since the RBLT reporting rates only included recruited participants who indicated that they would fish for recreational BFT in 2012. The numbers used to calculate the RBLT expanded BFT landings estimates are shown in Table 12.

The LPS BFT landings estimates were adjusted downward to account for landings by out-of-state and non-permitted vessels that were not covered by the RBLT. For the private boat mode, 4 out of the 35 (11.4%) Massachusetts intercepted recreational BFT landings were by out-of-state or non-permitted anglers. For the charter boat mode, 2 out of the 65 (3.1%) Massachusetts intercepted recreational BFT landings were by out-of-state or non-permitted captains.

Table 12. Numbers used in the calculation of an RBLT expanded BFT landings estimate by permit category.

HMS permit category	Total 2012 Massachusetts permitted vessels	Estimated number of 2012 vessels used to fish for recreational BFT	RBLT participant BFT reporting rate	Reporting rate X estimated vessels	RBLT expanded BFT landings estimate
Angling	3,311	3,122.4	0.146	455.9	455.9
Charter/ headboat	859[a]	706.9	0.648	458.1	596.1[b]

[a] Three outlier vessels subtracted from total number of 2012 permits.
[b] Includes 148 fish reported by three outlier vessels.

Table 13 compares LPS adjusted estimates, RBLT expanded estimates, and ALRS counts for recreational BFT landed in Massachusetts from July 1 through October 31, 2012 by Massachusetts HMS permit holders. Overall, the RBLT estimate was 54% less than the LPS estimate. The private boat (Angling) component accounted for most of this difference with the RBLT Angling estimate being 70% lower than the LPS private boat estimate. For the charter boat mode, the RBLT expanded estimate was much closer to the LPS adjusted estimate (21.5% lower), a difference that would not be considered statistically significant ($\alpha = 0.05$) when LPS variances are taken into account. In both modes, RBLT expanded estimates were still notably closer to the LPS estimates as compared to the straight ALRS counts.

Table 13. Comparison of LPS adjusted estimates, RBLT expanded estimates, and ALRS counts for recreational BFT landed in Massachusetts from July 1 through October 31, 2012 by Massachusetts HMS permit holders.

Source	Private (Angling permit)	Charter (Charter/HB permit)	Total
LPS Adjusted Estimate	1,523	760	2,283
ALRS Count	245	350	595
RBLT Expanded Estimate	456	596	1,052

DISCUSSION

Effect of Pilot Participation on Bluefin Tuna Reporting

As with any fishery dependent data collection program, the success of the RBLT was largely dependent upon the cooperation and support of the fishing industry. The relatively high recruitment rate (87%) for the voluntary pilot indicated a general willingness on the part of Massachusetts' recreational BFT captains and anglers to help improve the existing data collection program. Feedback received from fishery participants at outreach events and through informal phone calls and E-mail exchanges was also generally positive. The high recruitment rate supported the notion that, with the exception of the pre-selected "Highliners," participants recruited into the RBLT pilot were fairly representative of the Massachusetts recreational BFT fishery as a whole. Since only about 10% of all Massachusetts HMS Charter/headboat and Angling permit holders participated in the pilot, representativeness was important to be able to generalize pilot findings to the entire state, and possibly to other states. By contrast, had it been more difficult to recruit permit holders into the pilot one could claim that participants were self-recruited based on particular shared characteristics (e.g. catch success, compliance rates) and therefore not representative of the fishery.

Results suggest that the overall project goal of improving compliance with the current reporting system for recreational BFT landings was achieved. RBLT participants had higher reporting rates than non-RBLT permit holders in both the Angling and Charter/headboat categories. The relatively large reporting rate differences held even after removing the pre-selected RBLT "Highliners" from the comparison. Interestingly, when considering only permit holders who reported at least one BFT (i.e., exclude zero's), RBLT participant reporting rates were much closer to non-RBLT permit holders (non-RBLT Angling rates were actually higher than RBLT amongst those who reported at least once). Thus, the main driver in the overall reporting rate difference was that a higher percent of RBLT participants reported at least once compared to non-RBLT (9.4% versus 3.0% Angling; 20.9% versus 5.0% Charter/headboat – without RBLT Highliners). Results also suggest that the RBLT pilot may have even reduced non-compliance rates for some presumably chronic non-compliant permit holders who had been in the fishery many years without ever reporting a BFT to the ALRS prior to 2012. Although considered voluntary for purposes of the pilot, if the RBLT is fully implemented as a mandatory program, the increased enforceability of the landings tag requirement will likely further improve compliance beyond what was found in the pilot study.

The positive impact of the pilot on compliance rates was also supported by directly matching individual fish from the Large Pelagics Survey dockside sampling programs to the ALRS database. While sampled fish from RBLT participants matched at a much higher rate than non-participant fish, still only about one-half of RBLT participants' fish sampled by the LPS matched to a report in ALRS. LPS-ALRS match rates may not accurately reflect compliance intentions since being interviewed at the dock by an LPS sampler is not likely an independent event from reporting to ALRS. Anecdotal information, based on the reporting behavior of particular participants and from survey comments, suggests that at least some permit holders erroneously believed that reporting fish through the LPS satisfied the mandatory ALRS reporting requirement, and that reporting to both would result in double counting. This misperception should be addressed in future outreach messages regarding the BFT mandatory reporting requirement. LPS dockside samplers can also be instructed to remind permit holders that they still need to report their fish even though they were selected for the survey. During the RBLT pilot period, LPS samplers

were specifically instructed not to remind permit holders to report, for purposes of testing the effect of participating in the pilot on compliance.

As part of the RBLT pilot design, an attempt was made to recruit all recreational BFT anglers and captains from one particular marina (Green Harbor Marina) in order to test the effect of fishermen interactions on the dock on reporting rates (e.g., peer pressure, visual and verbal reminders). However, since only 15 out of 61 permit holders on the Green Harbor list were actually recruited into the RBLT, this proportion (25%) was considered too small to adequately test the effect of interactions since the majority were not participating in the program.

Although RBLT expanded BFT landings estimates were somewhat lower than the adjusted LPS estimates, they were still considerably larger (43%) compared to ALRS. The gap between RBLT expanded and LPS adjusted estimates was primarily due to the Angling category or LPS private boat mode. Targeted outreach for the pilot program was more directed at charter boat captains than private boat anglers. If the RBLT is continued in Massachusetts, more effort should be made to reach out to private boat anglers prior to implementation. Outreach activities aimed at this sector of the fishery could include presentations at angler club meetings and booths at popular sportfishing shows or related events. Social media tools (e.g., chat boards, Facebook, twitter) should also be considered to reach a more diffuse, and perhaps less engaged, segment of the fishery that may not regularly attend fishing related events.

Pilot Design Feasibility and Considerations for Future Implementation

In terms of feasibility, implementation of the RBLT pilot design was reasonably successful and with specific modifications (discussed in detail below) could be fully implemented to replace the existing recreational BFT mandatory reporting system in Massachusetts. The main difference between the RBLT pilot design and the existing program was the use of a landings tag. Only a fraction of the 2,615 tags initially distributed to RBLT participants were actually placed on a BFT. The cost of the tags plus the administrative costs of mailing and tracking this large volume of tags was high for the 416 pilot participants and would be significantly greater if fully implemented for over 4,000 permit holders state-wide.

Tag stations were rarely used for replenishment tags in the pilot because the initial number of mailed tags was more than enough for most RBLT participants. If the RBLT is fully implemented in Massachusetts it would be more cost efficient to reduce the initial tag allotment and rely more on tag stations for distributing tags. Marina operators and tackle shop owners were very receptive to serving as RBLT tag stations and, of those approached, only one establishment refused to participate in the pilot. Based on vessel reporting frequency distributions, two landings tags would have been enough for an entire season for over 80% of all Angling category vessels that landed at least one fish. Similarly, six landings tags would suffice for over 80% of all charter boats that landed at least one fish. For future implementation, the number of tags initially mailed could be varied somewhat with changes in recreational BFT retention limits.

The mailing of initial tag kits will need to be linked to the HMS permit purchasing system to facilitate permit holders receiving their tags shortly after they purchase their permit. Permit holders who wait until the last minute (i.e., the day before or day of the first HMS fishing trip) to purchase their permit will need a faster way to get BFT landings tags than waiting for the mail delivery. One option available to them would be to visit the nearest official RBLT tag station and present a valid HMS permit in exchange for landings tags. Another option that could be explored is to offer different delivery options

for the initial tag kit mailing with a shipping upcharge added to the transaction cost for "overnight" or "next day" delivery.

