

National Prioritized Recommendations		
Priority	Recommendation	comments
1	Evaluate whether estimation procedures are matched appropriately to the sample designs	Currently MRFSS/LPS estimation for information collected on-site does not use nominal or actual selection probabilities. In addition, estimation does not account for multi-stage cluster design of access-point surveys
1	Conduct studies to determine the extent to which existing assumptions/biases affect final estimates (night fishing, private-access fishing, tournament fishing, non-coastal resident fishing, non-traditional gear, non-response errors, etc.).	Test assumptions and estimate the magnitude and degree of bias. Includes examination of coverage errors, non-response errors, and measurement errors. Some assumptions can be tested using existing data, while others may require additional information from existing surveys, or new surveys altogether.
1	Establish and document data management and collection goals, minimum data elements, procedures, timeliness of data availability, and QA/QC	Where appropriate, establish standard definitions and protocols, develop metadata for surveys, and document regulatory/management changes. Utilize existing frameworks of FINs, FIS, and ACCSP to the greatest extent possible.
1	Expand Atlantic Highly Migratory Species (HMS) data collection programs to meet management purposes	Identified as national priority in Denver. LPS only covers ME-VA. Gaps not adequately covered by other surveys include S. Atlantic, Gulf, Caribbean, and Hawaii
1	Develop methodologies for more efficient and unbiased collection of fishing effort data (registry-based surveys, panel surveys, dual-frame methodologies, field-based approaches, remote sensing techniques).	Improve efficiency of telephone surveys of fishing effort and provide complete coverage of the angling population. Eventually, this will involve sampling from a comprehensive registry of anglers. Interim approaches could utilize dual-frame surveys that utilize incomplete license databases and RDD methodologies or panel surveys. Telephone surveys must also consider the increasing occurrence of cell phone-only households.
2	Generate more timely wave and final estimates (more timely processing of data and estimation)	Identified as a priority in all regions.
2	Develop methodologies to provide better estimates of discarded catch, as well as estimates of discard mortality and the size distribution of discards.	
2	Examine current procedures for site (cluster) selection, including alternate site/mode interviewing and determine best practices (clustering of sites, eliminating alternate site/mode interviewing, sample weighting, etc.).	
3	Evaluate current procedures for updating site register (addition of new sites, removing inactive sites, etc.) and pressure matrix. Based upon these evaluations, update procedures.	
4	Examine potential errors in variance estimation. In particular, consider potential errors in aggregation of variance among strata.	Aggregation of variances among strata (post strata) may be invalid because estimators may not be independent (eg. catch type). Existing data could be used to account for correlations.
4	Develop/incorporate techniques for small/medium area estimation (catch and effort) where appropriate.	Small and medium domain estimation
4	Where possible, develop methodologies for independently validating self-reported data. This may require independent studies to develop correction factors for over- or under-reporting.	This is currently done in some cases (validation of for-hire effort, at-sea observations of for-hire catch).
5	Solicit formal scientific reviews of the entire statistical program for marine recreational fisheries.	National impact; will become higher priority as the redesign implementation gets underway
6	Evaluate possible effort covariates e.g., bait sales, tackle sales, fuel sales.	Use covariates to validate trends in effort estimates.
7	Explore use and feasibility of alternate reporting options (web/email/fax) for catch and/or effort surveys.	Any survey should include the possibility of utilizing alternative reporting options. However, the consequences of implementing these options must also be considered.

Atlantic Region Prioritized Recommendations		
Priority	Recommendation	Comment
1	Evaluate whether estimation procedures are matched appropriately to the sample designs	Currently MRFSS/LPS estimation for information collected on-site does not use nominal or actual selection probabilities. In addition, estimation does not account for multi-stage cluster design of access-point surveys
1	Conduct studies to determine the extent to which existing assumptions/biases affect final estimates (night fishing, private-access fishing, tournament fishing, non-coastal resident fishing, non-traditional gear, non-response errors, etc.).	Test assumptions and estimate the magnitude and degree of bias. Includes examination of coverage errors, non-response errors, and measurement errors. Some assumptions can be tested using existing data, while others may require additional information from existing surveys, or new surveys altogether.
