ATLANTIC LARGE WHALE TAKE REDUCTION PLAN

MONITORING STRATEGY

Monitoring Effectiveness of and Regulatory Compliance with the Atlantic Large Whale Take Reduction Plan

NOAA Fisheries Service
Northeast Region
Protected Resources Division

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1. BACKGROUND

As mandated by the 1994 amendments to the Marine Mammal Protection Act (MMPA), NOAA Fisheries Service (NMFS) developed the Atlantic Large Whale Take Reduction Plan (ALWTRP) in 1997 with input from the Atlantic Large Whale Take Reduction Team (ALWTRT) to reduce the serious injury and mortality of right, humpback, and fin whales in U.S. commercial fisheries. The ALWTRP primarily addresses entanglement of the critically endangered North Atlantic right whale (*Eubalaena glacialis*), but is also intended to reduce serious injuries and mortalities resulting from entanglements of endangered Gulf of Maine humpback (*Megaptera novaeangliae*) and Western North Atlantic fin (*Balaenoptera physalus*) whales in fixed gear fisheries (trap/pot and gillnet) from Maine through Florida. The ALWTRP also benefits the non-ESA listed Canadian east coast minke whale (*Balaenoptera acutorostrata*).

Under the MMPA, the immediate goal of a take reduction plan is to reduce, within six months of its implementation, the mortality and serious injury of strategic stocks incidentally taken during U.S. commercial fishing operations to below the Potential Biological Removal (PBR) level established for such species' stocks. The long-term goal of a take reduction plan is to reduce, within five years of its implementation, the incidental mortality and serious injury of strategic marine mammal stocks taken during U.S. commercial fishing operations to levels approaching a zero mortality and serious injury rate (defined as 10% of a stock's PBR level), commonly referred to as the zero mortality rate goal (ZMRG). The MMPA requires the long-term goal to consider taking into account the economics of the fishery, the availability of existing technology, and existing state or regional fishery management plans. The ALWTRP was developed in consultation with the ALWTRT, which is a stakeholder team consisting of fishing industry representatives, scientists, environmental advocates, state and federal officials, and other interested parties. Under the mandate of the Endangered Species Act (ESA), federal agencies are required to ensure that federally permitted activities (such as commercial fisheries) do not jeopardize the continued existence and recovery of an endangered species.

The ALWTRP has several components, including restrictions on where and how fishing gear can be set, research on whale populations and behavior, research on fishing gear interactions and modifications, outreach to inform and collaborate with fishermen and other stakeholders, and a large whale disentanglement program.

The original regulations of the ALWTRP were implemented in 1997 and published in the *Federal Register* as an interim final rule. The regulations were amended in February 1999 and again in December 2000. In January 2002, NMFS published three rules that made further modifications to commercial fishing gear, established a system for restricting fishing in areas where unexpected aggregations of right whales are observed (Dynamic Area Management), and established restricted areas based on annual, predictable aggregations of right whales (Seasonal Area Management). In June 2007, NMFS published a final rule expanding the Southeast U.S. Restricted Area and prohibiting gillnet fishing or possession during the right whale calving season, with exceptions. In October 2007, NMFS issued a final rule implementing broad-based gear modifications largely to replace the Seasonal and Dynamic Area Management programs. This broad-based gear modification strategy includes expanded weak link and sinking groundline requirements, additional gear marking requirements, changes in management area boundaries,

seasonal restrictions for gear modifications, expanded exempted areas, and regulatory language changes for the purposes of clarification and consistency. For further information on the ALWTRP regulations, please visit www.nero.noaa.gov/whaletrp.

2. MONITORING THE ALWTRP

On February 23-24, 2009, the NMFS Northeast Regional Office (NERO) Protected Resources Division (PRD) convened an internal workshop to discuss the development of a comprehensive monitoring strategy for the ALWTRP. The goal of this workshop was to develop an outline for a monitoring strategy that included components to review *compliance* with and to assess the *effectiveness* of the ALWTRP regulations in achieving the MMPA short- and long-term goals of reducing serious injury and mortality of large whales in U.S. commercial fisheries.

Workshop participants concluded that there are several components that must be considered when evaluating compliance with the ALWTRP. Although viable compliance rates are difficult to obtain, various elements were discussed to help inform NMFS on issues related to compliance. These included cooperation with enforcement partners (i.e. NOAA Office of Law Enforcement [NOAA OLE], United States Coast Guard [USCG], and states with Joint Enforcement Agreements [JEA]), consideration of observed gear characteristics, the importance of clear and enforceable regulations, as well as extensive industry outreach.

Monitoring the ALWTRP presents several unique challenges. This is primarily due to the widespread lack of reliable and comprehensive data pertaining to large whale fishery interactions. Large whale entanglements are typically not observed or documented by fishery observers or other sources. Furthermore, in many instances fishing gear found on whales is difficult to attribute to a particular gear type, gear component, fishery, or geographic region. In addition, the data needed to most effectively monitor the ALWTRP spans many regulated fisheries across a wide geographic range along the U.S. east coast.

