Indices of Abundance Score Cards

SEDAR 29 Panel

SEDAR29-WP-23

Date Submitted: 31 May 2012

Please site this document as follows:

SEDAR 29. 2012. Indices of abundance score cards. SEDAR29-WP-23. SEDAR, North Charleston, SC.

Evaluation of Abundance Indices Gulf of Mexico Blacktip Shark: Relative abundance of blacktip shark from the eastern GOM (SEDAR29-WP-01)

DESCRIPTION OF THE DATA SOURCE

	Not Applicable	Absent	Incomplete	Complete
1. Fishery Independent Indices				
A. Describe the survey design (e.g. fixed sampling sites, random stratified sampling), location, seasons/months and years of sampling.				✔
B. Describe sampling methodology (e.g. gear, vessel, soak time etc.)				✔
C. Describe any changes in sampling methodology (e.g. gear, vessel, sample design etc.)				✔
D. Describe the variables reported in the data set (e.g. location, time, temperature, catch, effort etc.).				✔
E. What species or species assemblages are targeted by this survey (e.g. red snapper, reef fish, pelagic).				✔
F. Describe the size/age range that the index applies to. Include supporting figures (e.g. size comp) if available.				✔
2. Fishery Dependent Indices				
A. Describe the data source and type of fishery (e.g. commercial handline, commercial longline, recreational hook and line etc.).	✔			
B. Describe any changes to reporting requirements, variables reported, etc.	✔			
C. Describe the variables reported in the data set (e.g. location, time, temperature, catch, effort etc.).	✔			
D Describe the size/age range that the index applies to. Include supporting figures (e.g. size comp) if available.	✔			

METHODS

1. Data Reduction and Exclusions				
A. Describe any data exclusions (e.g. gears, fishing modes, sampling areas etc.). Report the number of records removed and justify removal.	✔			
B. Describe data reduction techniques (if any) used to address targeting (e.g. Stephens and MacCall, 2004; gear configuration, species assemblage etc).	✔			
C. Discuss procedures used to identify outliers. How many were identified? Were they excluded?	✔			

Working Group Comments:

	Not Applicable	Absent	Incomplete	Complete
2. Management Regulations (for FD Indices)				
A. Provide (or cite) history of management regulations (e.g. bag limits, size limits, trip limits, closures etc.).	✔			
B. Describe the effects (if any) of management regulations on CPUE	✔			
C. Discuss methods used (if any) to minimize the effects of management measures on the CPUE series.	✔			
3. Describe Analysis Dataset (after exclusions and other treatments)				
A. Provide tables and/or figures of number of observations by factors (including year, area, etc.) and interaction terms.				✔
B. Include tables and/or figures of number of positive observations by factors and interaction terms.			✔	
C. Include tables and/or figures of the proportion positive observations by factors and interaction terms.			✔	
D. Include tables and/or figures of average (unstandardized) CPUE by factors and interaction terms.			✔	
E. Include annual maps of locations of survey sites (or fishing trips) and associated catch rates ***OR*** supply the raw data needed to construct these maps (Observation, Year, Latitude, Longitude (or statistical grid, area), Catch, Effort).			✔	
F. Describe the effort variable and the units. If more than one effort variable is present in the dataset, justify selection.				✔
G. What are the units of catch (e.g. numbers or biomass, whole weight, gutted weight, kilograms, pounds).				✔
4. Model Standardization				
A. Describe model structure (e.g. delta-lognormal)				✔
B. Describe construction of GLM components (e.g. forward selection from null etc.)				✔
C. Describe inclusion criteria for factors and interactions terms.				✔
D. Were YEAR*FACTOR interactions included in the model? If so, how (e.g. fixed effect, random effect)? Were random effects tested for significance using a likelihood ratio test?				✔
E. Provide a table summarizing the construction of the GLM components.				✔
F. Summarize model statistics of the mixed model formulation(s) (e.g. log likelihood, AIC, BIC etc.)				✔
G. Report convergence statistics.				✔

Working Group Comments:

3. B-D. tables or figures by year included, others AOD

3. E. plot of all locations together, yearly plots AOD

MODEL DIAGNOSTICS

Comment: Other model structures are possible and acceptable. Please provide appropriate diagnostics to the CPUE indices working group.

	Not Applicable	Absent	Incomplete	Complete
1. Binomial Component				
A. Include plots of the chi-square residuals by factor.			✔	
B. Include plots of predicted and observed proportion of positive trips by year and factor (e.g. year*area)			✔	
C. Report overdispersion parameter and other fit statistics (e.g. chi-square / degrees of freedom).				✔
2. Lognormal/Gamma Component				
A. Include histogram of log(CPUE) or a histogram of the residuals of the model on CPUE. Overlay the expected distribution.				✔
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor.			✔	
C. Include QQ-plot – (e.g. Student deviance residuals vs. theoretical quantiles), Overlay expected distribution.				✔
D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.			✔	
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.			✔	
F. Include plots of the residuals by factor			✔	
3. Poisson Component				
A. Report overdispersion parameter and other fit statistics (e.g. chi-square / degrees of freedom).	✔			
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor.	✔			
C. Include QQ-plot – (e.g. Student deviance residuals vs. theoretical quantiles), Overlay expected distribution.	✔			
D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.	✔			
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.	✔			
4. Zero-inflated model				
A. Include ROC curve to quantify goodness of fit.	✔			
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor).	✔			
C. Include QQ-plot (e.g. Student dev. residuals vs. theoretical quantiles), Overlay expected distribution.	✔			

Working Group Comments:

1. A/B figs by year others available on demand (AOD)

2. B, D-F some available by year others AOD

]

The feasibility of this diagnostic is still under review.

MODEL DIAGNOSTICS (CONT.)

Not Applicable	Absent	Incomplete	Complete

Working Group Comments:

D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.	✔			
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.	✔			

MODEL RESULTS

A. Tables of Nominal CPUE, Standardized CPUE, Observations, Positive Observations, Proportion Positive Observations and Coefficients of Variation (CVs). Other statistics may also be appropriate to report			✔	
B. Figure of Nominal and Standardized Indices with measure of variance (i.e. CVs).				✔

IF MULTIPLE MODEL STRUCTURES WERE CONSIDERED:

(***Note: this is always recommended but required when model diagnostics are poor***.)

1. Plot of resulting indices and estimates of variance	✔			
2. Table of model statistics (e.g. AIC criteria)	✔			

A. proportion positives AOD

	Date Received	*Workshop Recommendation*	*Revision Deadline ****	*Author and Rapporteur Signatures*
First Submission	reviewed 3/21/2012	sensitivity index		
Revision				

*The revision deadline is negotiated by the author, the SEDAR coordinator and the CPUE rapporteur. The author **DOES NOT** commit to any **LEGAL OBLIGATION** by agreeing to submit a manuscript before this deadline. The maximum penalty for failure to submit a revised document prior to the submission deadline is rejection of the CPUE series.*

Justification of Working Group Recommendation

-age 0 indices not evaluated because will not be used in stock assessment model
-assessment model will use age 1+ data only

PC GN Juv - base index in 2005/2006 assessment
disadvantages - limited to northeastern GOM
advantages - long time series, standardized FI survey, length data available

MML GN Juv - excluded in 2005/2006 assessment
disadvantages - limited to eastern GOM
advantages - long time series, standardized FI survey, length data available, spatial coverage does include a large portion of the FL east coast waters

PC MML GN - new index
advantages - better spatial coverage, reduces some of the inter-annual variability

The PC, MML and MS GN (SEDAR29-WP-13) use similar gear (PC and MS gear are identical) with similar selectivities. Recommended to combine indices and use sampling area as a weighting factor. Individual and PC/Mote combined indices will be reviewed following analysis of PC+MML+MS combined index.