1	Develop methodologies for more efficient and unbiased collection of fishing effort data (registry-based surveys, panel surveys, dual-frame methodologies, field-based approaches, remote sensing techniques).	Improve efficiency of telephone surveys of fishing effort. Sampling from comprehensive registry of anglers. Interim approaches could use dual-frame methodologies or panel surveys. Telephone surveys must also consider the increasing occurrence of cell phone-only households. A pilot panel study was conducted in NJ in 2006, and ST anticipates initiating another panel survey in 2007. In addition, NC is a likely candidate for a dual-frame study using incomplete license-frame and RDD methodology.
1	Develop methodologies to provide better estimates of discarded catch, as well as estimates of discard mortality and the size distribution of discards.	
2	Implement survey methods to generate more precise state-level estimates for all species (sub-state or to meet management needs).	Increase sample sizes. Also a Stratification issue.
2	Generate more timely wave and final estimates (more timely processing of data and estimation)	Limited by staffing constraints and stratification
2	Establish and document data management and collection goals, minimum data elements, procedures, timeliness of data availability, and QA/QC (where appropriate, utilize existing frameworks of FINs, FIS, and ACCSP).	Where appropriate, establish standard definitions and protocols, develop metadata for surveys, and document regulatory/management changes. Utilize existing frameworks of FINs, FIS, and ACCSP to the greatest extent possible.
2	Examine current procedures for site (cluster) selection, including alternate site/mode interviewing and determine best practices (clustering of sites, eliminating alternate site/mode interviewing, sample weighting, etc.).	ST1 staff examining effects of alternate site interviewing and sample weighting.
3	Identify gaps in coverage of for-hire sampling frames and assess potential bias (catch and effort frames).	Sampling Frame Issue. This is particularly a problem for small charters and guide boats.
3	Evaluate current procedures for updating site register (addition of new sites, removing inactive sites, etc.) and pressure matrix. Based upon these evaluations, update procedures.	
3	Expand sampling frames to include Anadromous fishing access points (add upstream sites).	
3	Examine the possibility of providing estimates for additional waves (wave 1 sampling) and/or at finer levels of temporal resolution (1-month waves) as required by management.	
4	Examine the feasibility of using logbooks to monitor catch, effort and tracking vessel histories for all vessels in the for hire sector.	Establishing logbook programs is beyond the control of the Operations Team. However, the Team agrees that the feasibility of using logbooks should be examined either as independent data collection tools or as components of dual-frame methodologies. Logbook data collected through NERO VTR program is integrated with FHS in a dual-frame methodology to produce final for-hire effort estimates of the Atlantic Coast.
4	Expand Atlantic Highly Migratory Species (HMS) data collection programs to meet management purposes	Large Pelagics Survey currently conducted in Northeast (ME-VA), and NC utilizes a catch card program.
5	Develop and/or implement existing procedures for collecting more detailed effort information (area fished, depth fished, fishing techniques, duration of trips, depth of catch, target species, port/departure of return, etc.).	
5	Where possible, develop methodologies for independently validating self-reported data. This may require independent studies to develop correction factors for over- or under-reporting.	This is currently done in some cases (validation of for-hire effort, at-sea observations of for-hire catch).

Atlantic Region Prioritized Recommendations		
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6	Develop/incorporate techniques for small/medium area estimation (catch and effort) where appropriate.	Small and medium domain estimation
6	Develop new and/or implement existing procedures for collecting more detailed biological information (hard parts, lengths, weights, sex, etc.)	Some surveys currently have a mechanism for collecting biological information.
7	Examine potential errors in variance estimation. In particular, consider potential errors in aggregation of variance among strata.	Aggregation of variances among strata (post strata) may be invalid because estimators may not be independent (eg. catch type). Existing data could be used to account for correlations.
7	Evaluate possible effort covariates e.g., bait sales, tackle sales, fuel sales.	Use covariates to validate trends in effort estimates.
7	Explore use and feasibility of Vessel monitoring/electronic log books	
8	Solicit formal scientific reviews of the entire statistical program for marine recreational fisheries.	THE OT recommends reviews of individual survey components.