Accounting for all RBLT tags distributed proved to be more difficult than anticipated, even for the relatively small sub-sample of permit holders participating in the pilot program. Even after the follow-up mailing, which included a second postage-paid tag return envelope, 72% of RBLT participants still had unaccounted for tags (i.e. tags that were neither reported used nor returned as unused). Although the follow-up phone calls proved to be somewhat effective, by the end of the study nearly one-third of participants still had not returned their unused tags. If implemented state-wide with several thousand HMS permit holders, tracking and accounting for all tags distributed will be administratively costly and time consuming. Reducing the initial number of tags distributed by mail (e.g. 2 for Angling and 6 for Charter/headboat) should help as there will be fewer unused tags at the end of the season. However, to achieve full (or near-full) accounting of all tags, a significant investment of resources for follow-up contacts will still be needed. The project team discussed the idea of requiring that unused tags be returned before a permit holder could renew their permit for the following year. However, this approach would still require considerable administrative costs, may be difficult to enforce, and ultimately may not result in the timely return of tags at the end of the season since permit holders could wait until they are ready to renew the following year. In addition, roughly one-third of HMS permits are not renewed each year so for these permit holders the incentive to return unused tags in order to renew their permit would not be a factor.

For the most part, participants understood how the program worked and found the RBLT instructions easy to follow. There was some initial confusion over the term "tag" as some participants thought they were recruited for a tag-and-release program. Although the project team made a point of calling it a "landings tag" in the program name (RBLT) and on all outreach materials, some participants were still confused. If fully implemented, this should either be further clarified or a different term should be used instead of "tag" (e.g. tail wraps). A few participants commented that they did not understand the purpose of the landings tag since they cut it off and threw it away at the dock. The role of the landings tag in terms of enforceability at the dock should be more obvious if the program becomes mandatory. There were also anecdotal reports of rumors that the RBLT was a pre-cursor for an individual quota system for recreational BFT.

Administration of the E-mail survey (sent prior to RBLT implementation) using Survey Monkey proved to be both a cost effective and timely method for obtaining information from a large number of HMS permit holders. The overall response rate obtained in this study (38%) was considered decent for an E-mail survey and could very likely have been improved with additional E-mails requesting participation. In general, E-mail surveys may have wider applicability for canvassing permit holder's attitudes, opinions, and preferences on a range of fishery management topics including proposed regulations, reporting requirements, or permitting structure. However, it is likely that a non-response follow-up study would be needed to determine whether or not responses to such an E-mail survey are representative of permit holders as a whole.

Responses to the E-mail survey indicated that for many anglers and captains noncompliance was due more to a lack of awareness of the reporting requirement rather than a conscious or premeditated decision not to report. The project objective of increasing awareness of both the reporting requirement and of the importance of reporting recreationally landed BFT likely had a positive effect on compliance rates. Periodic E-mail reminders sent to HMS permit holders throughout the BFT season could be a cost-efficient way to improve compliance rates. The requirement to report could also be more prominently

advertised on Massachusetts DMF and NOAA Fisheries web sites, including the Permit Shop site where HMS permits are sold. The reporting requirement could appear as a "pop-up" for anyone purchasing an HMS Angling or Charter/headboat permit with a "user agreement" box that must be clicked before the permit can be processed. As an additional reminder the reporting requirement can be printed directly on the permit itself. Printed program outreach materials, such as laminated posters and flyers, should be prominently displayed at marinas, tackle shops, fishing clubs and other locations frequently by BFT anglers and captains. If the RBLT is fully implemented, compliance rates should improve over time as more permit holders become aware of the reporting requirement.

Another commonly cited reason from the E-mail survey for not reporting recreational BFT in the past was that the respondent simply forgot to report. Although it is virtually impossible to enforce, under the current reporting requirement permit holders are allowed up to 24 hours after landing a recreational BFT to submit their report. Several respondents indicated that they intended to report but by the time they got home they were too tired and then forgot to report the next day. One of the purposes of the landings tag in the RBLT pilot was to serve as a visual reminder to anglers and captains that every landed BFT must be reported. The reporting information (either reporting phone number or Web site) printed on each tag was intended to encourage permit holders to report before they had a chance to forget, either at sea when the tag is placed on the fish (if possible) or immediately upon returning to the dock.

Another theme in the E-mail survey comments was that many captains found the current phone and Internet reporting systems difficult to navigate and time consuming. Although several other reporting options were evaluated and discussed in designing the RBLT, the project team ultimately decided to use the same telephone and Internet options available for the ALRS. This decision was based largely on the fact that RBLT participants were not exempt from the mandatory ALRS requirement, and would therefore be asked to report the same fish twice if a different reporting option was used for the pilot. This is a common dilemma when pilot testing improvements to an existing mandatory reporting system. If the pilot design is adopted to replace the existing system, new and improved reporting options could be implemented at that time. Based on responses to both the E-mail survey and the follow-up phone survey, if made available, a Smartphone application ("app") would likely be used as the preferred reporting method by many BFT anglers and captains. A well-designed, intuitive app would provide permit holders with greater incentive and ability to report their fish quickly, either at sea or on the dock, rather than risk forgetting to report when they get home or the next day. If possible, the system should allow for entry of data even when not in cell phone range and have the information transmitted automatically once cell phone coverage is obtained. The RBLT app would serve to supplement rather than replace existing ALRS telephone and online reporting options since not every permit holder can be expected to have a compatible Smartphone. It is also recommended that a mobile version of the online reporting option be created for use with mobile devices.

Another recommended change to the current reporting system is to limit the number of mandatory questions to only the minimum data elements needed for estimating BFT landings by size class. This would substantially reduce the amount of time it takes to submit a BFT landings report regardless of which reporting option (i.e. Smartphone app, call-in, or online) is used. If reporting electronically, much of the basic information (vessel name, permit number, captain name, and date) could be automatically pre-populated so the permit holder would only need to key enter the tag number, fish size and possibly tournament name to satisfy the minimum requirement. Additional information that may be useful but not as high a priority for management as landings counts (e.g., fishing technique, bait type, hook type, fight time, depart time, return time, port, and fish released) could be entered through an "optional" portal. Whatever system is developed, it should include a feature whereby permit holders can access to

their own reporting history and download information on their past fishing activity (graphs/tables) directly from the reporting site. The individual reports would be kept strictly confidential and only viewable by the permit holder who entered them. As an added feature, the system could also provide summary level information that could not be linked to a particular permit holder.

To reduce noncompliance due to "forgetfulness", anglers and captains should be strongly encouraged to report their fish as soon as possible - either at sea or when they return to the dock. The addition of mobile reporting options such as Smartphone apps and a mobile online Website should help reduce the time elapsed between the catch event and reporting. Survey results suggest that the majority of HMS permit holders are already capable of electronically reporting at the dock prior to removing their fish from the vessel. As the capability to report at the dock increases over time it may be worth considering making this a program requirement, thus eliminating the current 24-hour reporting window from time of landing. This change would strengthen the nexus between attaching the landings tag and reporting the fish, and would likely result in a positive impact on compliance with the reporting requirement.

RECOMMENDATIONS

Based on results of this pilot study, the project team recommends that the RBLT design be further pilot tested in Massachusetts with the proposed design modifications as indicated below. As noted, some of these changes may require additional testing prior to implementation. Also, as a collaborative effort, the details regarding RBLT program roles, responsibilities, and resource commitments will need to be worked out among the various entities involved including the NOAA Fisheries Offices of Science & Technology and Sustainable Fisheries, Massachusetts DMF, federal contractors, and tag station representatives from marinas and tackles shops.

Mandatory Reporting Requirement

- Reporting of recreational BFT landed in Massachusetts through the RBLT reporting program should be mandatory and replace the current ALRS.
- NOAA Fisheries should review the current regulations regarding mandatory reporting of recreationally landed BFT to assure that the proposed RBLT program is covered under the existing law.
- To encourage compliance, NOAA Fisheries and the Commonwealth of Massachusetts should work together under the existing Joint Enforcement Agreement to increase enforcement presence at locations where recreational BFT are landed.
- Massachusetts DMF should consider passing a compatible state regulation for the mandatory reporting of recreational BFT landings through the RBLT program.

Proposed Reporting System

- Limit the number of mandatory questions to only collect the minimum data elements needed for estimating BFT landings by size class.
- Develop and test Smartphone applications or “apps” for both the Droid and IPhone platforms as a reporting option for the RBLT program to supplement the existing phone and online options.
- Create a mobile version of the web site used to report recreational BFT online.