PC GN Juv (APR-OCT, 1995-2010) - sensitivity
MML GN Juv (MAR-NOV,1999-2004)-sensitivity
PC MML GN (MAR-NOV, 1995-2010) - exclude

Evaluation of Abundance Indices Gulf of Mexico Blacktip Shark: Standardized catch rates of blacktip sharks in the U.S. Gulf of Mexico from BLLOP (SEDAR29-WP-02)

DESCRIPTION OF THE DATA SOURCE

	Not Applicable	Absent	Incomplete	Complete
1. Fishery Independent Indices				
A. Describe the survey design (e.g. fixed sampling sites, random stratified sampling), location, seasons/months and years of sampling.	✔			
B. Describe sampling methodology (e.g. gear, vessel, soak time etc.)	✔			
C. Describe any changes in sampling methodology (e.g. gear, vessel, sample design etc.)	✔			
D. Describe the variables reported in the data set (e.g. location, time, temperature, catch, effort etc.).	✔			
E. What species or species assemblages are targeted by this survey (e.g. red snapper, reef fish, pelagic).	✔			
F. Describe the size/age range that the index applies to. Include supporting figures (e.g. size comp) if available.	✔			
2. Fishery Dependent Indices				
A. Describe the data source and type of fishery (e.g. commercial handline, commercial longline, recreational hook and line etc.).				✔
B. Describe any changes to reporting requirements, variables reported, etc.				✔
C. Describe the variables reported in the data set (e.g. location, time, temperature, catch, effort etc.).				✔
D Describe the size/age range that the index applies to. Include supporting figures (e.g. size comp) if available.				✔

Working Group Comments:

METHODS

1. Data Reduction and Exclusions				
A. Describe any data exclusions (e.g. gears, fishing modes, sampling areas etc.). Report the number of records removed and justify removal.	✔			
B. Describe data reduction techniques (if any) used to address targeting (e.g. Stephens and MacCall, 2004; gear configuration, species assemblage etc).	✔			
C. Discuss procedures used to identify outliers. How many were identified? Were they excluded?	✔			

	Not Applicable	Absent	Incomplete	Complete
2. Management Regulations (for FD Indices)				
A. Provide (or cite) history of management regulations (e.g. bag limits, size limits, trip limits, closures etc.).				✔
B. Describe the effects (if any) of management regulations on CPUE				✔
C. Discuss methods used (if any) to minimize the effects of management measures on the CPUE series.				✔
3. Describe Analysis Dataset (after exclusions and other treatments)				
A. Provide tables and/or figures of number of observations by factors (including year, area, etc.) and interaction terms.				✔
B. Include tables and/or figures of number of positive observations by factors and interaction terms.			✔	
C. Include tables and/or figures of the proportion positive observations by factors and interaction terms.			✔	
D. Include tables and/or figures of average (unstandardized) CPUE by factors and interaction terms.			✔	
E. Include annual maps of locations of survey sites (or fishing trips) and associated catch rates ***OR*** supply the raw data needed to construct these maps (Observation, Year, Latitude, Longitude (or statistical grid, area), Catch, Effort).			✔	
F. Describe the effort variable and the units. If more than one effort variable is present in the dataset, justify selection.				✔
G. What are the units of catch (e.g. numbers or biomass, whole weight, gutted weight, kilograms, pounds).				✔
4. Model Standardization				
A. Describe model structure (e.g. delta-lognormal)				✔
B. Describe construction of GLM components (e.g. forward selection from null etc.)				✔
C. Describe inclusion criteria for factors and interactions terms.				✔
D. Were YEAR*FACTOR interactions included in the model? If so, how (e.g. fixed effect, random effect)? Were random effects tested for significance using a likelihood ratio test?				✔
E. Provide a table summarizing the construction of the GLM components.				✔
F. Summarize model statistics of the mixed model formulation(s) (e.g. log likelihood, AIC, BIC etc.)				✔
G. Report convergence statistics.				✔

Working Group Comments:

2. Effects of management discussed and the factors "season" and "research" account for these effects. Catches are recorded not landings, so trip limits do not affect these data

3. B-D. tables or figures by year included, others AOD

3.E. Total effort plotted by grids. Confidentially prevents plotting by individual locations.

MODEL DIAGNOSTICS

Comment: Other model structures are possible and acceptable. Please provide appropriate diagnostics to the CPUE indices working group.

	Not Applicable	Absent	Incomplete	Complete
1. Binomial Component				
A. Include plots of the chi-square residuals by factor.			✔	
B. Include plots of predicted and observed proportion of positive trips by year and factor (e.g. year*area)			✔	
C. Report overdispersion parameter and other fit statistics (e.g. chi-square / degrees of freedom).				✔
2. Lognormal/Gamma Component				
A. Include histogram of log(CPUE) or a histogram of the residuals of the model on CPUE. Overlay the expected distribution.				✔
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor.			✔	
C. Include QQ-plot – (e.g. Student deviance residuals vs. theoretical quantiles), Overlay expected distribution.				✔
D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.			✔	
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.			✔	
F. Include plots of the residuals by factor			✔	
3. Poisson Component				
A. Report overdispersion parameter and other fit statistics (e.g. chi-square / degrees of freedom).	✔			
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor.	✔			
C. Include QQ-plot – (e.g. Student deviance residuals vs. theoretical quantiles), Overlay expected distribution.	✔			
D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.	✔			
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.	✔			
4. Zero-inflated model				
A. Include ROC curve to quantify goodness of fit.	✔			
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor).	✔			
C. Include QQ-plot (e.g. Student dev. residuals vs. theoretical quantiles), Overlay expected distribution.	✔			

Working Group Comments:

1. A/B. figs by year others available on demand (AOD)

2. B, D-F some available by year others AOD

The feasibility of this diagnostic is still under review.

MODEL DIAGNOSTICS (CONT.)

Not Applicable	Absent	Incomplete	Complete

Working Group Comments:

D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.	✔			
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.	✔			

MODEL RESULTS

A. Tables of Nominal CPUE, Standardized CPUE, Observations, Positive Observations, Proportion Positive Observations and Coefficients of Variation (CVs). Other statistics may also be appropriate to report			✔	
B. Figure of Nominal and Standardized Indices with measure of variance (i.e. CVs).				✔

IF MULTIPLE MODEL STRUCTURES WERE CONSIDERED:

(***Note: this is always recommended but required when model diagnostics are poor***.)

1. Plot of resulting indices and estimates of variance	✔			
2. Table of model statistics (e.g. AIC criteria)	✔			

A. requested proportion positives - provided during discussions

	Date Received	*Workshop Recommendation*	*Revision Deadline ****	*Author and Rapporteur Signatures*
First Submission	reviewed 3/21/2012	base index		
Revision				

*The revision deadline is negotiated by the author, the SEDAR coordinator and the CPUE rapporteur. The author **DOES NOT** commit to any **LEGAL OBLIGATION** by agreeing to submit a manuscript before this deadline. The maximum penalty for failure to submit a revised document prior to the submission deadline is rejection of the CPUE series.*

Justification of Working Group Recommendation

BLLOP used as a base index in 2005/2006 assessment

Advantages: longer time series than logbook data, total catch recorded not just landings, management measures taken into effect, length data available

Disadvantages: missing one year, 2001 value very low with high CV - low effort and low catches that year as well

DW recommends BLLOP (JAN-DEC, 1994-2010) as base index

Evaluation of Abundance Indices Gulf of Mexico Blacktip Shark: Indices of blacktip sharks based on NMFS Bottom LL (SEDAR29-WP-03)

	Not Applicable	Absent	Incomplete	Complete
DESCRIPTION OF THE DATA SOURCE				
1. Fishery Independent Indices				
A. Describe the survey design (e.g. fixed sampling sites, random stratified sampling), location, seasons/months and years of sampling.				✔
B. Describe sampling methodology (e.g. gear, vessel, soak time etc.)				✔
C. Describe any changes in sampling methodology (e.g. gear, vessel, sample design etc.)				✔
D. Describe the variables reported in the data set (e.g. location, time, temperature, catch, effort etc.).				✔
E. What species or species assemblages are targeted by this survey (e.g. red snapper, reef fish, pelagic).				✔
F. Describe the size/age range that the index applies to. Include supporting figures (e.g. size comp) if available.				✔
2. Fishery Dependent Indices				
A. Describe the data source and type of fishery (e.g. commercial handline, commercial longline, recreational hook and line etc.).	✔			
B. Describe any changes to reporting requirements, variables reported, etc.	✔			
C. Describe the variables reported in the data set (e.g. location, time, temperature, catch, effort etc.).	✔			
D Describe the size/age range that the index applies to. Include supporting figures (e.g. size comp) if available.	✔			
METHODS				
1. Data Reduction and Exclusions				
A. Describe any data exclusions (e.g. gears, fishing modes, sampling areas etc.). Report the number of records removed and justify removal.	✔			
B. Describe data reduction techniques (if any) used to address targeting (e.g. Stephens and MacCall, 2004; gear configuration, species assemblage etc).	✔			
C. Discuss procedures used to identify outliers. How many were identified? Were they excluded?	✔			

Working Group Comments:

	Not Applicable	Absent	Incomplete	Complete
2. Management Regulations (for FD Indices)				
A. Provide (or cite) history of management regulations (e.g. bag limits, size limits, trip limits, closures etc.).	✔			
B. Describe the effects (if any) of management regulations on CPUE	✔			
C. Discuss methods used (if any) to minimize the effects of management measures on the CPUE series.	✔			
3. Describe Analysis Dataset (after exclusions and other treatments)				
A. Provide tables and/or figures of number of observations by factors (including year, area, etc.) and interaction terms.			✔	
B. Include tables and/or figures of number of positive observations by factors and interaction terms.			✔	
C. Include tables and/or figures of the proportion positive observations by factors and interaction terms.			✔	
D. Include tables and/or figures of average (unstandardized) CPUE by factors and interaction terms.			✔	
E. Include annual maps of locations of survey sites (or fishing trips) and associated catch rates ***OR*** supply the raw data needed to construct these maps (Observation, Year, Latitude, Longitude (or statistical grid, area), Catch, Effort).				✔
F. Describe the effort variable and the units. If more than one effort variable is present in the dataset, justify selection.				✔
G. What are the units of catch (e.g. numbers or biomass, whole weight, gutted weight, kilograms, pounds).				✔
4. Model Standardization				
A. Describe model structure (e.g. delta-lognormal)				✔
B. Describe construction of GLM components (e.g. forward selection from null etc.)				✔
C. Describe inclusion criteria for factors and interactions terms.				✔
D. Were YEAR*FACTOR interactions included in the model? If so, how (e.g. fixed effect, random effect)? Were random effects tested for significance using a likelihood ratio test?				✔
E. Provide a table summarizing the construction of the GLM components.			✔	
F. Summarize model statistics of the mixed model formulation(s) (e.g. log likelihood, AIC, BIC etc.)			✔	
G. Report convergence statistics.			✔	

Working Group Comments:

3.A-D. Some tables or figures provided by year others AOD

4.E-G. AOD

MODEL DIAGNOSTICS

Comment: Other model structures are possible and acceptable. Please provide appropriate diagnostics to the CPUE indices working group.

	Not Applicable	Absent	Incomplete	Complete
1. Binomial Component				
A. Include plots of the chi-square residuals by factor.				✔
B. Include plots of predicted and observed proportion of positive trips by year and factor (e.g. year*area)			✔	
C. Report overdispersion parameter and other fit statistics (e.g. chi-square / degrees of freedom).				✔
2. Lognormal/Gamma Component				
A. Include histogram of log(CPUE) or a histogram of the residuals of the model on CPUE. Overlay the expected distribution.			✔	
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor.			✔	
C. Include QQ-plot – (e.g. Student deviance residuals vs. theoretical quantiles), Overlay expected distribution.				✔
D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.			✔	
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.			✔	
F. Include plots of the residuals by factor				✔
3. Poisson Component				
A. Report overdispersion parameter and other fit statistics (e.g. chi-square / degrees of freedom).	✔			
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor.	✔			
C. Include QQ-plot – (e.g. Student deviance residuals vs. theoretical quantiles), Overlay expected distribution.	✔			
D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.	✔			
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.	✔			
4. Zero-inflated model				
A. Include ROC curve to quantify goodness of fit.	✔			
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor).	✔			
C. Include QQ-plot (e.g. Student dev. residuals vs. theoretical quantiles), Overlay expected distribution.	✔			

Working Group Comments:

1.B. AOD

2.A,B,D,E. AOD

The feasibility of this diagnostic is still under review.

MODEL DIAGNOSTICS (CONT.)

Not Applicable	Absent	Incomplete	Complete

Working Group Comments:

D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.	✔			
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.	✔			

MODEL RESULTS

A. Tables of Nominal CPUE, Standardized CPUE, Observations, Positive Observations, Proportion Positive Observations and Coefficients of Variation (CVs). Other statistics may also be appropriate to report			✔	
B. Figure of Nominal and Standardized Indices with measure of variance (i.e. CVs).				✔

IF MULTIPLE MODEL STRUCTURES WERE CONSIDERED:

(***Note: this is always recommended but required when model diagnostics are poor***.)

1. Plot of resulting indices and estimates of variance	✔			
2. Table of model statistics (e.g. AIC criteria)	✔			

A. proportion positives AOD

	Date Received	*Workshop Recommendation*	*Revision Deadline ****	*Author and Rapporteur Signatures*
First Submission	reviewed 3/21/2012	base index		
Revision				

*The revision deadline is negotiated by the author, the SEDAR coordinator and the CPUE rapporteur. The author **DOES NOT** commit to any **LEGAL OBLIGATION** by agreeing to submit a manuscript before this deadline. The maximum penalty for failure to submit a revised document prior to the submission deadline is rejection of the CPUE series.*

Justification of Working Group Recommendation

NMFS LL SE - used as base index in 2005/2006 assessment

Advantages: FI survey, rigorously standardized, great spatial coverage, length data available

Disadvantages: shows some unexplained inter-annual variability (larger than can be explained by life history alone).

DW recommends NMFS LL SE (AUG-SEP, 1995-2010) as base index

Evaluation of Abundance Indices Gulf of Mexico Blacktip Shark: Commercial Bottom LL Vessel Standardized Catch Rates of Blacktip Sharks in GOM (SEDAR29-WP-04)

DESCRIPTION OF THE DATA SOURCE

	Not Applicable	Absent	Incomplete	Complete
1. Fishery Independent Indices				
A. Describe the survey design (e.g. fixed sampling sites, random stratified sampling), location, seasons/months and years of sampling.	✔			
B. Describe sampling methodology (e.g. gear, vessel, soak time etc.)	✔			
C. Describe any changes in sampling methodology (e.g. gear, vessel, sample design etc.)	✔			
D. Describe the variables reported in the data set (e.g. location, time, temperature, catch, effort etc.).	✔			
E. What species or species assemblages are targeted by this survey (e.g. red snapper, reef fish, pelagic).	✔			
F. Describe the size/age range that the index applies to. Include supporting figures (e.g. size comp) if available.	✔			
2. Fishery Dependent Indices				
A. Describe the data source and type of fishery (e.g. commercial handline, commercial longline, recreational hook and line etc.).				✔
B. Describe any changes to reporting requirements, variables reported, etc.				✔
C. Describe the variables reported in the data set (e.g. location, time, temperature, catch, effort etc.).				✔
D Describe the size/age range that the index applies to. Include supporting figures (e.g. size comp) if available.		✔		

METHODS

1. Data Reduction and Exclusions				
A. Describe any data exclusions (e.g. gears, fishing modes, sampling areas etc.). Report the number of records removed and justify removal.				✔
B. Describe data reduction techniques (if any) used to address targeting (e.g. Stephens and MacCall, 2004; gear configuration, species assemblage etc).				✔
C. Discuss procedures used to identify outliers. How many were identified? Were they excluded?				✔

Working Group Comments:

2.D. no size data available

	Not Applicable	Absent	Incomplete	Complete
2. Management Regulations (for FD Indices)				
A. Provide (or cite) history of management regulations (e.g. bag limits, size limits, trip limits, closures etc.).				✔
B. Describe the effects (if any) of management regulations on CPUE				✔
C. Discuss methods used (if any) to minimize the effects of management measures on the CPUE series.				✔
3. Describe Analysis Dataset (after exclusions and other treatments)				
A. Provide tables and/or figures of number of observations by factors (including year, area, etc.) and interaction terms.			✔	
B. Include tables and/or figures of number of positive observations by factors and interaction terms.			✔	
C. Include tables and/or figures of the proportion positive observations by factors and interaction terms.			✔	
D. Include tables and/or figures of average (unstandardized) CPUE by factors and interaction terms.			✔	
E. Include annual maps of locations of survey sites (or fishing trips) and associated catch rates ***OR*** supply the raw data needed to construct these maps (Observation, Year, Latitude, Longitude (or statistical grid, area), Catch, Effort).			✔	
F. Describe the effort variable and the units. If more than one effort variable is present in the dataset, justify selection.				✔
G. What are the units of catch (e.g. numbers or biomass, whole weight, gutted weight, kilograms, pounds).				✔
4. Model Standardization				
A. Describe model structure (e.g. delta-lognormal)				✔
B. Describe construction of GLM components (e.g. forward selection from null etc.)				✔
C. Describe inclusion criteria for factors and interactions terms.				✔
D. Were YEAR*FACTOR interactions included in the model? If so, how (e.g. fixed effect, random effect)? Were random effects tested for significance using a likelihood ratio test?	✔			
E. Provide a table summarizing the construction of the GLM components.			✔	
F. Summarize model statistics of the mixed model formulation(s) (e.g. log likelihood, AIC, BIC etc.)				✔
G. Report convergence statistics.				✔

Working Group Comments:

2. Trip limits looked at but didn't appear to be a problem

3. A-D. some tables/figures by year included, others AOD

3. E. total effort plotted by grid square, confidentiality prevents plotting individual locations

4.E. AOD

MODEL DIAGNOSTICS

Comment: Other model structures are possible and acceptable. Please provide appropriate diagnostics to the CPUE indices working group.