9	Explore possibility of weekly catch and effort estimates for the for-hire sector in support of in-season quota monitoring and/or IFQ. Electronic reporting for the for-hire sector would facilitate more timely reporting.	For-hire survey currently produces weekly effort estimates
9	Collect information on Interactions with non-fish species such as marine mammals, sea turtles, birds, corals, etc.	
10	Explore use and feasibility of alternate reporting options (web/email/fax) for catch and/or effort surveys.	Any survey should include the possibility of utilizing alternative reporting options. However, the consequences of implementing these options must also be considered.

Pacific Region Prioritized Recommendations		
Priority	Recommendation	Comment
1	Implement survey methods to generate more precise state-level estimates for all species (sub-state or to meet management needs).	Increase sample sizes. Also a Stratification issue.
1	Establish and document data management and collection goals, minimum data elements, procedures, timeliness of data availability, and QA/QC (where appropriate, utilize existing frameworks of FINs, FIS, and ACCSP).	Where appropriate, establish standard definitions and protocols, develop metadata for surveys, and document regulatory/management changes. Utilize existing frameworks of FINs, FIS, and ACCSP to the greatest extent possible.
1	Allow for regional control over phone survey	Surveys utilizing state license frames are being implemented by RecFIN.
1	Develop and/or implement existing procedures for collecting more detailed effort information (area fished, depth fished, fishing techniques, duration of trips, depth of catch, target species, port/departure of return, etc.).	
1	Develop methodologies for more efficient and unbiased collection of fishing effort data (registry-based surveys, panel surveys, dual-frame methodologies, field-based approaches, remote sensing techniques).	Improve efficiency of telephone surveys of fishing effort and provide complete coverage of the angling population. Eventually, this will involve sampling from a comprehensive registry of anglers. Interim approaches could utilize dual-frame surveys that utilize incomplete license databases and RDD methodologies or panel surveys. Telephone surveys must also consider the increasing occurrence of cell phone-only households.. Currently utilizing license frames and on-site procedures for collecting effort data in some states/modes.
1	Develop methodologies to provide better estimates of discarded catch, as well as estimates of discard mortality and the size distribution of discards.	This is currently done for some states/modes.
1	Examine the possibility of providing estimates for additional waves (wave 1 sampling) and/or at finer levels of temporal resolution (1-month waves) as required by management.	Currently producing monthly estimates.
2	Conduct studies to determine the extent to which existing assumptions/biases affect final estimates (night fishing, private-access fishing, tournament fishing, non-coastal resident fishing, non-traditional gear, non-response errors, etc.).	Test assumptions and estimate the magnitude and degree of bias. Includes examination of coverage errors, non-response errors, and measurement errors. Some assumptions can be tested using existing data, while others may require additional information from existing surveys, or new surveys altogether.
2	Generate more timely wave and final estimates (more timely processing of data and estimation)	Limited by staffing constraints and stratification
2	Identify gaps in coverage of for-hire sampling frames and assess potential bias (catch and effort frames).	Sampling Frame Issue. Currently being done in CA.
2	Examine the feasibility of using logbooks to monitor catch, effort and tracking vessel histories for all vessels in the for hire sector.	Establishing logbook programs is beyond the control of the Operations Team. However, the Team agrees that the feasibility of using logbooks should be examined either as independent data collection tools or as components of dual-frame methodologies. Currently being done in CA.
2	Examine current procedures for site (cluster) selection, including alternate site/mode interviewing and determine best practices (clustering of sites, eliminating alternate site/mode interviewing, sample weighting, etc.).	
3	Evaluate whether estimation procedures are matched appropriately to the sample designs	Currently MRFSS/LPS estimation for information collected on-site does not use nominal or actual selection probabilities. In addition, estimation does not account for multi-stage cluster design of access-point surveys
3	Evaluate current procedures for updating site register (addition of new sites, removing inactive sites, etc.) and pressure matrix. Based upon these evaluations, update procedures.	
4	Expand sampling frames to include Anadromous fishing access points (add upstream sites).	Done (salmon)
5	Solicit formal scientific reviews of the entire statistical program for marine recreational fisheries.	THE OT recommends reviews of individual survey components.

Pacific Region Prioritized Recommendations		
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5	Develop and/or implement existing procedures for collecting more detailed biological information (hard parts, lengths, weights, sex, etc.)	Some surveys currently have a mechanism for collecting biological information.