Tag Distribution and Tracking

- Mail initial tag kits to permit holders immediately after the HMS permit is purchased.
- Official RBLT tag stations will provide BFT tags to any permit holder with a valid Massachusetts HMS Angling or Charter/headboat permit.
- Reduce the number of RBLT tags initially mailed to permit holders (possibly 2 tags for Angling and 6 tags for Charter/headboat per year).
- Increase the number of tag stations to cover as many access sites where recreational BFT are landed in Massachusetts as possible.
- Considering the inherent difficulties and anticipated costs associated, tracking and fully accounting for all tags distributed should not be a goal of the modified RBLT design if implemented throughout Massachusetts. Permit holders should still be reminded and encouraged to return any unused tags to their nearest tag station through periodic E-mails or text messages.

- At the end of the BFT season, conduct a survey with a randomly selected sample of RBLT permit holders (by category) to validate reported landings, determine the final disposition of any unaccounted for tags, and estimate the frequency of unreported landings.

Outreach and Education

A significant investment in educational outreach is recommended to increase awareness and promote the new data collection program. The outreach campaign should:

- Use different media channels including printed materials (i.e., flyers, laminated posters) displayed prominently at marinas and tackle shops, state and federal agency web sites, routine E-mail and text message program reminders, and electronic newsletters.
- Consider making E-mail address a required field for purchasing an HMS permit as this is an effective and inexpensive way to communicate with permit holders about the RBLT program.
- Target both private boat anglers and charter boat captains who fish for recreational BFT. Different messaging and communication channels may be needed to effectively reach these two sectors of the recreational fishery.
- Clarify how the RBLT plastic tags are to be used and clearly distinguish the RBLT use of the term "tag" (i.e. landings tag) from "tagging" programs that involve the live release of tagged fish. If confusion persists, consider using a different term for the plastic cargo seals placed on landed fish that does not include the word "tag" (e.g., "tail wrap").
- Encourage anglers and captains to report recreational BFT they plan to keep as soon as possible after the catch – preferably at sea or, if not possible, immediately upon returning to the dock.
- Emphasize that being intercepted by an LPS or MRIP sampler does not replace the mandatory RBLT reporting requirement and that fish reported to both programs will not be double counted for quota monitoring or assessment purposes.
- Increase angler and captain understanding of how the information they provide will be used and of the general importance of collecting accurate and complete recreational BFT data for fishery assessment and management.
- Elements of the RBLT outreach campaign aimed at increasing awareness of the bluefin tuna reporting requirement could also be implemented outside of Massachusetts where the ALRS will still be in effect. This could serve at a test of the effectiveness of educational outreach on recreational bluefin tuna reporting compliance rates.

With these recommended design changes the project team anticipates that RBLT compliance rates will improve markedly, and over time should be similar to estimated compliance with the Maryland HMS catch card program (i.e., 80-85%). If not, continuation of the program should be reevaluated based on the decreased management utility of the information due to noncompliance. As with any long-term data collection program, the ultimate decision to continue funding the RBLT should involve a thorough cost-benefit trade-off analysis. This decision should be based on many inter-related factors including management's utility/need for the information, statutory requirements to collect the information, the value of the fishery and added value the program may provide, available funding levels, and other funding priorities.

Appendix A. Email message to HMS permit holders for online informational survey.

To: ron.salz@noaa.gov

From: "ron.salz@noaa.gov via surveymonkey.com"

Subject: Recreational Bluefin Tuna Survey

Body: Dear Ron Salz,

NOAA Fisheries is responsible for managing U.S. marine resources including Highly Migratory Species (HMS) such as tunas, billfish, swordfish, and sharks. Accurate catch information provided by anglers and captains is vital for fisheries management to provide quality fishing opportunities and for the long-term health of marine fish stocks. NOAA Fisheries requires HMS permit holders to report all recreationally landed Atlantic bluefin tuna. Currently, bluefin tuna landed in Massachusetts can be reported either online or by telephone. NOAA Fisheries is in the process of evaluating ways to improve the recreational bluefin tuna reporting system.

You have been selected to participate in a short survey regarding reporting recreationally landed bluefin tuna. Your name and Email address were obtained from a list of Massachusetts HMS Angling category permit holders. The purpose of this survey is to get feedback from recreational bluefin tuna anglers and captains on the current system and options for future improvements.

This voluntary survey should take you less than 5 minutes to complete. Survey responses will remain completely anonymous and will never be linked to an individual. Your participation is greatly appreciated. Questions regarding this survey should be sent to: ron.salz@noaa.gov

Please click here to start the survey:
http://www.surveymonkey.com/s.aspx

Sincerely,

Ronald Salz
Fishery Biologist
NOAA Fisheries, Fisheries Statistics Div.
Silver Spring, MD

Click here if you do not wish to participate
http://www.surveymonkey.com/optout.aspx

Appendix B. Online informational survey regarding recreational bluefin tuna reporting.

Recreational Bluefin Reporting Options Survey - Test

Please note: Responses to this survey will remain completely anonymous and will never be linked to the respondent.

***1. Do you take fishing trips targeting recreational bluefin tuna?**

- ◯ NO
- ◯ YES

***2. Have you ever landed a recreational bluefin tuna?**

- ◯ NO
- ◯ YES

3. Do you or someone on your vessel typically have a cell phone on-board when you go fishing for bluefin tuna?

- ◯ ALWAYS
- ◯ SOMETIMES
- ◯ NEVER

4. What type of cell phone do you normally have on your vessel?

- ◯ REGULAR CELL PHONE
- ◯ SMARTPHONE (for example iPhone, Droid or similar)
- ◯ DON'T KNOW

5. Do you have cell phone coverage at the dock or launch site where you normally return from bluefin tuna fishing trips?

- ◯ ALWAYS
- ◯ OFTEN
- ◯ SOMETIMES
- ◯ RARELY
- ◯ DON'T KNOW

6. Do you have access to a landline phone (pay phone or other) at the dock or marina where you normally return from bluefin tuna fishing trips?

- ◯ NO
- ◯ YES
- ◯ DON'T KNOW

Appendix B. continued.

Recreational Bluefin Reporting Options Survey - Test

11. Have you ever landed a recreational bluefin tuna and not been able to or chosen not to report it?

- ◯ NO
- ◯ YES

If 'YES' Please candidly tell us why you could not or did not report

12. Do you participate in the voluntary Massachusetts Division of Marine Fisheries Electronic Recreational Angler Logbook program (eLogbook)?

- ◯ NO
- ◯ YES

13. Additional comments – use this space to provide us with any additional comments or suggestions you may have related to reporting of recreationally landed bluefin tuna

Thank you for participating in our survey.

"Final Report", page 40

Mon, Mar 12, 2012 at 10:59

Hello Green Harbor Tuna Club Members!

NOAA Fisheries is in the process of evaluating ways to improve the recreational bluefin tuna reporting system. In fact, most people should have received an email from NOAA Fisheries on Monday (Mar. 12th) asking for their participation in an online survey about the existing bluefin tuna reporting system.

During the April 29th GHTC General Meeting, a National Marine Fisheries Service (NMFS) liaison and a State of Massachusetts Department of Marine Fisheries (DMF) liaison will introduce a newly developed Massachusetts Bluefin Tuna Pilot Survey which is designed to improve the timeliness and accuracy of reporting for recreational landed bluefin tuna.

One of the key goals to the new Pilot Survey is to gather landings information in as close to real-time as possible so that the US Recreational Bluefin Tuna quota can be fully utilized without exceeding the yearly allocation. Timely landings information will enable NMFS to make in-season adjustments as necessary ensuring that the yearly quota is not over or under utilized.

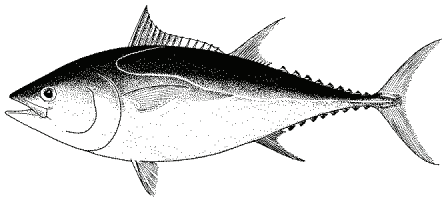
Massachusetts recreational bluefin tuna fishermen will be randomly selected to participate in the new voluntary Bluefin Tuna Pilot Survey. However, all Green Harbor Marina Recreational and Charter/Head Boat Bluefin Tuna Fishermen will be invited to participate in this voluntary Pilot Survey and we ask that everyone graciously adopt this new program. Green Harbor Marina has been selected as the first and only Marina in the state to be asked to participate exclusively in the Pilot Survey largely because the port of Green Harbor lands more recreational sized bluefin that any other port.

Further details will be presented during the April 29th GHTC General Meeting along with an opportunity to ask questions about the program.

Best Regards,
Steven James

Recreational Bluefin Landings Tag (RBLT) Pilot Program

Frequently Asked Questions



What is the purpose of the RBLT pilot program?