	Not Applicable	Absent	Incomplete	Complete
1. Binomial Component				
A. Include plots of the chi-square residuals by factor.				✔
B. Include plots of predicted and observed proportion of positive trips by year and factor (e.g. year*area)			✔	
C. Report overdispersion parameter and other fit statistics (e.g. chi-square / degrees of freedom).			✔	
2. Lognormal/Gamma Component				
A. Include histogram of log(CPUE) or a histogram of the residuals of the model on CPUE. Overlay the expected distribution.				✔
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor.				✔
C. Include QQ-plot – (e.g. Student deviance residuals vs. theoretical quantiles), Overlay expected distribution.				✔
D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.			✔	
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.			✔	
F. Include plots of the residuals by factor				✔
3. Poisson Component				
A. Report overdispersion parameter and other fit statistics (e.g. chi-square / degrees of freedom).	✔			
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor.	✔			
C. Include QQ-plot – (e.g. Student deviance residuals vs. theoretical quantiles), Overlay expected distribution.	✔			
D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.	✔			
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.	✔			
4. Zero-inflated model				
A. Include ROC curve to quantify goodness of fit.	✔			
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor).	✔			
C. Include QQ-plot (e.g. Student dev. residuals vs. theoretical quantiles), Overlay expected distribution.	✔			

Working Group Comments:

1.B. figs by year others available on demand (AOD)
1.C. AOD

2.D,E. AOD

The feasibility of this diagnostic is still under review.

MODEL DIAGNOSTICS (CONT.)

Not Applicable	Absent	Incomplete	Complete

Working Group Comments:

D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.	✔			
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.	✔			

MODEL RESULTS

A. Tables of Nominal CPUE, Standardized CPUE, Observations, Positive Observations, Proportion Positive Observations and Coefficients of Variation (CVs). Other statistics may also be appropriate to report				✔
B. Figure of Nominal and Standardized Indices with measure of variance (i.e. CVs).				✔

IF MULTIPLE MODEL STRUCTURES WERE CONSIDERED:

(***Note: this is always recommended but required when model diagnostics are poor***.)

1. Plot of resulting indices and estimates of variance	✔			
2. Table of model statistics (e.g. AIC criteria)	✔			

	Date Received	*Workshop Recommendation*	*Revision Deadline ****	*Author and Rapporteur Signatures*
First Submission	reviewed 3/21/2012	exclude index		
Revision				

*The revision deadline is negotiated by the author, the SEDAR coordinator and the CPUE rapporteur. The author **DOES NOT** commit to any **LEGAL OBLIGATION** by agreeing to submit a manuscript before this deadline. The maximum penalty for failure to submit a revised document prior to the submission deadline is rejection of the CPUE series.*

Justification of Working Group Recommendation

Commercial BLL Logbook (BLL Logs old) was a base index last time

Advantages: good spatial coverage, no missing years, long time series

Disadvantages: fishery dependent, effort is trip based not individual sets, no size information, landings not catch, self-reported

DW recommends to exclude this index (JAN-DEC, 1996-2010) as it is redundant to BLLOP data, which is preferred based on information provided on the BLLOP indices worksheet.

Evaluation of Abundance Indices Gulf of Mexico Blacktip Shark: Standardized catch rates for GOM Blacktip Sharks from the U.S. Pelagic LL logbook (SEDAR29-WP-05)

DESCRIPTION OF THE DATA SOURCE

	Not Applicable	Absent	Incomplete	Complete
1. Fishery Independent Indices				
A. Describe the survey design (e.g. fixed sampling sites, random stratified sampling), location, seasons/months and years of sampling.	✔			
B. Describe sampling methodology (e.g. gear, vessel, soak time etc.)	✔			
C. Describe any changes in sampling methodology (e.g. gear, vessel, sample design etc.)	✔			
D. Describe the variables reported in the data set (e.g. location, time, temperature, catch, effort etc.).	✔			
E. What species or species assemblages are targeted by this survey (e.g. red snapper, reef fish, pelagic).	✔			
F. Describe the size/age range that the index applies to. Include supporting figures (e.g. size comp) if available.	✔			
2. Fishery Dependent Indices				
A. Describe the data source and type of fishery (e.g. commercial handline, commercial longline, recreational hook and line etc.).				✔
B. Describe any changes to reporting requirements, variables reported, etc.				✔
C. Describe the variables reported in the data set (e.g. location, time, temperature, catch, effort etc.).				✔
D Describe the size/age range that the index applies to. Include supporting figures (e.g. size comp) if available.	✔			

Working Group Comments:

METHODS

1. Data Reduction and Exclusions				
A. Describe any data exclusions (e.g. gears, fishing modes, sampling areas etc.). Report the number of records removed and justify removal.				✔
B. Describe data reduction techniques (if any) used to address targeting (e.g. Stephens and MacCall, 2004; gear configuration, species assemblage etc).				✔
C. Discuss procedures used to identify outliers. How many were identified? Were they excluded?				✔

	Not Applicable	Absent	Incomplete	Complete
2. Management Regulations (for FD Indices)				
A. Provide (or cite) history of management regulations (e.g. bag limits, size limits, trip limits, closures etc.).	✔			
B. Describe the effects (if any) of management regulations on CPUE	✔			
C. Discuss methods used (if any) to minimize the effects of management measures on the CPUE series.	✔			
3. Describe Analysis Dataset (after exclusions and other treatments)				
A. Provide tables and/or figures of number of observations by factors (including year, area, etc.) and interaction terms.				✔
B. Include tables and/or figures of number of positive observations by factors and interaction terms.			✔	
C. Include tables and/or figures of the proportion positive observations by factors and interaction terms.			✔	
D. Include tables and/or figures of average (unstandardized) CPUE by factors and interaction terms.			✔	
E. Include annual maps of locations of survey sites (or fishing trips) and associated catch rates ***OR*** supply the raw data needed to construct these maps (Observation, Year, Latitude, Longitude (or statistical grid, area), Catch, Effort).			✔	
F. Describe the effort variable and the units. If more than one effort variable is present in the dataset, justify selection.				✔
G. What are the units of catch (e.g. numbers or biomass, whole weight, gutted weight, kilograms, pounds).				✔
4. Model Standardization				
A. Describe model structure (e.g. delta-lognormal)				✔
B. Describe construction of GLM components (e.g. forward selection from null etc.)				✔
C. Describe inclusion criteria for factors and interactions terms.				✔
D. Were YEAR*FACTOR interactions included in the model? If so, how (e.g. fixed effect, random effect)? Were random effects tested for significance using a likelihood ratio test?				✔
E. Provide a table summarizing the construction of the GLM components.				✔
F. Summarize model statistics of the mixed model formulation(s) (e.g. log likelihood, AIC, BIC etc.)				✔
G. Report convergence statistics.				✔

Working Group Comments:

No management taken into account because not a targeted species

3. B-D. figures by year included, others AOD

3. E. plot of landings (where caught) by grid square, confidentiality prevents plot of individual locations

MODEL DIAGNOSTICS

Comment: Other model structures are possible and acceptable. Please provide appropriate diagnostics to the CPUE indices working group.

	Not Applicable	Absent	Incomplete	Complete
1. Binomial Component				
A. Include plots of the chi-square residuals by factor.			✔	
B. Include plots of predicted and observed proportion of positive trips by year and factor (e.g. year*area)			✔	
C. Report overdispersion parameter and other fit statistics (e.g. chi-square / degrees of freedom).				✔
2. Lognormal/Gamma Component				
A. Include histogram of log(CPUE) or a histogram of the residuals of the model on CPUE. Overlay the expected distribution.				✔
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor.			✔	
C. Include QQ-plot – (e.g. Student deviance residuals vs. theoretical quantiles), Overlay expected distribution.			✔	
D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.			✔	
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.			✔	
F. Include plots of the residuals by factor			✔	
3. Poisson Component				
A. Report overdispersion parameter and other fit statistics (e.g. chi-square / degrees of freedom).	✔			
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor.	✔			
C. Include QQ-plot – (e.g. Student deviance residuals vs. theoretical quantiles), Overlay expected distribution.	✔			
D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.	✔			
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.	✔			
4. Zero-inflated model				
A. Include ROC curve to quantify goodness of fit.	✔			
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor).	✔			
C. Include QQ-plot (e.g. Student dev. residuals vs. theoretical quantiles), Overlay expected distribution.	✔			

Working Group Comments:

1. A/B figs by year others available on demand (AOD)

2.B-D. Some available by year others AOD

The feasibility of this diagnostic is still under review.

MODEL DIAGNOSTICS (CONT.)

Not Applicable	Absent	Incomplete	Complete

Working Group Comments:

D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.	✔			
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.	✔			

MODEL RESULTS

A. Tables of Nominal CPUE, Standardized CPUE, Observations, Positive Observations, Proportion Positive Observations and Coefficients of Variation (CVs). Other statistics may also be appropriate to report			✔	
B. Figure of Nominal and Standardized Indices with measure of variance (i.e. CVs).				✔

A. positive observations and proportion positives AOD

IF MULTIPLE MODEL STRUCTURES WERE CONSIDERED:

(***Note: this is always recommended but required when model diagnostics are poor***.)