6	Examine potential errors in variance estimation. In particular, consider potential errors in aggregation of variance among strata.	Aggregation of variances among strata (post strata) may be invalid because estimators may not be independent (eg. catch type). Existing data could be used to account for correlations.
6	Develop/incorporate techniques for small/medium area estimation (catch and effort) where appropriate.	Small and medium domain estimation. Information for estimating catch and effort by management area is currently collected.
6	Where possible, develop methodologies for independently validating self-reported data. This may require independent studies to develop correction factors for over- or under-reporting.	This is currently done in some cases (validation of for-hire effort, at-sea observations of for-hire catch).
7	Evaluate possible effort covariates e.g., bait sales, tackle sales, fuel sales.	Use covariates to validate trends in effort estimates.
7	Explore use and feasibility of Vessel monitoring/electronic log books	
8	Explore use and feasibility of alternate reporting options (web/email/fax) for catch and/or effort surveys.	Any survey should include the possibility of utilizing alternative reporting options. However, the consequences of implementing these options must also be considered. On Pacific Coast, alternate reporting options may be useful for CPFV.
9	Explore possibility of weekly catch and effort estimates for the for-hire sector in support of in-season quota monitoring and/or IFQ. Electronic reporting for the for-hire sector would facilitate more timely reporting.	For-hire survey currently produces weekly effort estimates
10	Collect information on Interactions with non-fish species such as marine mammals, sea turtles, birds, corals, etc.	Currently collecting information about marine mammal interactions.

Gulf of Mexico Region Prioritized Recommendations		
Priority	Item	Comment
1	Evaluate whether estimation procedures are matched appropriately to the sample designs	Currently MRFSS/LPS estimation for information collected on-site does not use nominal or actual selection probabilities. In addition, estimation does not account for multi-stage cluster design of access-point surveys
1	Conduct studies to determine the extent to which existing assumptions/biases affect final estimates (night fishing, private-access fishing, tournament fishing, non-coastal resident fishing, non-traditional gear, non-response errors, etc.).	Test assumptions and estimate the magnitude and degree of bias. Includes examination of coverage errors, non-response errors, and measurement errors. Some assumptions can be tested using existing data, while others may require additional information from existing surveys, or new surveys altogether.
1	Expand Atlantic Highly Migratory Species (HMS) data collection programs to meet management purposes	Large Pelagics Survey currently conducted in Northeast (ME-VA), and NC utilizes a catch card program.
1	Develop methodologies for more efficient and unbiased collection of fishing effort data (registry-based surveys, panel surveys, dual-frame methodologies, field-based approaches, remote sensing techniques).	Improve efficiency of telephone surveys of fishing effort. Ultimately utilize comprehensive registry of anglers. Interim methodologies could use dual-frame surveys utilizing incomplete license databases and RDD methodologies or panel surveys. Telephone surveys must also consider the increasing occurrence of cell phone-only households. Currently conducting a pilot survey in the GOM to assess feasibility of using dual-frame methodologies (incomplete license database and RDD).
1	Develop methodologies to provide better estimates of discarded catch, as well as estimates of discard mortality and the size distribution of discards.	
2	Implement survey methods to generate more precise state-level estimates for all species (sub-state or to meet management needs).	Increase sample sizes. Also a Stratification issue.
2	Examine the feasibility of using logbooks to monitor catch, effort and tracking vessel histories for all vessels in the for hire sector.	Establishing logbook programs is beyond the control of the Operations Team. However, the Team agrees that the feasibility of using logbooks should be examined either as independent data collection tools or as components of dual-frame methodologies.
2	Evaluate current procedures for updating site register (addition of new sites, removing inactive sites, etc.) and pressure matrix. Based upon these evaluations, update procedures.	
2	Examine the possibility of providing estimates for additional waves (wave 1 sampling) and/or at finer levels of temporal resolution (1-month waves) as required by management.	
3	Generate more timely wave and final estimates (more timely processing of data and estimation)	Limited by staffing constraints and stratification
3	Identify gaps in coverage of for-hire sampling frames and assess potential bias (catch and effort frames).	Sampling Frame Issue. This is particularly a problem for small charters and guide boats.