The goal of the RBLT is to improve the accuracy and timeliness of recreational bluefin tuna landings information in the Commonwealth of Massachusetts. Such information is critically important to fishery managers for making informed and timely decisions that may result in enhanced fishing opportunities as well as long-term benefits for the bluefin tuna resource.

How do I report a recreationally landed bluefin tuna?

Pilot participants report landed bluefin tuna either via the internet (**hmspermits.gov**) or by phone (**1-888-USA-TUNA)**. In addition to the other required information (date, size, location, etc.), pilot participants will be asked to provide the unique **landings tag ID number** with their report.

How long do I have to report a landed recreational bluefin tuna?

You have 24 hours from the time your vessel lands *(i.e.* fish brought back to dock) to report a bluefin.

How many tags will I get?

HMS Angling permit holders participating in the RBLT will initially receive **5 tags**. HMS Charter/Headboat permit holders participating in the pilot will receive **10 tags**. Tags will arrive in a plastic pouch that should be retained as proof of pilot participation for receiving additional tags.

When do I use a tag?

RBLT participants must secure the tag **at sea immediately upon retaining** a recreational bluefin tuna. Tags are only to be used on bluefin tuna that are retained. **Released bluefin tuna DO NOT get a landings tag**. The RBLT is counting fish brought back to the dock, not those being caught and released.

Where do I secure the tag to the bluefin tuna?

The preferred location is around the base of the tail. If it is not possible to secure the tag around the tail, it must be fastened securely to the fish in some other location. Alternative attachment locations include through a slit in the skin of the tail or through the lower jaw.

When can the tag be removed from the bluefin tuna?

The tag must remain secured to the fish until the vessel returns to the dock and the tail is removed. Tags must only be used once, so please dispose of properly once removed.

What do I do with unused tags?

RBLT participants must return all their unused tags when they have finished bluefin tuna fishing for the season or **no later than December 1, 2012**. Unused tags should be placed in the postage pre-paid envelop provided with the tags and returned either to a Tag Distribution Station or placed in the mail.

Can I give my tags to someone else to use?

No, each RBLT tag provided to you has a unique ID number and is explicitly assigned to your vessel only.

How do I get more tags?

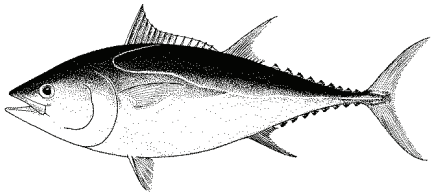
Additional tags will be available to pilot participants at no charge from various Tag Distribution Stations throughout the Commonwealth (a list will be provided in the initial tag kit). Five additional tags will be provided per day per request. To receive additional tags you will need to show a picture ID and your tag pouch as proof of participation in the RBLT.

More Information

If you have additional questions or would like to receive more information about the Recreational Bluefin Landings Tag pilot program, please contact: Ron Salz, NOAA Fisheries at **ron.salz@noaa.gov** or John Chisholm, Massachusetts Division of Marine Fisheries at **john.chisholm@state.ma.us**

Funding for this pilot program is provided by the U.S. Department of Commerce, NOAA Fisheries, Marine Recreational Information Program (MRIP).

Recreational Bluefin Landings Tag (RBLT) Pilot Program



The goal of the RBLT is to improve the accuracy and timeliness of recreational bluefin tuna landings information in the Commonwealth of Massachusetts. Such information is critically important to fishery managers for making informed and timely decisions that may result in enhanced fishing opportunities as well as long-term benefits for the bluefin tuna resource.

Instructions for Participants

Your involvement in the RBLT pilot program is easy.
As a participant, simply follow these 3 steps:

1) **Tag bluefin you plan to keep immediately at sea.**

2) **Report kept bluefin: 1-888-USA-TUNA or www.hmspermits.gov. Include your HMS permit number and tag identification number in your report.**

3) **Return unused landings tags before December 1st 2012.**

Additional tags: Bring your **red tag kit pouch** to any of the locations below to get more tags during the season.

Area	Tag Station	Address	City	Telephone
North Shore	Fisherman's Outfitter	20 Main Street	Gloucester	(978) 281-0858
	First Light Anglers	21 Main Street	Rowley	(978) 948-7004
	Newburyport Harbor Marina	51 Water St	Newburyport	(978) 462-3990
	Bridge Road Bait & Tackle	134 Bridge Road	Salisbury	(978) 465-3221
South Shore	Fishermen's Outfitter	26 Union St.	Plymouth	(508) 747-7440
	Duxbury Bait & Tackle	433 Washington St.	Duxbury	(781) 934-0242
	Green Harbor Bait & Tackle	239 Dyke Road	Marshfield	(781) 834-3474
	Belsan's Bait & Tackle	38 Country Way	Scituate	(781) 545-9400
	Monahan's Marine	396 Washington St	Weymouth	(781) 335-2746
South Coast	Red Top	265 Main Street	Bourne	(508) 759-3371
	CMS Enterprises	255 Pope's Island	New Bedford	(508) 995-2372
	Westport Bait & Tackle	1111 Main Road	Westport	(508) 636-8100
Cape Cod	Cape Fisherman's Supply	67 Depot Road	Chatham	(800) 588-8650
	Falmouth Bait & Tackle	258 Teaticket Hwy.	Falmouth	(508) 457-0700
	Powder Horn	210 Barnstable Road	Hyannis	(508) 775-8975
	The Hook-Up	85 Lowell Road	Orleans	(508) 240-0778
	Nelson's Bait & Tackle	43 Race Point Road	Provincetown	(508) 487-0034
Islands	Nantucket Tackle Center	41 Sparks Avenue	Nantucket	(508) 228-4081
	Larry's Tackle Shop, MV	258 Upper Main St	Edgartown	(508) 627-5088

Questions:

If you have questions about the RBLT pilot program please contact:
Ron Salz, NOAA Fisheries: **Ron.Salz@noaa.gov, (301) 427-8171** or
John Chisholm, MA Div. Marine Fisheries: **John.Chisholm@state.ma.us, (508) 910-6329**

Funding for this pilot program is provided by the U.S. Department of Commerce, NOAA Fisheries, Marine Recreational Information Program (MRIP). To learn more about MRIP please visit www.countmyfish.noaa.gov

Appendix F. Tag station cooperative agreement form.

2012 Cooperative Agreement to Act as a Recreational Atlantic Bluefin Tuna Tag Distribution/Return Station Between NOAA Fisheries

&

_____

The signatory operates this facility as a place of business open to the public with regular posted operating hours and will act as a tag distribution and tag return station for recreationally harvested Atlantic Bluefin Tuna landed in the State of Massachusetts in accordance with the following procedures and conditions:

1. Each tag station will receive bluefin tuna tag kits from Massachusetts Division of Marine Fisheries personnel.
2. Tag kits will include 1) five bluefin tuna tags with unique ID numbers, 2) angler/captain information card with five pre-printed ID numbers corresponding to the five tags in kit, 3) educational materials for the permit holder, and 4) postage paid envelope for returning unused tags. All items will be inside the postage paid return envelope.
3. Each tag station will be responsible for keeping tag kits in a secure location and will only distribute tag kits according to the procedures described below.
4. The tag station employee, listed below as responsible for issuing/collecting tags, will need to verify that the person requesting tags is a participant in the pilot study. One form of proof of participation is the customized plastic tag pouch mailed to participants at the start of the study. If the tag requestor cannot provide the tag pouch, the tag station employee will ask for a driver's license and check the name against a list of pilot participants provided by Massachusetts Division of Marine Fisheries. Tags should only be given to people who either have a program tag pouch or are on the participant list.
5. Once the tag requestor has been verified as a participant in the pilot, the tag station employee will do the following: 1) Remove the angler/captain information card from the kit and hand it to angler/captain, 2) Ask them to write in their full name, name on HMS permit they fish under (if different), vessel name, and phone number, 3) When they return the card, check that all fields have been completely entered and ask for a valid driver's license to confirm the name, 4) If all information is provided and name matches the driver's license, file information card in a secure location and hand angler/captain the tag kit.
6. The signatory, representing the reporting station, must account for all tags distributed. That is, an angler/captain information card must be collected (and secured in a safe place) for each tag kit distributed.
7. Only one tag kit should be provided to a particular permit holder per day.
8. The tag station will accept unused tags back from anglers/captains. Unused tags must also be kept in a secure location. Returned unused tags should never be re-distributed to another angler/captain. Tag stations should not accept used tags.
9. Upon request, tag station employees will give authorized Massachusetts Division of Marine Fisheries personnel the completed angler/captain information cards and any unused tags returned to the tag station.