1. Plot of resulting indices and estimates of variance	✔			
2. Table of model statistics (e.g. AIC criteria)	✔			

	Date Received	*Workshop Recommendation*	*Revision Deadline ****	*Author and Rapporteur Signatures*
First Submission	reviewed 3/21/2012	exclude index		
Revision				

*The revision deadline is negotiated by the author, the SEDAR coordinator and the CPUE rapporteur. The author **DOES NOT** commit to any **LEGAL OBLIGATION** by agreeing to submit a manuscript before this deadline. The maximum penalty for failure to submit a revised document prior to the submission deadline is rejection of the CPUE series.*

Justification of Working Group Recommendation

PLL Logs was used as a base index in 2005/2006 assessment

Advantages: long time series

Disadvantages: misidentification, misreporting, changes in reporting practices, diagnostic plot of proportion positive residuals by year shows negative trend in the 1990s and a positive trend in the 2000s (no trend should be apparent), index values are highly correlated with proportion positives.

DW recommends to exclude PLL Logs index (JAN-DEC, 1992-2010)

Evaluation of Abundance Indices Gulf of Mexico Blacktip Shark: Standardized catch rates of blacktip sharks from the Everglades National Park Creel Survey (SEDAR29-WP-06)

DESCRIPTION OF THE DATA SOURCE

	Not Applicable	Absent	Incomplete	Complete
1. Fishery Independent Indices				
A. Describe the survey design (e.g. fixed sampling sites, random stratified sampling), location, seasons/months and years of sampling.	✔			
B. Describe sampling methodology (e.g. gear, vessel, soak time etc.)	✔			
C. Describe any changes in sampling methodology (e.g. gear, vessel, sample design etc.)	✔			
D. Describe the variables reported in the data set (e.g. location, time, temperature, catch, effort etc.).	✔			
E. What species or species assemblages are targeted by this survey (e.g. red snapper, reef fish, pelagic).	✔			
F. Describe the size/age range that the index applies to. Include supporting figures (e.g. size comp) if available.	✔			
2. Fishery Dependent Indices				
A. Describe the data source and type of fishery (e.g. commercial handline, commercial longline, recreational hook and line etc.).				✔
B. Describe any changes to reporting requirements, variables reported, etc.				✔
C. Describe the variables reported in the data set (e.g. location, time, temperature, catch, effort etc.).				✔
D Describe the size/age range that the index applies to. Include supporting figures (e.g. size comp) if available.				✔

Working Group Comments:

METHODS

1. Data Reduction and Exclusions				
A. Describe any data exclusions (e.g. gears, fishing modes, sampling areas etc.). Report the number of records removed and justify removal.	✔			
B. Describe data reduction techniques (if any) used to address targeting (e.g. Stephens and MacCall, 2004; gear configuration, species assemblage etc).	✔			
C. Discuss procedures used to identify outliers. How many were identified? Were they excluded?	✔			

	Not Applicable	Absent	Incomplete	Complete
2. Management Regulations (for FD Indices)				
A. Provide (or cite) history of management regulations (e.g. bag limits, size limits, trip limits, closures etc.).	✔			
B. Describe the effects (if any) of management regulations on CPUE	✔			
C. Discuss methods used (if any) to minimize the effects of management measures on the CPUE series.	✔			
3. Describe Analysis Dataset (after exclusions and other treatments)				
A. Provide tables and/or figures of number of observations by factors (including year, area, etc.) and interaction terms.		✔		✔
B. Include tables and/or figures of number of positive observations by factors and interaction terms.			✔	
C. Include tables and/or figures of the proportion positive observations by factors and interaction terms.			✔	
D. Include tables and/or figures of average (unstandardized) CPUE by factors and interaction terms.			✔	
E. Include annual maps of locations of survey sites (or fishing trips) and associated catch rates ***OR*** supply the raw data needed to construct these maps (Observation, Year, Latitude, Longitude (or statistical grid, area), Catch, Effort).				✔
F. Describe the effort variable and the units. If more than one effort variable is present in the dataset, justify selection.				✔
G. What are the units of catch (e.g. numbers or biomass, whole weight, gutted weight, kilograms, pounds).				✔
4. Model Standardization				
A. Describe model structure (e.g. delta-lognormal)				✔
B. Describe construction of GLM components (e.g. forward selection from null etc.)				✔
C. Describe inclusion criteria for factors and interactions terms.				✔
D. Were YEAR*FACTOR interactions included in the model? If so, how (e.g. fixed effect, random effect)? Were random effects tested for significance using a likelihood ratio test?				✔
E. Provide a table summarizing the construction of the GLM components.				✔
F. Summarize model statistics of the mixed model formulation(s) (e.g. log likelihood, AIC, BIC etc.)				✔
G. Report convergence statistics.				✔

Working Group Comments:

2. both landed and discarded catch were recorded

3. B-D. tables or figures by year included, others AOD

MODEL DIAGNOSTICS

Comment: Other model structures are possible and acceptable. Please provide appropriate diagnostics to the CPUE indices working group.

	Not Applicable	Absent	Incomplete	Complete
1. Binomial Component				
A. Include plots of the chi-square residuals by factor.			✔	
B. Include plots of predicted and observed proportion of positive trips by year and factor (e.g. year*area)			✔	
C. Report overdispersion parameter and other fit statistics (e.g. chi-square / degrees of freedom).				✔
2. Lognormal/Gamma Component				
A. Include histogram of log(CPUE) or a histogram of the residuals of the model on CPUE. Overlay the expected distribution.				✔
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor.			✔	
C. Include QQ-plot – (e.g. Student deviance residuals vs. theoretical quantiles), Overlay expected distribution.				✔
D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.			✔	
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.			✔	
F. Include plots of the residuals by factor			✔	
3. Poisson Component				
A. Report overdispersion parameter and other fit statistics (e.g. chi-square / degrees of freedom).	✔			
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor.	✔			
C. Include QQ-plot – (e.g. Student deviance residuals vs. theoretical quantiles), Overlay expected distribution.	✔			
D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.	✔			
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.	✔			
4. Zero-inflated model				
A. Include ROC curve to quantify goodness of fit.	✔			
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor).	✔			
C. Include QQ-plot (e.g. Student dev. residuals vs. theoretical quantiles), Overlay expected distribution.	✔			

Working Group Comments:

1. A/B. figs by year others available on demand (AOD)

2. B, D-F some available by year others AOD

The feasibility of this diagnostic is still under review.

MODEL DIAGNOSTICS (CONT.)

Not Applicable	Absent	Incomplete	Complete

Working Group Comments:

D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.	✔			
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.	✔			

MODEL RESULTS

A. Tables of Nominal CPUE, Standardized CPUE, Observations, Positive Observations, Proportion Positive Observations and Coefficients of Variation (CVs). Other statistics may also be appropriate to report			✔	
B. Figure of Nominal and Standardized Indices with measure of variance (i.e. CVs).				✔

IF MULTIPLE MODEL STRUCTURES WERE CONSIDERED:

(***Note: this is always recommended but required when model diagnostics are poor***.)

1. Plot of resulting indices and estimates of variance	✔			
2. Table of model statistics (e.g. AIC criteria)	✔			

A. proportion positives AOD

	Date Received	*Workshop Recommendation*	*Revision Deadline ****	*Author and Rapporteur Signatures*
First Submission	reviewed 3/21/2012	base index		
Revision				

*The revision deadline is negotiated by the author, the SEDAR coordinator and the CPUE rapporteur. The author **DOES NOT** commit to any **LEGAL OBLIGATION** by agreeing to submit a manuscript before this deadline. The maximum penalty for failure to submit a revised document prior to the submission deadline is rejection of the CPUE series.*

Justification of Working Group Recommendation

ENP is a new index

Disadvantages: limited spatially, self reporting, early surveys did not have blacktip sharks listed separately, only a shark category

Advantages: long time series, species ID should not be a problem because of available shark species in that area (blacktips, lemon, nurse, bull - no spinners), length data available starting in early 1980s

DW recommends using the ENP index (JAN-DEC, 1983-2010) as a base index with the time series truncated to start in 1983, once blacktips were on the survey and length data was taken.