3	Examine current procedures for site (cluster) selection, including alternate site/mode interviewing and determine best practices (clustering of sites, eliminating alternate site/mode interviewing, sample weighting, etc.).	
4	Establish and document data management and collection goals, minimum data elements, procedures, timeliness of data availability, and QA/QC (where appropriate, utilize existing frameworks of FINs, FIS, and ACCSP).	Where appropriate, establish standard definitions and protocols, develop metadata for surveys, and document regulatory/management changes. Utilize existing frameworks of FINs, FIS, and ACCSP to the greatest extent possible.
5	Expand sampling frames to include Anadromous fishing access points (add upstream sites).	
6	Develop and/or implement existing procedures for collecting more detailed biological information (hard parts, lengths, weights, sex, etc.)	Some surveys currently have a mechanism for collecting biological information.
6	Develop and/or implement existing procedures for collecting more detailed effort information (area fished, depth fished, fishing techniques, duration of trips, depth of catch, target species, port/departure of return, etc.).	
7	Where possible, develop methodologies for independently validating self-reported data. This may require independent studies to develop correction factors for over- or under-reporting.	This is currently done in some cases (validation of for-hire effort, at-sea observations of for-hire catch).

Gulf of Mexico Region Prioritized Recommendations		
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8	Examine potential errors in variance estimation. In particular, consider potential errors in aggregation of variance among strata.	Aggregation of variances among strata (post strata) may be invalid because estimators may not be independent (eg. catch type). Existing data could be used to account for correlations.
8	Explore use and feasibility of Vessel monitoring/electronic log books	
8	Solicit formal scientific reviews of the entire statistical program for marine recreational fisheries.	THE OT recommends reviews of individual survey components.
9	Evaluate possible effort covariates e.g., bait sales, tackle sales, fuel sales.	Use covariates to validate trends in effort estimates.
10	Explore use and feasibility of alternate reporting options (web/email/fax) for catch and/or effort surveys.	Any survey should include the possibility of utilizing alternative reporting options. However, the consequences of implementing these options must also be considered.
11	Explore possibility of weekly catch and effort estimates for the for-hire sector in support of in-season quota monitoring and/or IFQ. Electronic reporting for the for-hire sector would facilitate more timely reporting.	For-hire survey currently produces weekly effort estimates
11	Collect information on interactions with non-fish species such as marine mammals, sea turtles, birds, corals, etc.	

Alaska Region Prioritized Recommendations		
Priority	Item	Comment
1	Evaluate whether estimation procedures are matched appropriately to the sample designs	Currently MRFSS/LPS estimation for information collected on-site does not use nominal or actual selection probabilities. In addition, estimation does not account for multi-stage cluster design of access-point surveys
1	Identify gaps in coverage of for-hire sampling frames and assess potential bias (catch and effort frames).	Sampling Frame Issue. This is particularly a problem for small charters and guide boats.
1	Examine the feasibility of using logbooks to monitor catch, effort and tracking vessel histories for all vessels in the for hire sector.	Establishing logbook programs is beyond the control of the Operations Team. However, the Team agrees that the feasibility of using logbooks should be examined either as independent data collection tools or as components of dual-frame methodologies.
1	Establish and document data management and collection goals, minimum data elements, procedures, timeliness of data availability, and QA/QC (where appropriate, utilize existing frameworks of FINs, FIS, and ACCSP).	Where appropriate, establish standard definitions and protocols, develop metadata for surveys, and document regulatory/management changes. Utilize existing frameworks of FINs, FIS, and ACCSP to the greatest extent possible.
1	Develop methodologies for more efficient and unbiased collection of fishing effort data (registry-based surveys, panel surveys, dual-frame methodologies, field-based approaches, remote sensing techniques).	Improve efficiency of telephone surveys of fishing effort and provide complete coverage of the angling population. Eventually, this will involve sampling from a comprehensive registry of anglers. Interim approaches could utilize dual-frame surveys that utilize incomplete license databases and RDD methodologies or panel surveys. Telephone surveys must also consider the increasing occurrence of cell phone-only households.
1	Develop methodologies to provide better estimates of discarded catch, as well as estimates of discard mortality and the size distribution of discards.	
1	Examine current procedures for site (cluster) selection, including alternate site/mode interviewing and determine best practices (clustering of sites, eliminating alternate site/mode interviewing, sample weighting, etc.).	