This ALWTRP monitoring strategy incorporates a variety of measures that will assist in evaluating levels of compliance and overall effectiveness of the take reduction plan:

- *Biological, oceanographic, and fishing gear analyses* – population growth trends, large whale serious injury and mortality determinations, observed entanglement events over time, entangling gear identification, and oceanic conditions/trends related to large whales;
- *Fishing industry practices and compliance indicators* – utilizing observer data, quantifying enforcement efforts, gear characterization efforts;
- *Education/outreach measures* – distribution of outreach guides and other information, issuing permit holder letters, ALWTRP website maintenance, trade-show participation, industry outreach meetings, ALWTRP trainings, direct communications, and publication of an annual compliance and effectiveness report.

Incorporating the measures described above, this ALWTRP monitoring strategy is divided into two components: evaluating the ALWTRP's overall effectiveness and evaluating compliance

with ALWTRP requirements. Within this document, descriptions of indicators of the effectiveness of and compliance with the ALWTRP are followed by specific metrics that will be used in making these determinations.

3. ALWTRP EFFECTIVENESS MONITORING

The effectiveness of the ALWTRP is monitored and measured by examining whether the short- and long-term statutory goals described in the MMPA are being achieved. This involves comparing the most recent estimated annual serious injury[1] (defined in 50 CFR 229.2 as "an injury that will likely result in mortality") and mortality of right, humpback, and fin whales to the respective PBR and ZMRG levels for each species.

Comparing serious injury and mortality estimates to PBR and ZMRG for these species on an annual basis is the foundation of this ALWTRP monitoring strategy. The individual metrics that are described in this document will be used to assist in understanding and explaining the current estimates of serious injury and mortality – and determining the areas in which NMFS should focus on making improvements.

Comparing serious injury and mortality estimates to PBR and ZMRG annually can inform the effectiveness of the ALWTRP regulations, enforcement, and education/outreach efforts, and provides an indicator of compliance levels. Due to the status of the large whale species/stocks managed by the ALWTRP under the MMPA and their endangered listing status under the ESA, conservation and monitoring efforts are of critical importance. As of December 2011, PBR levels[2] for the three stocks managed under the ALWTRP are:

- North Atlantic right whale – 0.5 whales
- Gulf of Maine humpback whale – 1.1 whales
- Western North Atlantic fin whale – 6.5 whales

These PBR estimates factor the minimum population sizes of these species/stocks, a maximum population productivity rate, and a recovery factor that considers each species' status as endangered. From these estimates, it is evident that conservation of these species is a priority and monitoring activities should be as comprehensive as possible.

A variety of indicators are available for investigating the effectiveness of ALWTRP regulations. If serious injury and mortality for these species exceeds PBR and/or ZMRG, these metrics will be used by NMFS to identify potential causes of not achieving MMPA-mandated goals. Presently, the two best available indicators of the effectiveness of ALWTRP regulations are determinations of serious injury and mortality due to entanglement and frequency of observed/reported large whale entanglement events. These metrics can give an indication of

[1] Glass AH, Cole TVN, Garron M. 2010. Mortality and Serious Injury Determinations for Baleen Whale Stocks along the United States and Canadian Eastern Seaboards, 2004-2008. US Dept Commerce, NOAA Technical Memorandum NMFS-NE-214; 19 p.

[2] Waring *GT, et al*. 2011. U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments – Draft 2011. Available from http://www.nmfs.noaa.gov/pr/sars/draft.htm.

ALWTRP effectiveness, but both require supporting efforts to ensure continued documentation of entanglements. In conjunction, using gear identification and analyses of whale distribution and fishing effort to continue to investigate whether appropriate fisheries, areas, and seasons are being regulated are important indicators of ALWTRP effectiveness.

Information contained in the ALWTRP annual monitoring report may include, but is not limited to, the following components of effectiveness monitoring.

3.1 Biological Analyses

3.1.1 Biological Metrics

There are several biological indicators that can be used to monitor the effectiveness of the ALWTRP. Most importantly, this involves comparing the most recent estimate of serious injury and mortality to the PBR for each large whale species. The serious injury and mortality estimate will be provided both as a single year and a rolling 5 year average. To provide the most up-to-date rolling average possible, the 5 year average will consist of the most recently available year's data from the annual serious injury and mortality report averaged with the previous 4 years of data obtained from the U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments (SAR). Presenting the data in this way will reduce the 2 year lag associated with using SAR estimates alone by 1 year. Given the multitude of variables contributing to large whale entanglements, detecting meaningful biological effects of the regulations can be difficult. Two primary factors that provide the most meaningful analysis available are determinations of serious injury and mortality due to entanglement and frequency of observed/reported large whale entanglement events. Additionally, determination of serious injury and mortality of large whales includes non-fishery related human-caused mortality such as ship strikes. While these events are not attributed to commercial fisheries, they will be considered as part of monitoring the ALWTRP for overall impact to the large whale species protected by the ALWTRP.