Evaluation of Abundance Indices Gulf of Mexico Blacktip Shark: A standardized CPUE index of abundance for GOM blacktip sharks from MRFSS (SEDAR29-WP-10)

DESCRIPTION OF THE DATA SOURCE

	Not Applicable	Absent	Incomplete	Complete
1. Fishery Independent Indices				
A. Describe the survey design (e.g. fixed sampling sites, random stratified sampling), location, seasons/months and years of sampling.	✔			
B. Describe sampling methodology (e.g. gear, vessel, soak time etc.)	✔			
C. Describe any changes in sampling methodology (e.g. gear, vessel, sample design etc.)	✔			
D. Describe the variables reported in the data set (e.g. location, time, temperature, catch, effort etc.).	✔			
E. What species or species assemblages are targeted by this survey (e.g. red snapper, reef fish, pelagic).	✔			
F. Describe the size/age range that the index applies to. Include supporting figures (e.g. size comp) if available.	✔			
2. Fishery Dependent Indices				
A. Describe the data source and type of fishery (e.g. commercial handline, commercial longline, recreational hook and line etc.).				✔
B. Describe any changes to reporting requirements, variables reported, etc.				✔
C. Describe the variables reported in the data set (e.g. location, time, temperature, catch, effort etc.).				✔
D Describe the size/age range that the index applies to. Include supporting figures (e.g. size comp) if available.				✔

Working Group Comments:

METHODS

1. Data Reduction and Exclusions				
A. Describe any data exclusions (e.g. gears, fishing modes, sampling areas etc.). Report the number of records removed and justify removal.	✔			
B. Describe data reduction techniques (if any) used to address targeting (e.g. Stephens and MacCall, 2004; gear configuration, species assemblage etc).	✔			
C. Discuss procedures used to identify outliers. How many were identified? Were they excluded?	✔			

	Not Applicable	Absent	Incomplete	Complete
2. Management Regulations (for FD Indices)				
A. Provide (or cite) history of management regulations (e.g. bag limits, size limits, trip limits, closures etc.).	✔			
B. Describe the effects (if any) of management regulations on CPUE	✔			
C. Discuss methods used (if any) to minimize the effects of management measures on the CPUE series.	✔			
3. Describe Analysis Dataset (after exclusions and other treatments)				
A. Provide tables and/or figures of number of observations by factors (including year, area, etc.) and interaction terms.			✔	
B. Include tables and/or figures of number of positive observations by factors and interaction terms.			✔	
C. Include tables and/or figures of the proportion positive observations by factors and interaction terms.			✔	
D. Include tables and/or figures of average (unstandardized) CPUE by factors and interaction terms.			✔	
E. Include annual maps of locations of survey sites (or fishing trips) and associated catch rates ***OR*** supply the raw data needed to construct these maps (Observation, Year, Latitude, Longitude (or statistical grid, area), Catch, Effort).	✔			
F. Describe the effort variable and the units. If more than one effort variable is present in the dataset, justify selection.				✔
G. What are the units of catch (e.g. numbers or biomass, whole weight, gutted weight, kilograms, pounds).				✔
4. Model Standardization				
A. Describe model structure (e.g. delta-lognormal)				✔
B. Describe construction of GLM components (e.g. forward selection from null etc.)				✔
C. Describe inclusion criteria for factors and interactions terms.				✔
D. Were YEAR*FACTOR interactions included in the model? If so, how (e.g. fixed effect, random effect)? Were random effects tested for significance using a likelihood ratio test?				✔
E. Provide a table summarizing the construction of the GLM components.				✔
F. Summarize model statistics of the mixed model formulation(s) (e.g. log likelihood, AIC, BIC etc.)				✔
G. Report convergence statistics.				✔

Working Group Comments:

2. both landed and discarded catch were recorded

3. A-D. AOD

MODEL DIAGNOSTICS

Comment: Other model structures are possible and acceptable. Please provide appropriate diagnostics to the CPUE indices working group.

	Not Applicable	Absent	Incomplete	Complete
1. Binomial Component				
A. Include plots of the chi-square residuals by factor.			✔	
B. Include plots of predicted and observed proportion of positive trips by year and factor (e.g. year*area)			✔	
C. Report overdispersion parameter and other fit statistics (e.g. chi-square / degrees of freedom).				✔
2. Lognormal/Gamma Component				
A. Include histogram of log(CPUE) or a histogram of the residuals of the model on CPUE. Overlay the expected distribution.			✔	
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor.			✔	
C. Include QQ-plot – (e.g. Student deviance residuals vs. theoretical quantiles), Overlay expected distribution.			✔	
D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.			✔	
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.			✔	
F. Include plots of the residuals by factor			✔	
3. Poisson Component				
A. Report overdispersion parameter and other fit statistics (e.g. chi-square / degrees of freedom).	✔			
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor.	✔			
C. Include QQ-plot – (e.g. Student deviance residuals vs. theoretical quantiles), Overlay expected distribution.	✔			
D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.	✔			
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.	✔			
4. Zero-inflated model				
A. Include ROC curve to quantify goodness of fit.	✔			
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor).	✔			
C. Include QQ-plot (e.g. Student dev. residuals vs. theoretical quantiles), Overlay expected distribution.	✔			

Working Group Comments:

1. A,B. AOD

2. A-F. AOD

The feasibility of this diagnostic is still under review.

MODEL DIAGNOSTICS (CONT.)

Not Applicable	Absent	Incomplete	Complete

Working Group Comments:

D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.	✔			
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.	✔			

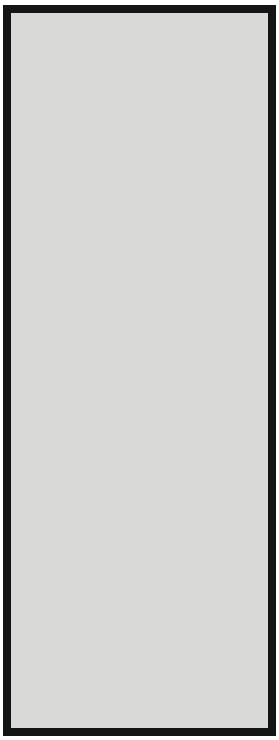
MODEL RESULTS

A. Tables of Nominal CPUE, Standardized CPUE, Observations, Positive Observations, Proportion Positive Observations and Coefficients of Variation (CVs). Other statistics may also be appropriate to report				✔
B. Figure of Nominal and Standardized Indices with measure of variance (i.e. CVs).				✔

IF MULTIPLE MODEL STRUCTURES WERE CONSIDERED:

(***Note: this is always recommended but required when model diagnostics are poor***.)

1. Plot of resulting indices and estimates of variance	✔			
2. Table of model statistics (e.g. AIC criteria)	✔			



	Date Received	*Workshop Recommendation*	*Revision Deadline ****	*Author and Rapporteur Signatures*
First Submission	reviewed 3/21/2012	sensitivity index		
Revision				

*The revision deadline is negotiated by the author, the SEDAR coordinator and the CPUE rapporteur. The author **DOES NOT** commit to any **LEGAL OBLIGATION** by agreeing to submit a manuscript before this deadline. The maximum penalty for failure to submit a revised document prior to the submission deadline is rejection of the CPUE series.*

Justification of Working Group Recommendation

MRFSS index used in sensitivity analyses during 2005/2006 assessment

Advantages: spatial coverage, long time series

Disadvantages: species identification problems, self reported, author does not recommend, high inter-annual variability, large confidence intervals

DW recommends to use the MRFSS (JAN-DEC, 1981-2010) as a sensitivity index

Evaluation of Abundance Indices Gulf of Mexico Blacktip Shark: Catch rates and size distribution of blacktip shark in the northern GOM (SEDAR29-WP-11)

DESCRIPTION OF THE DATA SOURCE

	Not Applicable	Absent	Incomplete	Complete
1. Fishery Independent Indices				
A. Describe the survey design (e.g. fixed sampling sites, random stratified sampling), location, seasons/months and years of sampling.				✔
B. Describe sampling methodology (e.g. gear, vessel, soak time etc.)				✔
C. Describe any changes in sampling methodology (e.g. gear, vessel, sample design etc.)				✔
D. Describe the variables reported in the data set (e.g. location, time, temperature, catch, effort etc.).				✔
E. What species or species assemblages are targeted by this survey (e.g. red snapper, reef fish, pelagic).				✔
F. Describe the size/age range that the index applies to. Include supporting figures (e.g. size comp) if available.				✔
2. Fishery Dependent Indices				
A. Describe the data source and type of fishery (e.g. commercial handline, commercial longline, recreational hook and line etc.).	✔			
B. Describe any changes to reporting requirements, variables reported, etc.	✔			
C. Describe the variables reported in the data set (e.g. location, time, temperature, catch, effort etc.).	✔			
D Describe the size/age range that the index applies to. Include supporting figures (e.g. size comp) if available.	✔			

Working Group Comments:

METHODS

1. Data Reduction and Exclusions				
A. Describe any data exclusions (e.g. gears, fishing modes, sampling areas etc.). Report the number of records removed and justify removal.				✔
B. Describe data reduction techniques (if any) used to address targeting (e.g. Stephens and MacCall, 2004; gear configuration, species assemblage etc).				✔
C. Discuss procedures used to identify outliers. How many were identified? Were they excluded?				✔