2	Conduct studies to determine the extent to which existing assumptions/biases affect final estimates (night fishing, private-access fishing, tournament fishing, non-coastal resident fishing, non-traditional gear, non-response errors, etc.).	Test assumptions and estimate the magnitude and degree of bias. Includes examination of coverage errors, non-response errors, and measurement errors. Some assumptions can be tested using existing data, while others may require additional information from existing surveys, or new surveys altogether.
2	Generate more timely wave and final estimates (more timely processing of data and estimation)	Limited by staffing constraints and stratification
3	Implement survey methods to generate more precise state-level estimates for all species (sub-state or to meet management needs).	Increase sample sizes. Also a Stratification issue.
3	Evaluate current procedures for updating site register (addition of new sites, removing inactive sites, etc.) and pressure matrix. Based upon these evaluations, update procedures.	
4	Examine the possibility of providing estimates for additional waves (wave 1 sampling) and/or at finer levels of temporal resolution (1-month waves) as required by management.	
5	Where possible, develop methodologies for independently validating self-reported data. This may require independent studies to develop correction factors for over- or under-reporting.	This is currently done in some cases (validation of for-hire effort, at-sea observations of for-hire catch).
6	Examine potential errors in variance estimation. In particular, consider potential errors in aggregation of variance among strata.	Aggregation of variances among strata (post strata) may be invalid because estimators may not be independent (eg. catch type). Existing data could be used to account for correlations.
6	Explore use and feasibility of Vessel monitoring/electronic log books	
6	Develop and/or implement existing procedures for collecting more detailed effort information (area fished, depth fished, fishing techniques, duration of trips, depth of catch, target species, port/departure of return, etc.).	
7	Solicit formal scientific reviews of the entire statistical program for marine recreational fisheries.	THE OT recommends reviews of individual survey components.

Alaska Region Prioritized Recommendations		
Priority	Item	Comment
7	Develop and/or implement existing procedures for collecting more detailed biological information (hard parts, lengths, weights, sex, etc.)	Some surveys currently have a mechanism for collecting biological information.
8	Evaluate possible effort covariates e.g., bait sales, tackle sales, fuel sales.	Use covariates to validate trends in effort estimates.
8	Develop/incorporate techniques for small/medium area estimation (catch and effort) where appropriate.	Small and medium domain estimation
9	Explore possibility of weekly catch and effort estimates for the for-hire sector in support of in-season quota monitoring and/or IFQ. Electronic reporting for the for-hire sector would facilitate more timely reporting.	For-hire survey currently produces weekly effort estimates
10	Explore use and feasibility of alternate reporting options (web/email/fax) for catch and/or effort surveys.	Any survey should include the possibility of utilizing alternative reporting options. However, the consequences of implementing these options must also be considered.
11	Collect information on Interactions with non-fish species such as marine mammals, sea turtles, birds, corals, etc.	

Western Pacific Region Prioritized Recommendations		
Priority	Item	Comment
1	Evaluate whether estimation procedures are matched appropriately to the sample designs	Currently MRFSS/LPS estimation for information collected on-site does not use nominal or actual selection probabilities. In addition, estimation does not account for multi-stage cluster design of access-point surveys
1	Conduct studies to determine the extent to which existing assumptions/biases affect final estimates (night fishing, private-access fishing, tournament fishing, non-coastal resident fishing, non-traditional gear, non-response errors, etc.).	Test assumptions and estimate the magnitude and degree of bias. Includes examination of coverage errors, non-response errors, and measurement errors. Some assumptions can be tested using existing data, while others may require additional information from existing surveys, or new surveys altogether.
1	Establish and document data management and collection goals, minimum data elements, procedures, timeliness of data availability, and QA/QC (where appropriate, utilize existing frameworks of FINs, FIS, and ACCSP).	Where appropriate, establish standard definitions and protocols, develop metadata for surveys, and document regulatory/management changes. Utilize existing frameworks of FINs, FIS, and ACCSP to the greatest extent possible.