The two indicators that will be used to evaluate the effectiveness of the ALWTRP, determinations of serious injury and mortality due to entanglement and frequency of observed/reported large whale entanglement events, will continue to be monitored over time (Tables 1 and 2). It can be inferred that a positive change is attributable to actions taken under the ALWTRP, although a direct correlation may not be proven. Adequate sample sizes can likely be obtained with these metrics, and only regulated large whale species will be considered (right, humpback, and fin whales). Also, entangled whales will not be considered if the entangling gear can be attributed to non-ALWTRP regulated fisheries, such as seine or Canadian fishing gear.

Table 1: Comparing Serious Injury and Mortality to the Potential Biological Removal Level

Metric	Description	Reporting Frequency	Where Reported	Positive Indicator	Negative Indicator
1a	Serious injuries and mortalities compared to PBR – Right Whale	5 year average calculated annually	Marine Mammal Stock Assessment Report and Serious Injury & Mortality Report	Less than PBR; Less than ZMRG; Decreasing trend	Greater than PBR; Greater than ZMRG; Increasing trend
1b	Serious injuries and mortalities compared to PBR – Humpback Whale	5 year average calculated annually	Marine Mammal Stock Assessment Report and Serious Injury & Mortality Report	Less than PBR; Less than ZMRG; Decreasing trend	Greater than PBR; Greater than ZMRG; Increasing trend
1c	Serious injuries and mortalities compared to PBR – Fin Whale	5 year average calculated annually	Marine Mammal Stock Assessment Report and Serious Injury & Mortality Report	Less than PBR; Less than ZMRG; Decreasing trend	Greater than PBR; Greater than ZMRG; Increasing trend

Table 2: Other Supporting Biological Metrics

Metric	Description	Reporting Frequency	Where Reported	Positive Indicator	Negative Indicator
2a	Population estimate and trend – Right Whale	Annual	Marine Mammal Stock Assessment Report	Increasing trend	Decreasing trend
2b	Population estimate and trend – Humpback Whale	Annual	Marine Mammal Stock Assessment Report	Increasing trend	Decreasing trend
2c	Population estimate and trend – Fin Whale	Annual	Marine Mammal Stock Assessment Report	Increasing trend	Decreasing trend
3a	Frequency of observed/reported large whale entanglement events – Right Whale	Annual & 5 year average calculated annually	ALWTRP annual monitoring report & multi-year ALWTRP status summary	Decrease	Increase
3b	Frequency of observed/reported large	Annual & 5 year average calculated	ALWTRP annual monitoring report	Decrease	Increase

	whale entanglement events – Humpback Whale	annually	& multi-year ALWTRP status summary		
3c	Frequency of observed/reported large whale entanglement events – Fin Whale	Annual & 5 year average calculated annually	ALWTRP annual monitoring report & multi-year ALWTRP status summary	Decrease	Increase
4a	Number of observed/reported entanglements – Right Whale	Annual & 5 year average calculated annually	ALWTRP annual monitoring report & multi-year ALWTRP status summary	Decrease	Increase
4b	Number of observed/reported entanglements – Humpback Whale	Annual & 5 year average calculated annually	ALWTRP annual monitoring report & multi-year ALWTRP status summary	Decrease	Increase
4c	Number of observed/reported entanglements – Fin Whale	Annual & 5 year average calculated annually	ALWTRP annual monitoring report & multi-year ALWTRP status summary	Decrease	Increase
5a	Percentage of entanglements resulting in serious injury or mortality – Right Whale	Annual & 5 year average calculated annually	ALWTRP annual monitoring report & multi-year ALWTRP status summary	Decrease	Increase
5b	Percentage of entanglements resulting in serious injury or mortality – Humpback Whale	Annual & 5 year average calculated annually	ALWTRP annual monitoring report & multi-year ALWTRP status summary	Decrease	Increase
5c	Percentage of entanglements resulting in serious injury or mortality – Fin Whale	Annual & 5 year average calculated annually	ALWTRP annual monitoring report & multi-year ALWTRP status summary	Decrease	Increase

To ensure consistent methods in evaluating these metrics over time, certain assumptions and variables must be assured. To maintain a comparable time series of data, these metrics require ongoing continuity of methods such as detection of entanglement whales, data collection, necropsies, awareness and outreach on reporting requirements, aircraft and vessel survey distribution, and serious injury and mortality determinations. Each of these means of assessing contributes greatly to the production of adequate entanglement data.

The publication of serious injury and mortality determinations incurs a delay of approximately one to two years. Evaluating large whale serious injury and mortality determinations due to entanglement and the frequency of observed/reported large whale entanglement events will require several years of monitoring to determine whether changes have occurred. If NMFS evaluations determine through annual monitoring efforts that positive trends have emerged, it may be concluded that they are attributable to ALWTRP regulations.

3.1.2 Scarification Data

An additional metric that will be considered is scarification that results from an entanglement that was survived (Table 2). NMFS will evaluate the utility of these data and trends in scarring rates, as a measure of the relative success of the program. The use of scarification data, currently available for right and humpback whales, could potentially be beneficial, although there are caveats associated with using these data to measure the effectiveness of the ALWTRP. Scars indicate fishery interactions and could be an informative metric to the extent that management measures are implemented to reduce those interactions. For management measures designed to reduce serious injury and mortality resulting from fishery interactions, scarification may be less informative. Regardless, NMFS believes that further discussions with those collecting and analyzing scarification data are necessary in order to fully explore this metric as an indicator of ALWTRP effectiveness. To that end, future ALWTRP annual monitoring reports will consider developments in scarification analysis in its discussion of ALWTRP effectiveness monitoring, and will compare rates of scarification with rates of large whale serious injury and mortality.