	Not Applicable	Absent	Incomplete	Complete
2. Management Regulations (for FD Indices)				
A. Provide (or cite) history of management regulations (e.g. bag limits, size limits, trip limits, closures etc.).	✔			
B. Describe the effects (if any) of management regulations on CPUE	✔			
C. Discuss methods used (if any) to minimize the effects of management measures on the CPUE series.	✔			
3. Describe Analysis Dataset (after exclusions and other treatments)				
A. Provide tables and/or figures of number of observations by factors (including year, area, etc.) and interaction terms.			✔	
B. Include tables and/or figures of number of positive observations by factors and interaction terms.			✔	
C. Include tables and/or figures of the proportion positive observations by factors and interaction terms.			✔	
D. Include tables and/or figures of average (unstandardized) CPUE by factors and interaction terms.			✔	
E. Include annual maps of locations of survey sites (or fishing trips) and associated catch rates ***OR*** supply the raw data needed to construct these maps (Observation, Year, Latitude, Longitude (or statistical grid, area), Catch, Effort).				✔
F. Describe the effort variable and the units. If more than one effort variable is present in the dataset, justify selection.				✔
G. What are the units of catch (e.g. numbers or biomass, whole weight, gutted weight, kilograms, pounds).				✔
4. Model Standardization				
A. Describe model structure (e.g. delta-lognormal)				✔
B. Describe construction of GLM components (e.g. forward selection from null etc.)				✔
C. Describe inclusion criteria for factors and interactions terms.				✔
D. Were YEAR*FACTOR interactions included in the model? If so, how (e.g. fixed effect, random effect)? Were random effects tested for significance using a likelihood ratio test?				✔
E. Provide a table summarizing the construction of the GLM components.				✔
F. Summarize model statistics of the mixed model formulation(s) (e.g. log likelihood, AIC, BIC etc.)				✔
G. Report convergence statistics.				✔

Working Group Comments:

3. A-D. figures or tables by year included, others available on demand (AOD)

MODEL DIAGNOSTICS

Comment: Other model structures are possible and acceptable. Please provide appropriate diagnostics to the CPUE indices working group.

	Not Applicable	Absent	Incomplete	Complete
1. Binomial Component				
A. Include plots of the chi-square residuals by factor.			✔	
B. Include plots of predicted and observed proportion of positive trips by year and factor (e.g. year*area)			✔	
C. Report overdispersion parameter and other fit statistics (e.g. chi-square / degrees of freedom).			✔	
2. Lognormal/Gamma Component				
A. Include histogram of log(CPUE) or a histogram of the residuals of the model on CPUE. Overlay the expected distribution.			✔	
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor.			✔	
C. Include QQ-plot – (e.g. Student deviance residuals vs. theoretical quantiles), Overlay expected distribution.			✔	
D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.			✔	
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.			✔	
F. Include plots of the residuals by factor			✔	
3. Poisson Component				
A. Report overdispersion parameter and other fit statistics (e.g. chi-square / degrees of freedom).	✔			
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor.	✔			
C. Include QQ-plot – (e.g. Student deviance residuals vs. theoretical quantiles), Overlay expected distribution.	✔			
D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.	✔			
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.	✔			
4. Zero-inflated model				
A. Include ROC curve to quantify goodness of fit.	✔			
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor).	✔			
C. Include QQ-plot (e.g. Student dev. residuals vs. theoretical quantiles), Overlay expected distribution.	✔			

Working Group Comments:

1. A-C. AOD

2. A-F. AOD

The feasibility of this diagnostic is still under review.

MODEL DIAGNOSTICS (CONT.)

Not Applicable	Absent	Incomplete	Complete

Working Group Comments:

D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.	✔			
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.	✔			

MODEL RESULTS

A. Tables of Nominal CPUE, Standardized CPUE, Observations, Positive Observations, Proportion Positive Observations and Coefficients of Variation (CVs). Other statistics may also be appropriate to report				✔
B. Figure of Nominal and Standardized Indices with measure of variance (i.e. CVs).				✔

IF MULTIPLE MODEL STRUCTURES WERE CONSIDERED:

(***Note: this is always recommended but required when model diagnostics are poor***.)

1. Plot of resulting indices and estimates of variance	✔			
2. Table of model statistics (e.g. AIC criteria)	✔			

	Date Received	*Workshop Recommendation*	*Revision Deadline ****	*Author and Rapporteur Signatures*
First Submission	reviewed 3/21/2012	sensitivity index		
Revision				

*The revision deadline is negotiated by the author, the SEDAR coordinator and the CPUE rapporteur. The author **DOES NOT** commit to any **LEGAL OBLIGATION** by agreeing to submit a manuscript before this deadline. The maximum penalty for failure to submit a revised document prior to the submission deadline is rejection of the CPUE series.*

Justification of Working Group Recommendation

AL LL is a new index

Disadvantages: short time series, spatial coverage limited

Advantages: standardized FI survey, random sampling within areas, year round monthly sampling, length data available

AL LL, MS LL (SEDAR29-WP-14), and MS-LA LL (SEDAR29-WP-15) use similar gear (AL and MS-LA gear are identical) and MS LL and MS-LA LL have similar selectivities. Recommended to combine indices and use sampling area as a weighting factor.
AL LL will be reviewed following analysis of combined index.

DW recommends using AL LL (JAN-DEC, 2006-2010) as a sensitivity index.

Evaluation of Abundance Indices Gulf of Mexico Blacktip Shark: Relative abundance of blacktip shark based on a fishery-independent gillnet survey off Texas (SEDAR29-WP-12)

DESCRIPTION OF THE DATA SOURCE

	Not Applicable	Absent	Incomplete	Complete
1. Fishery Independent Indices				
A. Describe the survey design (e.g. fixed sampling sites, random stratified sampling), location, seasons/months and years of sampling.				✔
B. Describe sampling methodology (e.g. gear, vessel, soak time etc.)				✔
C. Describe any changes in sampling methodology (e.g. gear, vessel, sample design etc.)				✔
D. Describe the variables reported in the data set (e.g. location, time, temperature, catch, effort etc.).				✔
E. What species or species assemblages are targeted by this survey (e.g. red snapper, reef fish, pelagic).				✔
F. Describe the size/age range that the index applies to. Include supporting figures (e.g. size comp) if available.				✔
2. Fishery Dependent Indices				
A. Describe the data source and type of fishery (e.g. commercial handline, commercial longline, recreational hook and line etc.).	✔			
B. Describe any changes to reporting requirements, variables reported, etc.	✔			
C. Describe the variables reported in the data set (e.g. location, time, temperature, catch, effort etc.).	✔			
D Describe the size/age range that the index applies to. Include supporting figures (e.g. size comp) if available.	✔			

Working Group Comments:

METHODS

1. Data Reduction and Exclusions				
A. Describe any data exclusions (e.g. gears, fishing modes, sampling areas etc.). Report the number of records removed and justify removal.	✔			
B. Describe data reduction techniques (if any) used to address targeting (e.g. Stephens and MacCall, 2004; gear configuration, species assemblage etc).	✔			
C. Discuss procedures used to identify outliers. How many were identified? Were they excluded?	✔			

	Not Applicable	Absent	Incomplete	Complete
2. Management Regulations (for FD Indices)				
A. Provide (or cite) history of management regulations (e.g. bag limits, size limits, trip limits, closures etc.).	✔			
B. Describe the effects (if any) of management regulations on CPUE	✔			
C. Discuss methods used (if any) to minimize the effects of management measures on the CPUE series.	✔			
3. Describe Analysis Dataset (after exclusions and other treatments)				
A. Provide tables and/or figures of number of observations by factors (including year, area, etc.) and interaction terms.				✔
B. Include tables and/or figures of number of positive observations by factors and interaction terms.			✔	
C. Include tables and/or figures of the proportion positive observations by factors and interaction terms.			✔	
D. Include tables and/or figures of average (unstandardized) CPUE by factors and interaction terms.			✔	
E. Include annual maps of locations of survey sites (or fishing trips) and associated catch rates ***OR*** supply the raw data needed to construct these maps (Observation, Year, Latitude, Longitude (or statistical grid, area), Catch, Effort).			✔	
F. Describe the effort variable and the units. If more than one effort variable is present in the dataset, justify selection.				✔
G. What are the units of catch (e.g. numbers or biomass, whole weight, gutted weight, kilograms, pounds).				✔
4. Model Standardization				
A. Describe model structure (e.g. delta-lognormal)				✔
B. Describe construction of GLM components (e.g. forward selection from null etc.)				✔
C. Describe inclusion criteria for factors and interactions terms.				✔
D. Were YEAR*FACTOR interactions included in the model? If so, how (e.g. fixed effect, random effect)? Were random effects tested for significance using a likelihood ratio test?				✔
E. Provide a table summarizing the construction of the GLM components.				✔
F. Summarize model statistics of the mixed model formulation(s) (e.g. log likelihood, AIC, BIC etc.)				✔
G. Report convergence statistics.				✔

Working Group Comments:

3. B-D. figures by year included, others AOD

3. E. plot of all locations together, yearly plots AOD

MODEL DIAGNOSTICS

Comment: Other model structures are possible and acceptable. Please provide appropriate diagnostics to the CPUE indices working group.