Physical location address: _____
Business mailing address: _____
Telephone number: _____
Hours of operation: _____
Owner/Manager name: _____
Contact person: _____
Person(s) responsible for issuing/collecting tags: _____

*** NOAA Fisheries reserves the right to terminate tag station status for any reason including but not limited to failure to follow procedures above for distributing and tracking tags and/or failure to cooperate with NOAA Fisheries personnel, Contractors, or Massachusetts Division of Marine Fisheries personnel in retrieval of said items.**
Authorized signature:_____ **Date:** _____
Title:_____

Appendix G. Recreational Bluefin Landings Tag pilot program recruitment questionnaire.

Recreational Bluefin Landings Tag (RBLT) Pilot Program
DRAFT Telephone Recruitment Questionnaire

Intro1. Hello, my name is <INTERVIEWER FIRST AND LAST NAME>. I'm calling on behalf of the Massachusetts Division of Marine Fisheries and NOAA Fisheries. May I please speak with <INSERT FIRSTNAME LASTNAME FROM SAMPLE>?

[IF ASKED: This call should only take about 5 minutes of your time.]

01 Yes, speaking to permit holder
02 Transferring to permit holder
03 Permit holder not available
99 TERMINATE

//IF Intro1=03//

S1a. Will <INSERT FIRSTNAME LASTNAME FROM SAMPLE> be available within the next few days?

01 Yes → schedule callback
02 No
99 TERMINATE

//IF Intro1=02//

Intro2. Hello, my name is <INTERVIEWER FIRST AND LAST NAME>. I'm calling on behalf of the Massachusetts Division of Marine Fisheries and NOAA Fisheries.

[IF ASKED: This call should only take about 5 minutes of your time.]

01 Continue
99 TERMINATE

//IF Intro1=01 or Intro2=01 AND VSLNAME IS NOT BLANK OR MISSING//

S2. Are you still the captain, owner or designated representative of the <INSERT VSLNAME>?

01 Yes
02 No
99 REFUSED

//IF Intro1=01 or Intro2=01 AND VSLNAME IS BLANK OR MISSING//

S2a. Are you still the captain, owner or designated representative of a highly migratory species <INSERT CATEGORY> permitted vessel?

01 Yes
02 No
99 REFUSED

//IF S2a=01//

S2b. What is the name of this vessel?

01 NAME GIVEN
02 NO NAME FOR VESSEL
97 DON'T KNOW
99 REFUSED

Appendix G. continued

//IF S2b=01//
S2bOTH. What is the name of this vessel? [ALLOW UP TO 100 CHARACTERS]
//IF S2=01 OR S2a=01//
S3. Do you plan to use this vessel to fish recreationally for bluefin tuna in Massachusetts in 2012?

01 Yes
02 No
97 DON'T KNOW
99 REFUSED

//IF S3=01//
S4. Everything we talk about will be confidential, although this call may be monitored and recorded for quality assurance. Your name was randomly selected to participate in the Recreational Bluefin Landings Tag Pilot Program, which is being conducted exclusively among Massachusetts Recreational and Charterboat Bluefin tuna fishermen. You were selected, in part, because you have historically held a Highly Migratory Species permit. We're calling today to recruit a limited number of anglers and captains to participate in the Recreational Bluefin Landings Tag pilot program. The goal of this new program is to improve the accuracy and timeliness of recreational bluefin tuna landings information in the Commonwealth of Massachusetts. Such information is critically important to fishery managers for making informed and timely decisions that may result in enhanced fishing opportunities as well as long-term benefits for the bluefin tuna resource. Can I quickly tell you how the program works?

01 Yes
02 No
99 REFUSED

//IF S4=02//
S4a. Is there a better time within the next day or two that I can call back to talk to you about the program?

01 Yes → schedule callback
02 Refused

//IF S4=01//
S5. Participation in the pilot program involves 3 easy steps:

1. The first step is to tag any recreational bluefin tuna you plan to keep immediately upon boating while at sea. <IF CATEGORY=ANGLING insert "5"; IF CATEGORY=CHARTER/HEADBOAT insert "10"> tags will be mailed directly to you in the next few days. During the season, additional tags will be available at designated tag stations if you use up the initial allotment.
2. The second step is to report your fish using the existing phone or internet options: that is 888-USA-TUNA or hmspermits.gov. You will need your HMS permit number and the unique number printed on the tag to be able to report.
3. The third step is to return any of your unused tags by December 1st in one of our postage-paid business reply envelopes or directly to one of the tag stations.

01 Continue
99 REFUSED

Appendix G. continued

//IF S5=01//
S6. Do you have any questions for me about the pilot program?
01 Yes
02 No
99 REFUSED
//IF S6=01//
S6a. [Interviewer: be prepared to answer all the FAQs.]
[For any question you cannot answer or are uncomfortable answering, say: I don't have the answer to that question but if you'd like I can give you the phone number for the NOAA Fisheries Office in Gloucester Massachusetts for more information. The number is 978-281-9260]
01 Continue
99 REFUSED
//IF S6=02 OR S6a=01//
S7. Are you willing to participate in the Recreational Bluefin Landings Tag pilot program?
01 Yes
02 No
03 Maybe (unsure, want to think about it, need more information)
99 REFUSED
//IF S7=03//
S7a. Do you need more time to consider our request?
01 Yes
02 No
99 REFUSED
//IF S7a=01//
S8. Ok. We will try calling you back in a couple of days, or you can reach us at <Insert 800-number here>. Please understand that because we are only recruiting a limited number of fishermen we may reach our target before we are able to get back to you.
01 Schedule callback
99 REFUSED
//IF S7a=02//
S9. Would you like to speak with someone from NOAA Fisheries who can tell you more about the project?
01 Yes
02 No
99 REFUSED
//IF S9=01 OR S9=02//
S10. IF S9=01 INSERT <The number for the office in Gloucester is 978-281-9260.> We will try calling you back in a couple of days or you can reach us at <Insert 800-number here>. Please understand that because we are only recruiting a limited number of fishermen we may reach our target before we are able to get back to you.

Appendix G. continued

01 Schedule callback
99 REFUSED

//IF S7=01//
Q1. That's great! I just have a few more questions to get you set up in the program. Please verify the following contact information we have for you: The mailing address we have for you is:
<INSERT mailing address from permit list>
billtostraddr1
billtostraddr2
billtocity
billtostate
billtozip4
Is this the best address to mail your bluefin tag kit to?

01 Yes
02 No
99 REFUSED

//IF Q1=02//
Q1a. What is the best address? (record the new address)
[INTERVIEWER: Once the address is complete read it back to the respondent and confirm it is correct. Please spell out street names to verify]
01 YES - ALL CORRECT
02 ENTER ADDRESS
03 ENTER APARTMENT NUMBER
04 ENTER CITY
05 ENTER STATE
06 ENTER ZIP CODE
99 REFUSED
//IF S7=01//

Q2. Is this phone number the best way to reach you? I have area code {restore Area Code}, {Exchange} – {Line Number}. Is this correct?

01 Yes
02 No
99 REFUSED

//IF Q2=02//
Q2a. What is the best phone number? (record the new number)
//If email address is provided on permit list//

Appendix G. continued

Q3a. The email address we have for you is (insert email address from permit list). Is this the best email address to use for you?

01 Yes
02 No
99 REFUSED

//IF Q3a=02//
Q3a1. What is the best email address? (record the new email address)
//If email address is not provided on permit list, ask Q3b//
Q3b. Do you have an email address we can contact you through?

01 Yes
02 No

//IF Q3b=01//
Email. [Enter email address and spell it back to respondent to confirm it is correct]
//IF S7=01//
Q4. About how many trips do you think you will make this year for recreational bluefin tuna in Massachusetts?

ENTER NUMBER /range 0-200,997,999/
997 DON'T KNOW
999 REFUSED

//IF Q4=0//
Q4FIX. Earlier you said that you plan to fish recreationally for bluefin tuna in Massachusetts in 2012, and now I have recorded that you are not planning any trips this year. Are you planning to fish recreationally for bluefin tuna in Massachusetts in 2012?

01 Yes
02 No
99 REFUSED

//IF Q4FIX=01//
NTRIPS. About how many trips do you think you will make this year for recreational bluefin tuna in Massachusetts?