Table 3: Scarification Metrics

Metric	Description	Reporting Frequency	Where Reported	Positive Indicator	Negative Indicator
6a	Annual rate of entanglement based on scarring – Right Whale	Annual & 5 year average calculated annually	ALWTRP annual monitoring report & multi-year ALWTRP status summary	Decrease	Increase
6b	Annual rate of entanglement based on scarring – Humpback Whale	Annual & 5 year average calculated annually	ALWTRP annual monitoring report & multi-year ALWTRP status summary	Decrease	Increase

3.2 Disentanglement and Gear Analyses

3.2.1 Large Whale Disentanglement/Stranding Response

The NMFS large whale disentanglement and stranding response programs are important contributors of data to the evaluation of ALWTRP effectiveness. Each provides an additional

source of information on the biological effects of the ALWTRP and contributes to a better scientific understanding of these large whale species and of the nature of interactions with commercial fishing gear.

These programs play crucial roles in large whale conservation along the U.S. East Coast. NMFS's Marine Mammal Stranding Network provides medical and logistical response to stranded marine mammals as necessary. Responders, in collaboration with NMFS, will continue to collect data from stranded whales to assist in serious injury and mortality determinations and also document the presence of fishing gear on these whales. The NMFS Atlantic Large Whale Disentanglement Network works to disentangle all large whales, including the North Atlantic right whale, from life-threatening entanglements. The goals of disentangling individual whales are to remove potentially life-threatening gear and to recover the gear from the entangled whale for analysis of the origins of the gear.

The ALWTRP annual monitoring report will include a summary of activity within the NMFS Stranding and Disentanglement programs related to the ALWTRP (Table 3). In addition, an update will be given regarding how data obtained from these sources will contribute to evaluating the effectiveness of the ALWTRP.

Table 4: Disentanglement and Stranding Metrics

Metric	Description	Reporting Frequency	Where Reported	Positive Indicator	Negative Indicator
7a	Percentage of observed entanglements monitored	Annual & 5 year average calculated annually	ALWTRP annual monitoring report & multi-year ALWTRP status summary	Increase	Decrease
7b	Percentage of observed entanglements disentangled	Annual & 5 year average calculated annually	ALWTRP annual monitoring report & multi-year ALWTRP status summary	Decrease	Increase
8	Presence of fishing gear on stranded animals	Annual & 5 year average calculated annually	ALWTRP annual monitoring report & multi-year ALWTRP status summary	Decrease	Increase

3.2.2 Gear Identification

In conjunction with large whale disentanglement and stranding response, the identification and documentation of recovered gear is critical to gaining information on large whale interactions

with commercial fisheries and contributing to the evaluation of the effectiveness of the ALWTRP. Entangling gear that is recovered within the U.S. is provided to NMFS gear experts for analysis and possible identification, and could be provided to the NOAA Office of Law Enforcement. Currently, the recovery of entangling fishing gear and its potential identification to a gear type/fishery is a primary source of data on the effectiveness of fishing gear modifications at reducing the occurrence of large whale entanglements. Recovered fishing gear is helpful from a regulatory compliance standpoint since in some cases it is possible to determine if the gear contains the required gear modifications and was therefore being fished in a manner consistent with the ALWTRP requirements. This information can be collected through an examination of recovered gear and/or interviews with fishing gear owners, if known. When recovered gear is concluded to be not in compliance with the ALWTRP, there is an existing protocol for transferring the non-compliant gear to NOAA OLE for investigation. More information on law enforcement activities is provided below under "ALWTRP Compliance Monitoring."

NMFS has been conducting gear recovery and identification efforts and these analyses must continue to ensure that all potential entanglement data sources are utilized. Of the 364 large whale entanglement events recorded from 1997 through 2008:

- Gear was recovered or known in 129 (35%) of the cases
- Gear type was identified in 103 (28%) of the cases
- Fishery and location in which gear was set was known in 53 (15%) of the cases
- Fishery, location, and date was known in 36 (10%) of the cases

NMFS will continue to develop more efficient and effective options for gear marking to aid in the identification and analysis of recovered fishing gear. Annually, NMFS will include a summary of the latest data obtained from the recovery and analysis of fishing gear involved in a large whale entanglement in the ALWTRP annual monitoring report (Table 4).