1	Allow for regional control over phone survey	
1	Develop methodologies for more efficient and unbiased collection of fishing effort data (registry-based surveys, panel surveys, dual-frame methodologies, field-based approaches, remote sensing techniques).	Improve efficiency of telephone surveys of fishing effort and provide complete coverage of the angling population. Eventually, this will involve sampling from a comprehensive registry of anglers. Interim approaches could utilize dual-frame surveys that utilize incomplete license databases and RDD methodologies or panel surveys. Telephone surveys must also consider the increasing occurrence of cell phone-only households.
1	Evaluate current procedures for updating site register (addition of new sites, removing inactive sites, etc.) and pressure matrix. Based upon these evaluations, update procedures.	
1	Examine the possibility of providing estimates for additional waves (wave 1 sampling) and/or at finer levels of temporal resolution (1-month waves) as required by management.	
1	Examine current procedures for site (cluster) selection, including alternate site/mode interviewing and determine best practices (clustering of sites, eliminating alternate site/mode interviewing, sample weighting, etc.).	
2	Examine potential errors in variance estimation. In particular, consider potential errors in aggregation of variance among strata.	Aggregation of variances among strata (post strata) may be invalid because estimators may not be independent (eg. catch type). Existing data could be used to account for correlations.
2	Generate more timely wave and final estimates (more timely processing of data and estimation)	Limited by staffing constraints and stratification
3	Implement survey methods to generate more precise state-level estimates for all species (sub-state or to meet management needs).	Increase sample sizes. Also a Stratification issue.
3	Examine the feasibility of using logbooks to monitor catch, effort and tracking vessel histories for all vessels in the for hire sector.	Establishing logbook programs is beyond the control of the Operations Team. However, the Team agrees that the feasibility of using logbooks should be examined either as independent data collection tools or as components of dual-frame methodologies.
4	Identify gaps in coverage of for-hire sampling frames and assess potential bias (catch and effort frames).	Sampling Frame Issue. This is particularly a problem for small charters and guide boats.
4	Develop methodologies to provide better estimates of discarded catch, as well as estimates of discard mortality and the size distribution of discards.	
5	Develop/incorporate techniques for small/medium area estimation (catch and effort) where appropriate.	Small and medium domain estimation
5	Explore use and feasibility of Vessel monitoring/electronic log books	
5	Solicit formal scientific reviews of the entire statistical program for marine recreational fisheries.	THE OT recommends reviews of individual survey components.
5	Explore use and feasibility of alternate reporting options (web/email/fax) for catch and/or effort surveys.	Any survey should include the possibility of utilizing alternative reporting options. However, the consequences of implementing these options must also be considered.
6	Develop and/or implement existing procedures for collecting more detailed biological information (hard parts, lengths, weights, sex, etc.)	Some surveys currently have a mechanism for collecting biological information.

Western Pacific Region Prioritized Recommendations

Priority	Item	Comment
6	Develop and/or implement existing procedures for collecting more detailed effort information (area fished, depth fished, fishing techniques, duration of trips, depth of catch, target species, port/departure of return, etc.).	
6	Where possible, develop methodologies for independently validating self-reported data. This may require independent studies to develop correction factors for over- or under-reporting.	This is currently done in some cases (validation of for-hire effort, at-sea observations of for-hire catch).
7	Evaluate possible effort covariates e.g., bait sales, tackle sales, fuel sales.	Use covariates to validate trends in effort estimates.
8	Collect information on Interactions with non-fish species such as marine mammals, sea turtles, birds, corals, etc.	
9	Develop unique sampling methodologies, data elements (vessel characteristics, owner and operator information, etc.), reporting requirements, etc.. for the for-hire sector.	The OT agrees that the For-Hire Sector needs different reporting requirements, and in most cases, different data collection programs have been implemented. Exceptions include Hawaii and Puerto Rico. The NRC Report recommended treating the for-hire sector as commercial and implementing mandatory logbook reporting. These are policy issues and are beyond the scope of the OT. The OT does recommend exploring the feasibility of using logbooks to monitor for-hire catch and effort either independently or as a component of a dual-frame methodology.