ENTER NUMBER /range 1-200,997,999/
997 DON'T KNOW
999 REFUSED

//IF S7=01//
Q5. Please tell us the name and location of the primary Massachusetts marina or launch site you plan to use this year for recreational bluefin tuna fishing. [SINGLE RESPONSE]

01 GREEN HARBOR MARINA
02 CHATHAM MARINA
03 HEWITT COVE MARINA
04 CAPE ANN MARINA
05 MILL WHARF MARINA

Appendix G. continued

06 RYDERS COVE
07 SASQUATUCKET HARBOR
08 MARSHFIELD TOWN LANDING
09 TOWN OF PLYMOUTH
10 TAYLOR MARINE
11 OTHER (SPECIFY)
97 DON'T KNOW
99 REFUSED

//IF Q5=11//

Q5OTH. Please tell us the name and location of the primary Massachusetts marina or launch site you plan to use this year for recreational bluefin tuna fishing.

Record name [ALLOW UP TO 100 CHARACTERS]

//IF Q5<>97,99//

Q6. Please tell us the name and location of another Massachusetts marina or launch site you plan to use this year for recreational bluefin tuna fishing. //PROGRAMMER: DO NOT DISPLAY CATEGORY 01-10 IF SELECTED IN Q5//

01 GREEN HARBOR MARINA
02 CHATHAM MARINA
03 HEWITT COVE MARINA
04 CAPE ANN MARINA
05 MILL WHARF MARINA
06 RYDERS COVE
07 SASQUATUCKET HARBOR
08 MARSHFIELD TOWN LANDING
09 TOWN OF PLYMOUTH
10 TAYLOR MARINE
11 OTHER (SPECIFY)
97 DON'T KNOW
99 REFUSED

//IF Q6=01//

Q6OTH. Please tell us the name and location of another Massachusetts marina or launch site you plan to use this year for recreational bluefin tuna fishing.

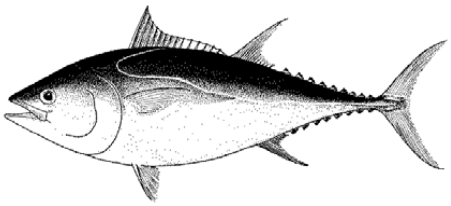
Record name [ALLOW UP TO 100 CHARACTERS]

//IF S7=01//

CLOSE. Those are all the questions I have for you today. Thank you for your time and for agreeing to participate in this important pilot program. You will be receiving your initial bluefin landings tag kit with instructions in the mail at the end of June. If you have any questions please do not hesitate to call us at <insert program phone number>. Good-bye.

OR

THANK. Thank you for your time. Those are all the questions I have for you today.



June 19, 2012

Andrew Dyer
126 College Street
Burlington, VT 05401

P12345678

Dear Andrew,

Thank you for agreeing to participate in the Recreational Bluefin Landings Tag (RBLT) Pilot Program. You are one of a select number of Massachusetts anglers and captains chosen to test this new landings tag and data collection program. Information provided by participants such as yourself will be extremely valuable for managing the bluefin tuna fishery and may result in enhanced future recreational fishing opportunities.

The following items can be found in your red tag kit pouch:

- «NUMTAG» bluefin tuna landings tags with unique ID numbers assigned explicitly to your HMS permitted vessel.
- Flyer (light blue) with program instructions, tag station locations, and contacts for additional information.
- Flyer (yellow) with RBLT Frequently Asked Questions.
- Card with your unique tag numbers to help you keep track of which tags have been put on fish and which have been reported.
- Postage paid business reply envelope to return your unused tags prior to December 1st.

To report recreational bluefin tuna that you keep, you will need your HMS permit number and the unique landings tag identification number. We suggest you write your HMS permit number in the space provided on the red tag kit pouch for easy access when reporting kept bluefin tuna. If you need additional landings tags during the season, please bring your red tag kit pouch to one of the tag stations listed on the enclosed flyer.

Please feel free to call or email me with any questions about the pilot program or suggestions you may have to improve how the program works: *301-427-8171 or Ron.Salz@noaa.gov*.

Sincerely,

Ronald Salz
Fisheries Biologist
NOAA Fisheries
Marine Recreational Information Program

Appendix I. Wallet sized card with unique tag ID numbers and reporting options.

Tag ID #	Tagged	Reported
0002501	☐	☐
0002502	☐	☐
0002503	☐	☐
0002504	☐	☐
0002505	☐	☐
0002506	☐	☐
0002507	☐	☐
0002508	☐	☐
0002509	☐	☐
0002510	☐	☐

Recreational Bluefin Landings Tag (RBLT) Pilot Program

Please report all recreational bluefin that you keep using one of the following:

Website: **www.hmspermits.gov**

Toll-free telephone: **1-888-USA-TUNA**

Recreational Bluefin Landings Tag (RBLT) Pilot Program

Information Card for Additional Tags

Tag Station Name: _____

Landings Tag Numbers:

Place sticker with 5 landings
tag identification numbers here

Recreational Bluefin Landings Tag (RBLT) Pilot Program

Information Card for Additional Tags

Tag Station Name: _____

Landings Tag Numbers:

Place sticker with 5 landings
tag identification numbers here

Recreational Bluefin Landings Tag (RBLT) Pilot Program

Information Card for Additional Tags

Tag Station Name: _____

Landings Tag Numbers:

Place sticker with 5 landings
tag identification numbers here

Recreational Bluefin Landings Tag (RBLT) Pilot Program

Information Card for Additional Tags

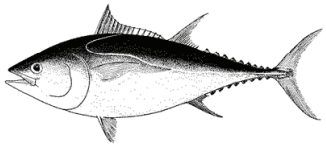
Tag Station Name: _____

Landings Tag Numbers:

Place sticker with 5 landings
tag identification numbers here

Recreational Bluefin Landings Tag (RBLT) Pilot Program

Information Card for Additional Tags



Instructions for RBLT Participants: Print your vessel name, HMS permit number, and full name below. Please sign and date this form affirming that you have received additional landings tags.

Vessel Name: _____

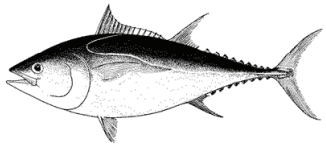
HMS Permit Number: ___ ___ ___ ___ ___ ___ ___ ___

Participant Name: _____

Participant Signature: _____ **Date** _____

Recreational Bluefin Landings Tag (RBLT) Pilot Program

Information Card for Additional Tags



Instructions for RBLT Participants: Print your vessel name, HMS permit number, and full name below. Please sign and date this form affirming that you have received additional landings tags.

Vessel Name: _____

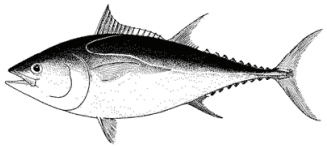
HMS Permit Number: ___ ___ ___ ___ ___ ___ ___ ___

Participant Name: _____

Participant Signature: _____ **Date** _____

Recreational Bluefin Landings Tag (RBLT) Pilot Program

Information Card for Additional Tags



Instructions for RBLT Participants: Print your vessel name, HMS permit number, and full name below. Please sign and date this form affirming that you have received additional landings tags.

Vessel Name: _____

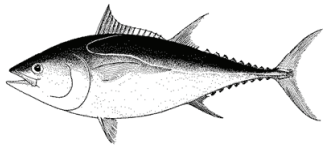
HMS Permit Number: ___ ___ ___ ___ ___ ___ ___ ___

Participant Name: _____

Participant Signature: _____ **Date** _____

Recreational Bluefin Landings Tag (RBLT) Pilot Program

Information Card for Additional Tags



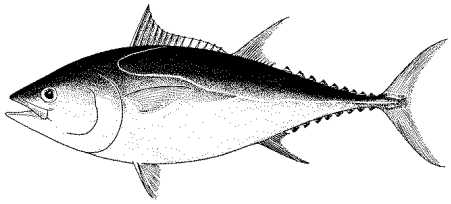
Instructions for RBLT Participants: Print your vessel name, HMS permit number, and full name below. Please sign and date this form affirming that you have received additional landings tags.

Vessel Name: _____

HMS Permit Number: ___ ___ ___ ___ ___ ___ ___ ___

Participant Name: _____

Participant Signature: _____ **Date** _____



October 31, 2012

Andrew Dyer
126 College Street
Burlington, VT 05401

Dear Andrew,

Thank you for being part of the Recreational Bluefin Landings Tag (RBLT) Pilot Program. By participating in this program you have helped us test and evaluate this new data collection approach for bluefin tuna. Improving the quality and timeliness of bluefin tuna information is extremely important for managing this fishery and may result in enhanced future recreational fishing opportunities.

A key feature of the pilot program is a full accounting of all RBLT tags distributed. If you have not already done so, **please locate all of your unused bluefin tags and return them to us in the enclosed postage-paid envelope.**

Feel free to call or email me with any questions about the pilot program or suggestions you may have to improve how the program works: *301-427-8171 or Ron.Salz@noaa.gov*.