Table 5: Recovered Gear Identification

Metric	Description	Reporting Frequency	Where Reported	Contents of Report
9	Fishing gear collected and analyzed	Annual	ALWTRP annual monitoring report & multi-year ALWTRP status summary	Description of entanglements , whether gear was recovered, whether gear type could be identified, and whether the gear was compliant with the ALWTRP regulations

3.3 Oceanographic/Fisheries-Based Analyses

In addition to biological data on large whale entanglements and fishing gear analyses, a number of other indicators of ALWTRP effectiveness must be considered. External factors not directly pertaining to large whale entanglements can influence the effectiveness of the ALWTRP regulations. These can include changing oceanographic conditions that may influence

commercial fishing effort and/or large whale population migration and distribution. Factors may also include distribution of prey species like copepods, other zooplankton, and fish. In addition, a changing regulatory landscape facing commercial fishermen resulting from management efforts outside of the ALWTRP is also a factor warranting consideration. Fisheries management regulations or other factors can impact fishing effort and seasonality in a number of ways, and these potential changes must be considered in context with the effectiveness of the ALWTRP. For example, new or emerging fisheries not previously considered or regulated by the ALWTRP may need to be evaluated for risks to large whale species.

Annually, NMFS will include an overview of recent NMFS and non-NMFS research on oceanographic and fisheries-based factors that are relevant to evaluating the effectiveness of the ALWTRP in the ALWTRP annual monitoring report (Table 5).

Table 6: Fisheries and Oceanographic Metrics

Metric	Description	Reporting Frequency	Where Reported	Contents of Report
10	Large whale distribution	Annual	ALWTRP annual monitoring report & multi-year ALWTRP status summary	Summary of any new information on changes in large whale distribution
11	Fishing effort and/or distribution	Annual	ALWTRP annual monitoring report & multi-year ALWTRP status summary	Summary of new information on changes in fishing effort and/or distribution
12	Prey species abundance and/or distribution	Annual	ALWTRP annual monitoring report & multi-year ALWTRP status summary	Summary of any new information on prey abundance and/or distribution

4. ALWTRP COMPLIANCE MONITORING

Compliance with ALWTRP regulations is a critical indicator of the ALWTRP's progress in achieving the goals for take reduction plans established by the MMPA. Compliance monitoring is intertwined with monitoring the effectiveness of the ALWTRP in that both indicators must yield positive results in order for MMPA goals to be satisfied. Furthermore, compliance with ALWTRP regulations must be high to determine whether regulatory actions are effective.

As with monitoring the effectiveness of the ALWTRP, compliance monitoring for this plan must encompass a wide array of strategies and data sources. While relying heavily on gear

characteristic information collected by the observer program and surveys, this monitoring strategy will utilize data from multiple sources to best accumulate indicators of compliance with ALWTRP regulations. Summaries of each of the following data sources will be included in the ALWTRP annual monitoring report.

4.1 Fishing Industry Practices

The primary method for monitoring compliance with ALWTRP regulations is to monitor the practices of fishermen in the regulated commercial fisheries using the best data sources available. Industry compliance rates are one measure of effectiveness; however, it is difficult to comprehensively measure compliance for the ALWTRP. The Maine Marine Patrol and Maine Department of Marine Resources in consultation with NMFS are currently operating a pilot program to investigate options for calculating current rates of compliance with ALWTRP regulations. However, in the absence of an overall rate of compliance for ALWTRP regulations, NMFS will annually report the number and nature/severity of regulatory violations issued by NOAA OLE.

4.1.1 Observer Data/At-sea Monitoring Data

Data from the NMFS Northeast Fisheries Observer Program (NEFOP) will be included in the ALWTRP annual monitoring report contributing to the analysis of compliance with ALWTRP regulations. In 2007, the NOAA Fisheries Service Northeast Fisheries Science Center (NEFSC) gillnet and trap/pot observer logs were modified as recommended by NERO to include various ALWTRP-managed gear characteristics. This included characteristics such as weak links (number, type), surface system (presence/absence, number of buoys), buoy line (number, composition), groundline (length if present, composition), anchors (number, type), and presence of gear marking. Data collected by observers on these characteristics are an important measure of compliance with ALWTRP regulations. Although observer coverage for trap/pot fisheries is poor, the NERO will be working with the National Observer Program to explore the potential of increasing coverage in the trap/pot fisheries, where possible.

Although the primary data used to monitor the ALWTRP will be the NEFOP data, NMFS will also utilize (where appropriate) data generated for the At-Sea-Monitoring Program (ASM). The ASM data are collected from at-sea monitors that operate separately from the NEFOP to monitor catch rates to support the NERO's sector management scheme under the Northeast Multispecies Fishery Management Plan. Some data collected by the ASM may be utilized to support monitoring efforts for the ALWTRP.

In the ALWTRP annual monitoring report, NMFS will include a review of the latest available observer data relevant to ALWTRP-managed commercial fisheries (Table 7). Analyses of observer data summaries will be used as an indicator of compliance, as well as to target specific areas for outreach and/or law enforcement (focused on a geographic area, not individual commercial fishing vessels). In addition, the ALWTRP annual monitoring report will include an update, as available, on the latest analytical work in developing statistically significant methods to measure compliance rates for ALWTRP management measures.