10	Identify cell-phone only households (separate from no telephone household?) in intercept survey to adjust household survey effort	Currently identify households as having a landline telephone or not. Not sure why it would be important to isolate cell-phone only households
10	Explore possibility of weekly catch and effort estimates for the for-hire sector in support of in season quota monitoring and/or IFQ. Electronic reporting for the for-hire sector would facilitate more timely reporting.	For-hire survey currently produces weekly effort estimates

Caribbean Region Prioritized Recommendations		
Priority	Item	Comment
1	Implement survey methods to generate more precise state-level estimates for all species (sub-state or to meet management needs).	Increase sample sizes. Also a Stratification issue.
1	Develop unique sampling methodologies, data elements (vessel characteristics, owner and operator information, etc.), reporting requirements, etc. for the for-hire sector.	For-hire effort is currently sampled through traditional MRFSS (Coastal Household Telephone Survey) methodologies.
1	Develop methodologies for more efficient and unbiased collection of fishing effort data (registry-based surveys, panel surveys, dual-frame methodologies, field-based approaches, remote sensing techniques).	Improve efficiency of telephone surveys of fishing effort and provide complete coverage of the angling population. Eventually, this will involve sampling from a comprehensive registry of anglers. Interim approaches could utilize dual-frame surveys that utilize incomplete license databases and RDD methodologies or panel surveys. Telephone surveys must also consider the increasing occurrence of cell phone-only households.
1	Expand recreational fishing surveys to include USVI.	
2	Conduct studies to determine the extent to which existing assumptions/biases affect final estimates (night fishing, private-access fishing, tournament fishing, non-coastal resident fishing, non-traditional gear, non-response errors, etc.).	Test assumptions and estimate the magnitude and degree of bias. Includes examination of coverage errors, non-response errors, and measurement errors. Some assumptions can be tested using existing data, while others may require additional information from existing surveys, or new surveys altogether.
2	Generate more timely wave and final estimates (more timely processing of data and estimation)	Limited by staffing constraints and stratification
3	Establish and document data management and collection goals, minimum data elements, procedures, timeliness of data availability, and QA/QC (where appropriate, utilize existing frameworks of FINs, FIS, and ACCSP).	Where appropriate, establish standard definitions and protocols, develop metadata for surveys, and document regulatory/management changes. Utilize existing frameworks of FINs, FIS, and ACCSP to the greatest extent possible.
3	Develop methodologies to provide better estimates of discarded catch, as well as estimates of discard mortality and the size distribution of discards.	
4	Examine the feasibility of using logbooks to monitor catch, effort and tracking vessel histories for all vessels in the for hire sector.	Establishing logbook programs is beyond the control of the Operations Team. However, the Team agrees that the feasibility of using logbooks should be examined either as independent data collection tools or as components of dual-frame methodologies.
5	Expand Atlantic Highly Migratory Species (HMS) data collection programs to meet management purposes	
5	Examine the possibility of providing estimates for additional waves (wave 1 sampling) and/or at finer levels of temporal resolution (1-month waves) as required by management.	
5	Examine current procedures for site (cluster) selection, including alternate site/mode interviewing and determine best practices (clustering of sites, eliminating alternate site/mode interviewing, sample weighting, etc.).	
6	Solicit formal scientific reviews of the entire statistical program for marine recreational fisheries.	THE OT recommends reviews of individual survey components.
7	Develop and/or implement existing procedures for collecting more detailed biological information (hard parts, lengths, weights, sex, etc.)	Some surveys currently have a mechanism for collecting biological information.
7	Develop and/or implement existing procedures for collecting more detailed effort information (area fished, depth fished, fishing techniques, duration of trips, depth of catch, target species, port/departure of return, etc.).	
8	Evaluate possible effort covariates e.g., bait sales, tackle sales, fuel sales.	Use covariates to validate trends in effort estimates.
9	Explore use and feasibility of Vessel monitoring/electronic log books	
10	Collect information on Interactions with non-fish species such as marine mammals, sea turtles, birds, corals, etc.	
11	Explore use and feasibility of alternate reporting options (web/email/fax) for catch and/or effort surveys.	Any survey should include the possibility of utilizing alternative reporting options. However, the consequences of implementing these options must also be considered.
NR	Evaluate whether estimation procedures are matched appropriately to the sample designs	Currently MRFSS/LPS estimation for information collected on-site does not use nominal or actual selection probabilities. In addition, estimation does not account for multi-stage cluster design of access-point surveys