Sincerely,

Ronald Salz
Fisheries Biologist
NOAA Fisheries
Marine Recreational Information Program

Appendix L. RBLT follow-up phone call reminder questionnaire.

Recreational Bluefin Landings Tag (RBLT) Pilot Program
Follow-Up Call Script

Intro1. Hello, my name is <INTERVIEWER FIRST AND LAST NAME>. I'm calling on behalf of the Massachusetts Division of Marine Fisheries and NOAA Fisheries. May I please speak with <INSERT FIRSTNAME LASTNAME FROM RBLT PARTICIPANT LIST>?

[IF ASKED: This call should only take about 5 minutes of your time.]

01 Yes, speaking to RBLT participant
02 Transferring to RBLT participant
03 RBLT participant not available
99 TERMINATE

//IF Intro1=03//

S1a. Will <INSERT FIRSTNAME LASTNAME FROM RBLT PARTICIPANT LIST> be available within the next few days?

01 Yes → schedule callback
02 No /TERM ASSIGN DISP 026/
99 TERMINATE

//IF Intro1=02//

Intro2. Hello, my name is <INTERVIEWER FIRST AND LAST NAME>. I'm calling on behalf of the Massachusetts Division of Marine Fisheries and NOAA Fisheries.

01 Continue

02 TERMINATE

//IF Intro1=01 OR Intro2=01

Intro3. Firstly, we'd like to thank you for participating in the Recreational Bluefin Landings Tag or RBLT pilot program. You have helped us greatly to test and evaluate this new data collection program for bluefin tuna. Improving the quality and timeliness of bluefin tuna information is extremely important for managing this fishery and may result in enhanced future recreational fishing opportunities.

An important feature of the RBLT is the full accounting of all Bluefin tags distributed. I have just a few questions for you regarding the tags we sent you. Everything we talk about will be confidential, although this call may be monitored and recorded for quality assurance.

[IF ASKED: This call should only take about 5 minutes of your time.]

01 Continue
99 TERMINATE

Appendix L. continued

TAG ACCOUNTING SECTION

Note: Only 2 participants got replenishment tags from a tag station. These will be treated differently (possibly called by a project team member)

//IF Intro3=01//.

Q1. Our records show that we mailed you <insert number of tags mailed initially> yellow RBLT tags in late June. Did you receive all of these tags?

01 Yes;
02 No, I received a different amount of tags
03 No, I did not receive any RBLT tags
97 Don't Know
99 Refused

//IF Q1=02//

Q1a. How many tags did you receive?

Enter number range /1-15/
97 Don't Know
99 Refused

//IF Q1=01 OR Q1a=1-97 //

Q2. "Our records also show that you reported landing <insert number of RBLT tags reported> RBLT tagged recreational Bluefin tuna on the <insert participant's vessel name> this year"

Is this correct?

01 Yes
02 No
97 Don't Know
99 Refused

//IF Q2=02//

Q2a. How many RBLT tagged Bluefin landings aboard the <insert participant's vessel name> did you report this year?

Enter number /range 0-96/
97 Don't Know
99 Refused

//IF Q2=01-97//

Q3. In order for us to accurately assess recreational Bluefin tuna landings it is important that we account for all RBLT tags distributed.

Do you still have any unused RBLT tags in your possession?

01 Yes
02 No
03 Yes, respondent knows where all tags are but tags are inaccessible (e.g. on boat which is in storage etc.) and cannot be recovered.
97 Don't Know
99 Refused

//IF Q3=02//

Q4. Have you already mailed <u>all</u> of your unused RBLT tags back to us?

01 Yes

Appendix L. continued

02 No
97 Don't Know
99 Refused

//IF Q3=01,97//

Q5. If you still have RBLT tags we ask that you return them to us at this time. A reminder notice with a postage-paid envelop for returning your tags was mailed to you a few weeks ago. Did you receive this reminder notice and tag return envelope?

01 Yes;
02 No;
97 Don't Know
99 Refused

//IF Q5=01//

Q5a. Do you still have the tag return envelope?

01 Yes;
02 No;
97 Don't Know
99 Refused

//IF Q5=02-97, OR Q5a=02-97//

Q5b. Would you like us to send you another envelop to return your tags in?

01 Yes;
02 No;

//IF Q5b=01//

Q5D_2:

I have your mailing address listed as:

Street Address

City

State

Zip

Is that correct?

[SELECT ALL THAT APPLY]
01 ALL CORRECT
04 CORRECT ADDRESS
05 CORRECT CITY
06 CORRECT STATE
07 CORRECT ZIP CODE

//IF Q5D_2 = 04

N_PRMADD: [IF NEEDED: What is your street address.]

//IF Q5D_2 = 05

N_CITY: [IF NEEDED: What is your city.]

//IF Q5D_2 = 06

N_STATE: [IF NEEDED: What is your state.]

//IF Q5D_2 = 07

Appendix L. continued

N_ZIP: [IF NEEDED: What is your zip code.]

//IF Q3=02 AND Q4=02//

Q6. Did you lose or throw away any RBLT tags?

01 Yes;
02 No;
97 Don't Know
99 Refused

//IF Q6=01//

Q6THW. How many did you lose or throw away?

Enter number /range 1-30/
97 Don't Know
99 Refused

//IF Q6=01-97//

Q6a. Did you give any RBLT tags away?

01 Yes;
02 No;
97 Don't Know
99 Refused

//IF Q6a=02-97//

Q6REMD. Just as a reminder, the tags we sent you were only to be used on the < insert participant's vessel name >

01 Continue

//IFQ6a=01//

Q6b. How many did you give away?

Enter number /range 1-30/
97 Don't know
99 Refused

//IFQ6a=01//

Q6REMD2. Just as a reminder, the tags we sent you were only to be used on the < insert participant's vessel name >. If possible, please try to recover the RBLT tags you gave away and mail them back to us in the postage paid envelop provided.

01 Continue

//ALL //

Q7. Did you keep any recreational Bluefin tuna this year caught aboard the <insert participant's vessel name> that you did not report to NOAA Fisheries?

01 Yes
02 No
97 Don't Know
99 Refused

//IF Q7=01//

Q8. How many recreational Bluefin tuna did you keep this year that you did not report to NOAA Fisheries?

ENTER NUMBER /range 1-30/
97 Don't Know
99 Refused

//IF Q7=01 AND Q1=01,97//

Q9. Did you place an RBLT landings tag on any of the unreported recreationally landed Bluefin tuna?

01 Yes

Appendix L. continued

02 No
97 Don't Know
99 Refused

//IF Q9=01//

Q9a. How many of the unreported landed bluefin tuna did you place an RBLT tag on?

ENTER NUMBER /range 1-30/
97 Don't know
99 Refused

PROGRAM EVALUATION SECTION

//IF Q1=01-97//

Q10T

Thank you very much for helping us account for bluefin tags and for promptly returning your unused tags to us if you have not already done so. I just have a few program evaluation questions for you that will help us improve the RBLT in the future.

01 Continue

//IF Q1=01-97//

Q10. On a 5-point scale with "1" being "very easy" and "5" being "very difficult", were the instructions for participating in the RBLT clear and easy to understand? Would you say they were …

[Read options]

01 very easy
02 somewhat easy
03 neutral
04 somewhat difficult
05 very difficult
99 Refused

//IF Q1=01-97//

Q11. While you may not have had use for the tag stations, would you say they were conveniently located for you in case you needed to get additional tags or for returning tags?

[IF NEEDED: "The tag stations locations were on the yellow card inside your tag kit pouch"]

[Read Options]

01 Yes, they were conveniently located
02 No, they were not conveniently located
03 Don't Know or Did not pay attention to locations
99 Refused

//IF Q1=01-97//

Q12. If smartphone applications or "apps" were developed for recreational bluefin landings reporting how likely would you say it is that you would use such an "app" to report future landings? Would you say…

[Read options]

01 very likely
02 somewhat likely
03 maybe

Appendix L. continued

04 somewhat unlikely
05 very unlikely
99 Refused

//IF #RBLT tags reported>0 OR Q2a>0 OR Q7=02 AND Q1=03//
Q13. Did you experience any problems trying to report your recreational Bluefin tuna landings or your RBLT tag numbers?

01 Yes
02 No
97 Don't know
99 Refused

//IF Q13=01//
Q13a.Can you please describe the problem(s) you experienced?