Table 7: Observer and At-Sea Monitor Updates

Metric	Description	Reporting Frequency	Where Reported	Contents of Report
13	NEFOP and ASM update	Annual	ALWTRP annual monitoring report & multi-year ALWTRP status summary	Number and nature of observed trips on fisheries regulated under the ALWTRP through the NEFOP and ASM

4.1.2 Marine Mammal Authorization Program Mortality/Injury Reporting Form

The Marine Mammal Authorization Program (MMAP) provides an exemption for commercial fishermen in Category I and II fisheries from the MMPA's prohibition on the taking of marine mammals. The MMAP is also used to provide information to fishermen regarding specific federal marine mammal regulations that apply to certain fisheries that interact with marine mammal stocks.

One of the requirements of the MMAP is mandatory reporting. All commercial fishing vessel owners or operators, regardless of the fishery in which they participate, must report all incidental injuries and mortalities of marine mammals that have occurred as a result of commercial fishing operations. Reports must be sent to NMFS within 48 hours of the end of a fishing trip in which the serious injury or mortality occurred, or, for non-vessel fisheries, within 48 hours of the occurrence. Marine mammal take reports submitted through the MMAP will be compared to observed interactions to evaluate the effectiveness of MMAP reporting.

The information obtained from MMAP reports can help assess compliance with and effectiveness of ALWTRP regulations (Table 8).

Table 8: Marine Mammal Authorization Program

Metric	Description	Reporting Frequency	Where Reported	Contents of Report
14	Marine Mammal Authorization Program	Annual	ALWTRP annual monitoring report & multi-year ALWTRP status summary	Number of incidental injuries and moralities reported through the MMAP

4.1.3 Evaluation of Fishing Effort Data

NMFS will review data collected through fishing vessel trip reports (VTR), or logbooks, in specific commercial fisheries along the east coast to monitor commercial gillnet fishing within ALWTRP-managed waters and especially during seasonal ALWTRP closure areas (Table 9). If possible, NMFS will coordinate with law enforcement personnel to utilize vessel monitoring system (VMS) location information to monitor fishing activities. NMFS will also continue to guide the monitoring of state fisheries by state agencies and the collection of gear characterization information through their annual logs and surveys.

Table 9: Commercial Fishing Effort

Metric	Description	Reporting Frequency	Where Reported	Contents of Report
15	Vessel Trip Reports and Vessel Monitoring System	Annual	ALWTRP annual monitoring report & multi-year ALWTRP status summary	Fishing activity in ALWTRP regulated areas
16	State gear characterization	Annual	State reports on gear characterization	Update from state annual fishing logs and surveys, noting changes in fishing effort and/or gear characterization

4.2 Law Enforcement Activities

NMFS will continue to work with various partners, including NOAA OLE, the USCG, and individual states to monitor compliance and to enforce the regulatory components of the ALWTRP. Contingent on the availability of funding, NMFS will also continue to fund cooperative enforcement efforts with state partners along the east coast through the use of JEAs. NMFS will continue to work with law enforcement partners to coordinate special operations patrols to conduct more focused at-sea monitoring and enforcement of ALWTRP requirements. As appropriate, NMFS will coordinate and increase enforcement efforts to correspond with areas and times of indicated or observed non-compliance with ALWTRP regulations.

NMFS recognizes the importance of collecting and reporting overall law enforcement efforts related to the ALWTRP. NMFS will summarize in the ALWTRP annual monitoring report the number of patrols/patrol hours, gear investigated, violations issued, cases opened, and other relevant information to best monitor the relationship between law enforcement efforts and ALWTRP compliance (Table 10). Furthermore, NMFS recognizes the importance of training enforcement personnel on ALWTRP regulations, as well as the importance of implementing enforceable regulations. As such, NMFS will continue to coordinate with enforcement partners, including NOAA OLE and USCG, on upcoming training opportunities and encourage their continued involvement in the ALWTRT process.

Table 10: Law Enforcement Activities

Metric	Description	Reporting Frequency	Where Reported	Contents of Report
17	Law enforcement and Joint Enforcement Agreement activity	Annual	ALWTRP annual monitoring report & multi-year ALWTRP status summary	Number of patrol hours, number of contacts, number and nature of violations documented by enforcement partners, identification of funds committed to JEAs by State and report on activities conducted in previous year

4.3 Education and Outreach

Monitoring ALWTRP-related education and outreach is an important component of the monitoring strategy that will assist NMFS in its efforts to monitor compliance levels and the overall effectiveness of the ALWTRP (Table 11). NMFS will record and track the various components of its education and outreach program, including, but not limited to:

- Distribution of printed materials including permit holder letters, ALWTRP outreach guides, and other materials
- ALWTRP website maintenance and traffic, press releases, printed articles, and e-mail distribution;
- NMFS staff attendance at industry workshops, trade shows, and outreach meetings
- NMFS training provided to observers, at-sea monitors, and law enforcement staff
- State education and outreach efforts
- Dockside outreach
- Direct communications with individuals

Table 11: Education and Outreach Updates

Metric	Description	Reporting Frequency	Where Reported	Contents of Report
18	ALWTRP-related outreach activities	Annual	ALWTRP annual monitoring report & multi-year ALWTRP status summary	Listing of activities conducted under the bullets listed above

To be an effective management plan, all affected and interested parties must be fully aware and knowledgeable of the ALWTRP regulations. NMFS will utilize outreach tools to describe the regulations of the ALWTRP as clearly and consistently as possible, emphasize the importance of compliance with ALWTRP regulations, and raise awareness of the importance of reporting entangled whales as quickly as possible to the appropriate party. Important tools for NMFS include dedicated NMFS industry liaisons (currently four from Maine through Florida) and ALWTRP outreach guides and other printed/electronic materials. NMFS industry liaisons are important assets in furthering compliance efforts through such measures as responding to industry questions and concerns, providing training to industry, observer program and law enforcement staff, and attending meetings, industry trade shows, and workshops. In addition, NMFS will continue ongoing outreach efforts with counterparts in the Canadian government in order to better coordinate on risk reduction strategies. NMFS will quantify and report these outreach efforts each year in the ALWTRP annual monitoring report. Further, NMFS will emphasize the importance of having clear, consistent outreach statements concerning elements of the ALWTRP to facilitate better understanding and compliance.

In addition to providing outreach materials to assist commercial fishermen to comply with ALWTRP regulations, NMFS will report annually on its efforts to train industry and enforcement personnel (NOAA OLE, USCG, states) on ALWTRP management areas, effective time periods, and regulatory requirements. Maintaining a high awareness of the ALWTRP among state and enforcement partners will assist in promoting compliance with ALWTRP regulations.

NMFS recognizes the importance of quantifying outreach efforts and identifying areas and/or locations in need of additional targeted outreach and education. NMFS will report on these efforts in the ALWTRP annual monitoring report.

5. SCIENTIFIC RESEARCH

In addition to efforts to monitor the effectiveness of and compliance with ALWTRP regulations, NMFS will continue to maintain annual research matrices that identify large whale biological research and gear research needs to support the ALWTRP. The matrices, available on the ALWTRP website (www.nero.noaa.gov/whaletrp), will be shared with the ALWTRT and other stakeholders and be updated annually. The matrices will be used to support various funding initiatives by government and non-government organizations that promote marine mammal conservation. Each year, NMFS will provide an update on the most recent large whale and fishing gear scientific research conducted and/or funded, and list the latest scientific research priorities to support the ALWTRP (Table 12).

Table 12: Scientific Research Updates

Metric	Description	Reporting Frequency	Where Reported	Contents of Report
19	Research matrices	Annual	ALWTRP Website	Updates to research matrices
20	Research progress and results	Annual	ALWTRP annual monitoring report & multi-year ALWTRP status summary	Update on most recent large whale and fishing gear scientific research funded with current year funds and progress being made on previously funded projects

6. NMFS MONITORING PROTOCOL

6.1 ALWTRP Annual Monitoring Report

NMFS will begin implementing the monitoring strategy described in this document during the 2012 calendar year (see Appendix 1). Monitoring efforts will focus on data from the most recent marine mammal stock assessment and serious injury and mortality reports and will compare serious injury and mortality estimates to PBR and ZMRG for right, humpback, and fin whales. Metrics 1 through 20 described in this ALWTRP monitoring strategy will guide NMFS through the determination of factors that may be contributing to the ALWTRP's success and factors that may be hindering the ALWTRP's ability to achieve MMPA-mandated goals.

The first ALWTRP annual monitoring report will be produced by NMFS in 2012 and incorporate data from the year 2010. NMFS will begin its reporting cycle during which an ALWTRP annual monitoring report will be produced each year. The ALWTRP annual monitoring report will include updates and analyses, as available, for each of the metrics discussed within this monitoring strategy. For those metrics for which no new data are available or data for which analysis on a one-year timeframe may be inadequate, NMFS will be producing a multi-year ALWTRP status summary document.

6.2 Multi-Year ALWTRP Status Summary

The multi-year ALWTRP status summary is intended to produce analyses of indicators of ALWTRP effectiveness and compliance viewed over a 5 year timeframe (see Appendix 2). This will allow for a period during which several years of data can be collected and monitored. While the ALWTRP annual monitoring report will be providing short-term updates to the aforementioned metrics of compliance and effectiveness, the ALWTRP status summary will be more in-depth and prescriptive in nature than the yearly update. The multi-year ALWTRP status summary will compare the latest serious injury and mortality estimates to PBR and ZMRG for right, humpback, and fin whales to determine the need for additional education/outreach efforts, additional law enforcement activity, and/or amendments to the ALWTRP, among other possible scenarios based on this comparison. Ultimately, estimates of serious injury and mortality and