[Record Open-ended responses]

//IF Q13=02//
Q14. For the RBLT pilot, you were initially provided with a set of Bluefin tags with additional tags being available from tag stations as needed. Considering how often you typically fish for recreational Bluefin in a given year would you say this number of initial tags was:

01 Too few,
02 About the right number,
03 Too many
97 Don't know
99 Refused

//IF Q14=01,03//
Q14a. How many initial recreational bluefin tags would you say is the right number for you?

Enter number /range 0-96/
97 Don't Know
99 Refused

//IFQ13=01-02//
Q15. Do you have any other recommendations for improving the RBLT?

01 Yes
02 NO
99 Refused

//IF Q15=01//
Q15a. What recommendations do you have for the RBLT?

[Record Open-ended responses]

//ALL//
CLOSE. Those are all the questions I have for you today. Thanks for your time. Good-bye.

01 Continue

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Recreational Bluefin Reporting Options Survey - SurveyMonkey

1. Do you take fishing trips targeting recreational bluefin tuna?

	ResponsePercent	ResponseCount
NO	15.7%	39
YES	**84.3%**	**209**
	AnsweredQuestion	**248**
	SkippedQuestion	**0**

2. Have you ever landed a recreational bluefin tuna?

	ResponsePercent	ResponseCount
NO	22.1%	46
YES	**77.9%**	**162**
	AnsweredQuestion	**208**
	SkippedQuestion	**40**

3. Do you or someone on your vessel typically have a cell phone onboard when you go fishing for bluefin tuna?

	ResponsePercent	ResponseCount
ALWAYS	**80.5%**	**165**
SOMETIMES	18.5%	38
NEVER	1.0%	2
	AnsweredQuestion	**205**
	SkippedQuestion	**43**

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4. What type of cell phone do you normally have on your vessel?

	ResponsePercent	ResponseCount
REGULAR CELL PHONE	36.4%	75
SMARTPHONE (for example iPhone, Droid or similar)	**62.1%**	**128**
DON'T KNOW	1.5%	3
	AnsweredQuestion	**206**
	SkippedQuestion	**42**

5. Do you have cell phone coverage at the dock or launch site where you normally return from bluefin tuna fishing trips?

	ResponsePercent	ResponseCount
ALWAYS	**58.3%**	**119**
OFTEN	24.0%	49
SOMETIMES	14.2%	29
RARELY	2.9%	6
DON'T KNOW	0.5%	1
	AnsweredQuestion	**204**
	SkippedQuestion	**44**

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6. Do you have access to a landline phone (pay phone or other) at the dock or marina where you normally return from bluefin tuna fishing trips?

	ResponsePercent	ResponseCount
NO	**68.9%**	**142**
YES	20.9%	43
DON'T KNOW	10.2%	21
	AnsweredQuestion	**206**
	SkippedQuestion	**42**

7. Have you ever reported a recreationally landed bluefin tuna to NOAA Fisheries using the online Internet system (www.hmspermits.gov)?

	ResponsePercent	ResponseCount
NO	**51.0%**	**104**
YES	38.7%	79
DON'T KNOW	10.3%	21
	AnsweredQuestion	**204**
	SkippedQuestion	**44**

8. Have you ever reported a recreationally landed bluefin tuna to NOAA Fisheries using the toll-free phone line (888-USA-TUNA)?

	ResponsePercent	ResponseCount
NO	**63.2%**	**127**
YES	24.9%	50
DON'T KNOW	11.9%	24
	AnsweredQuestion	**201**
	SkippedQuestion	**47**

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9. Please indicate your preferred method for reporting recreationally landed bluefin tuna to NOAA Fisheries:

	ResponsePercent	ResponseCount
PHONE CALL	30.4%	62
TEXT MESSAGE	17.6%	36
INTERNET	**49.5%**	**101**
OTHER (PLEASE SPECIFY)	2.5%	5
	AnsweredQuestion	**204**
	SkippedQuestion	**44**

10. Have you experienced any problems trying to report a recreational bluefin tuna to NOAA Fisheries through either the automated phone or online system?

	ResponsePercent	ResponseCount
NO	**96.5%**	**195**
YES	3.5%	7
	IF YES, Please provide details below	6
	AnsweredQuestion	**202**
	SkippedQuestion	**46**

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11. Have you ever landed a recreational bluefin tuna and not been able to or chosen not to report it?

		ResponsePercent	ResponseCount
NO		**83.3%**	**169**
YES		16.7%	34
	If 'YES' Please candidly tell us why you could not or did not report		29
		AnsweredQuestion	**203**
		SkippedQuestion	**45**

12. Do you participate in the voluntary Massachusetts Division of Marine Fisheries Electronic Recreational Angler Logbook program (eLogbook)?

		ResponsePercent	ResponseCount
NO		**86.3%**	**176**
YES		13.7%	28
		AnsweredQuestion	**204**
		SkippedQuestion	**44**

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Recreational Bluefin Reporting Options Survey - SurveyMonkey

1. Do you take fishing trips targeting recreational bluefin tuna?

		ResponsePercent	ResponseCount
NO		12.5%	128
YES		**87.5%**	**894**
		AnsweredQuestion	**1,022**
		SkippedQuestion	**0**

2. Have you ever landed a recreational bluefin tuna?

		ResponsePercent	ResponseCount
NO		40.7%	360
YES		**59.3%**	**525**
		AnsweredQuestion	**885**
		SkippedQuestion	**137**

3. Do you or someone on your vessel typically have a cell phone on-board when you go fishing for bluefin tuna?

		ResponsePercent	ResponseCount
ALWAYS		**88.0%**	**775**
SOMETIMES		11.2%	99
NEVER		0.8%	7
		AnsweredQuestion	**881**
		SkippedQuestion	**141**

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4. What type of cell phone do you normally have on your vessel?

	ResponsePercent	ResponseCount
REGULAR CELL PHONE	36.8%	319
SMARTPHONE (for example iPhone, Droid or similar)	**62.5%**	**542**
DON'T KNOW	0.7%	6
	AnsweredQuestion	**867**
	SkippedQuestion	**155**

5. Do you have cell phone coverage at the dock or launch site where you normally return from bluefin tuna fishing trips?

	ResponsePercent	ResponseCount
ALWAYS	**65.6%**	**568**
OFTEN	20.3%	176
SOMETIMES	11.5%	100
RARELY	1.5%	13
DON'T KNOW	1.0%	9
	AnsweredQuestion	**866**
	SkippedQuestion	**156**

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6. Do you have access to a landline phone (pay phone or other) at the dock or marina where you normally return from bluefin tuna fishing trips?

	ResponsePercent	ResponseCount
NO	**62.2%**	**543**
YES	18.6%	162
DON'T KNOW	19.2%	168
	AnsweredQuestion	**873**
	SkippedQuestion	**149**

7. Have you ever reported a recreationally landed bluefin tuna to NOAA Fisheries using the online Internet system (www.hmspermits.gov)?

	ResponsePercent	ResponseCount
NO	**73.5%**	**633**
YES	19.5%	168
DON'T KNOW	7.0%	60
	AnsweredQuestion	**861**
	SkippedQuestion	**161**

8. Have you ever reported a recreationally landed bluefin tuna to NOAA Fisheries using the toll-free phone line (888-USA-TUNA)?

	ResponsePercent	ResponseCount
NO	**82.8%**	**705**
YES	9.2%	78
DON'T KNOW	8.0%	68
	AnsweredQuestion	**851**
	SkippedQuestion	**171**

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9. Please indicate your preferred method for reporting recreationally landed bluefin tuna to NOAA Fisheries:

	ResponsePercent	ResponseCount
PHONE CALL	26.9%	230
TEXT MESSAGE	19.9%	170
INTERNET	**49.4%**	**423**
OTHER (PLEASE SPECIFY)	3.9%	33
	AnsweredQuestion	**856**
	SkippedQuestion	**166**

10. Have you experienced any problems trying to report a recreational bluefin tuna to NOAA Fisheries through either the automated phone or online system?

	ResponsePercent	ResponseCount
NO	**97.6%**	**829**
YES	2.4%	20
	IF YES, Please provide details below	20
	AnsweredQuestion	**849**
	SkippedQuestion	**173**

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11. Have you ever landed a recreational bluefin tuna and not been able to or chosen not to report it?

	ResponsePercent	ResponseCount
NO	**87.2%**	**737**
YES	12.8%	108
If 'YES' Please candidly tell us why you could not or did not report		104
AnsweredQuestion		**845**
SkippedQuestion		**177**

12. Do you participate in the voluntary Massachusetts Division of Marine Fisheries Electronic Recreational Angler Logbook program (eLogbook)?

	ResponsePercent	ResponseCount
NO	**95.8%**	**815**
YES	4.2%	36
AnsweredQuestion		**851**
SkippedQuestion		**171**