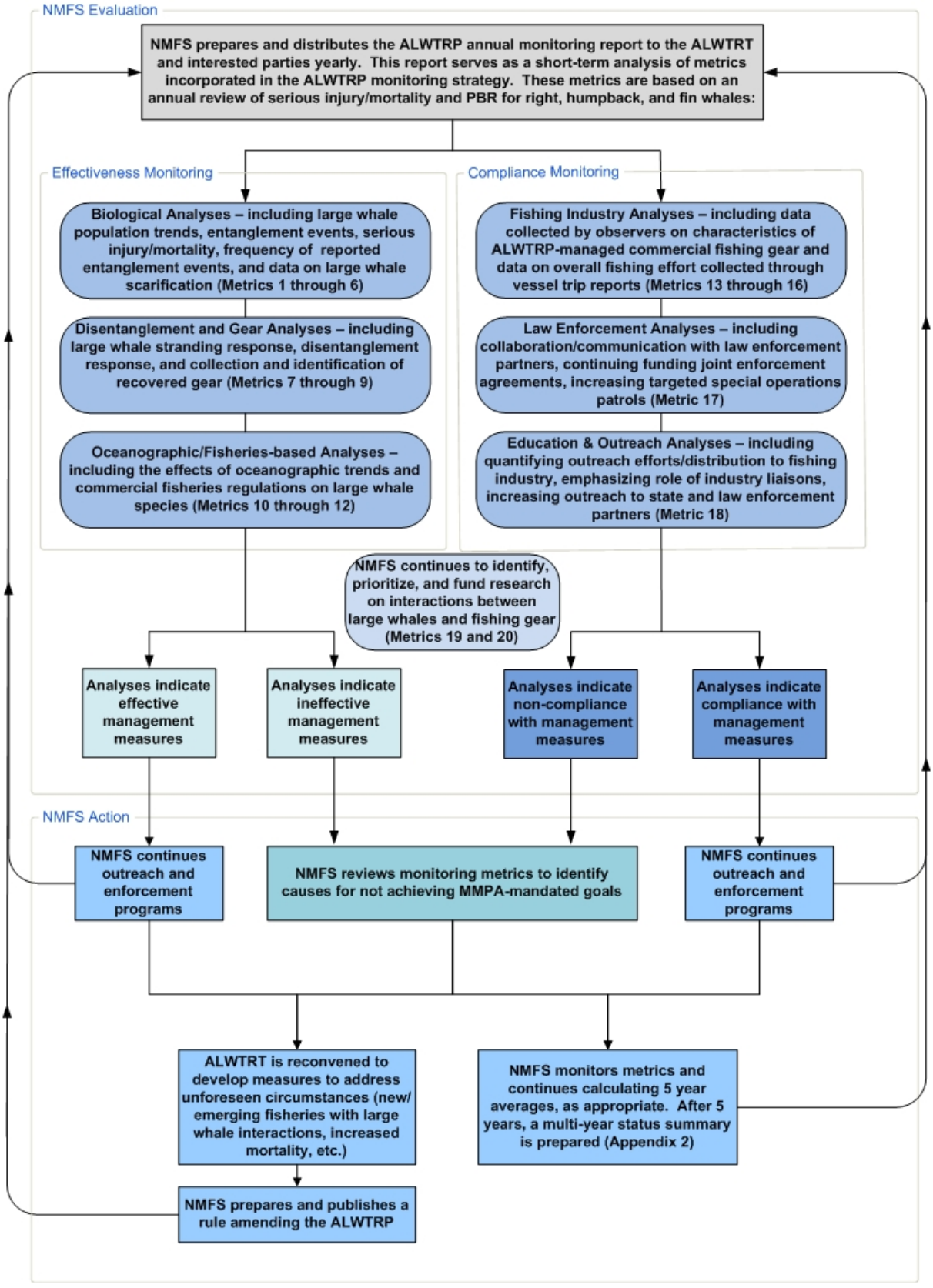
PBR will guide this process, and the metrics described within this monitoring strategy document will be used to determine the primary factors influencing these estimates. The multi-year status summary document is intended to serve as a guide to the ALWTRT and to NMFS throughout the take reduction planning process. If an unforeseen event should occur requiring action to amend the ALWTRP in interim years (e.g. interactions in new or emerging fisheries, increased mortality, etc.), NMFS may pursue ALWTRP amendments prior to the completion of a 5 year monitoring period.

If analyses determine that the ALWTRP is not effective in progressing toward its goals of reducing serious injury and mortality for these species below PBR levels and approaching ZMRG, NMFS will review the multi-year ALWTRP status summary to evaluate the potential causes for not achieving the management objectives. NMFS will determine whether the ALWTRP's goals are not being met due to lack of compliance with ALWTRP management measures or, if compliance is sufficient, the ALWTRP measures are inadequate to sufficiently reduce serious injury and mortality of right, humpback, and/or fin whales to acceptable levels under the MMPA. If serious injury and mortality for right, humpback, and fin whales is below PBR but above ZMRG, NMFS will evaluate management options while considering the economic and technical feasibility of taking action.

If analyses suggest that compliance levels are low, NMFS will refer to its compliance monitoring metrics and review its enforcement and education/outreach efforts to determine how adjustments can be made to increase compliance with the ALWTRP.

If analyses suggest that the ALWTRP management measures are inadequate (e.g., serious injury and mortality levels due to U.S. commercial fisheries interactions are not declining and are above acceptable levels), NMFS and the ALWTRT will discuss all relevant information, including the ALWTRP status summary, and recommend modifications to the ALWTRP that will allow the ALWTRP to achieve its management objectives.

APPENDIX 1: ALWTRP Monitoring Strategy Annual Flowchart



APPENDIX 2: ALWTRP Monitoring Strategy Multi-Year Flowchart