	Not Applicable	Absent	Incomplete	Complete
1. Binomial Component				
A. Include plots of the chi-square residuals by factor.			✔	
B. Include plots of predicted and observed proportion of positive trips by year and factor (e.g. year*area)			✔	
C. Report overdispersion parameter and other fit statistics (e.g. chi-square / degrees of freedom).				✔
2. Lognormal/Gamma Component				
A. Include histogram of log(CPUE) or a histogram of the residuals of the model on CPUE. Overlay the expected distribution.				✔
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor.			✔	
C. Include QQ-plot – (e.g. Student deviance residuals vs. theoretical quantiles), Overlay expected distribution.				✔
D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.			✔	
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.			✔	
F. Include plots of the residuals by factor			✔	
3. Poisson Component				
A. Report overdispersion parameter and other fit statistics (e.g. chi-square / degrees of freedom).	✔			
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor.	✔			
C. Include QQ-plot – (e.g. Student deviance residuals vs. theoretical quantiles), Overlay expected distribution.	✔			
D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.	✔			
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.	✔			
4. Zero-inflated model				
A. Include ROC curve to quantify goodness of fit.	✔			
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor).	✔			
C. Include QQ-plot (e.g. Student dev. residuals vs. theoretical quantiles), Overlay expected distribution.	✔			

Working Group Comments:

1. A/B figs by year others available on demand (AOD)

2. B, D-F some available by year others AOD

The feasibility of this diagnostic is still under review.

MODEL DIAGNOSTICS (CONT.)

Not Applicable	Absent	Incomplete	Complete

Working Group Comments:

D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.	✔			
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.	✔			

MODEL RESULTS

A. Tables of Nominal CPUE, Standardized CPUE, Observations, Positive Observations, Proportion Positive Observations and Coefficients of Variation (CVs). Other statistics may also be appropriate to report			✔	
B. Figure of Nominal and Standardized Indices with measure of variance (i.e. CVs).				✔

IF MULTIPLE MODEL STRUCTURES WERE CONSIDERED:

(***Note: this is always recommended but required when model diagnostics are poor***.)

1. Plot of resulting indices and estimates of variance	✔			
2. Table of model statistics (e.g. AIC criteria)	✔			

A. proportion positives AOD

	Date Received	*Workshop Recommendation*	*Revision Deadline ****	*Author and Rapporteur Signatures*
First Submission	reviewed 3/21/2012	base index		
Revision				

*The revision deadline is negotiated by the author, the SEDAR coordinator and the CPUE rapporteur. The author **DOES NOT** commit to any **LEGAL OBLIGATION** by agreeing to submit a manuscript before this deadline. The maximum penalty for failure to submit a revised document prior to the submission deadline is rejection of the CPUE series.*

Justification of Working Group Recommendation

-age 0 indices not evaluated because will not be used in stock assessment model
-assessment model will use age 1+ data only

TEXAS is a new index

Disadvantages: limited to TX coast

Advantages: long time series, length data available, FI standardized survey, good spatial coverage in an area where data was lacking in previous assessment

DW recommends using theTEXAS index (APR-JUN and SEP-NOV 1982-2010) as a base index

Evaluation of Abundance Indices Gulf of Mexico Blacktip Shark: Standardized catch rates of blacktip sharks collected during a gillnet survey in Mississippi (SEDAR29-WP-13)

DESCRIPTION OF THE DATA SOURCE

	Not Applicable	Absent	Incomplete	Complete
1. Fishery Independent Indices				
A. Describe the survey design (e.g. fixed sampling sites, random stratified sampling), location, seasons/months and years of sampling.				✔
B. Describe sampling methodology (e.g. gear, vessel, soak time etc.)				✔
C. Describe any changes in sampling methodology (e.g. gear, vessel, sample design etc.)				✔
D. Describe the variables reported in the data set (e.g. location, time, temperature, catch, effort etc.).				✔
E. What species or species assemblages are targeted by this survey (e.g. red snapper, reef fish, pelagic).				✔
F. Describe the size/age range that the index applies to. Include supporting figures (e.g. size comp) if available.				✔
2. Fishery Dependent Indices				
A. Describe the data source and type of fishery (e.g. commercial handline, commercial longline, recreational hook and line etc.).	✔			
B. Describe any changes to reporting requirements, variables reported, etc.	✔			
C. Describe the variables reported in the data set (e.g. location, time, temperature, catch, effort etc.).	✔			
D Describe the size/age range that the index applies to. Include supporting figures (e.g. size comp) if available.	✔			

Working Group Comments:

METHODS

1. Data Reduction and Exclusions				
A. Describe any data exclusions (e.g. gears, fishing modes, sampling areas etc.). Report the number of records removed and justify removal.	✔			
B. Describe data reduction techniques (if any) used to address targeting (e.g. Stephens and MacCall, 2004; gear configuration, species assemblage etc).	✔			
C. Discuss procedures used to identify outliers. How many were identified? Were they excluded?	✔			

	Not Applicable	Absent	Incomplete	Complete
2. Management Regulations (for FD Indices)				
A. Provide (or cite) history of management regulations (e.g. bag limits, size limits, trip limits, closures etc.).	✔			
B. Describe the effects (if any) of management regulations on CPUE	✔			
C. Discuss methods used (if any) to minimize the effects of management measures on the CPUE series.	✔			
3. Describe Analysis Dataset (after exclusions and other treatments)				
A. Provide tables and/or figures of number of observations by factors (including year, area, etc.) and interaction terms.			✔	
B. Include tables and/or figures of number of positive observations by factors and interaction terms.			✔	
C. Include tables and/or figures of the proportion positive observations by factors and interaction terms.			✔	
D. Include tables and/or figures of average (unstandardized) CPUE by factors and interaction terms.			✔	
E. Include annual maps of locations of survey sites (or fishing trips) and associated catch rates ***OR*** supply the raw data needed to construct these maps (Observation, Year, Latitude, Longitude (or statistical grid, area), Catch, Effort).				✔
F. Describe the effort variable and the units. If more than one effort variable is present in the dataset, justify selection.				✔
G. What are the units of catch (e.g. numbers or biomass, whole weight, gutted weight, kilograms, pounds).				✔
4. Model Standardization				
A. Describe model structure (e.g. delta-lognormal)				✔
B. Describe construction of GLM components (e.g. forward selection from null etc.)				✔
C. Describe inclusion criteria for factors and interactions terms.				✔
D. Were YEAR*FACTOR interactions included in the model? If so, how (e.g. fixed effect, random effect)? Were random effects tested for significance using a likelihood ratio test?				✔
E. Provide a table summarizing the construction of the GLM components.				✔
F. Summarize model statistics of the mixed model formulation(s) (e.g. log likelihood, AIC, BIC etc.)				✔
G. Report convergence statistics.				✔

Working Group Comments:

3. A-D. figures and/or tables by year included, others AOD

MODEL DIAGNOSTICS

Comment: Other model structures are possible and acceptable. Please provide appropriate diagnostics to the CPUE indices working group.

	Not Applicable	Absent	Incomplete	Complete
1. Binomial Component				
A. Include plots of the chi-square residuals by factor.			✔	
B. Include plots of predicted and observed proportion of positive trips by year and factor (e.g. year*area)			✔	
C. Report overdispersion parameter and other fit statistics (e.g. chi-square / degrees of freedom).				✔
2. Lognormal/Gamma Component				
A. Include histogram of log(CPUE) or a histogram of the residuals of the model on CPUE. Overlay the expected distribution.				✔
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor.			✔	
C. Include QQ-plot – (e.g. Student deviance residuals vs. theoretical quantiles), Overlay expected distribution.				✔
D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.			✔	
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.			✔	
F. Include plots of the residuals by factor			✔	
3. Poisson Component				
A. Report overdispersion parameter and other fit statistics (e.g. chi-square / degrees of freedom).	✔			
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor.	✔			
C. Include QQ-plot – (e.g. Student deviance residuals vs. theoretical quantiles), Overlay expected distribution.	✔			
D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.	✔			
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.	✔			
4. Zero-inflated model				
A. Include ROC curve to quantify goodness of fit.	✔			
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor).	✔			
C. Include QQ-plot (e.g. Student dev. residuals vs. theoretical quantiles), Overlay expected distribution.	✔			

Working Group Comments:

1. A. figures by year and month others available on demand (AOD)

1.B. figures by year others AOD

2. B, D-F some available by year others AOD

The feasibility of this diagnostic is still under review.

MODEL DIAGNOSTICS (CONT.)

Not Applicable	Absent	Incomplete	Complete

Working Group Comments:

D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.	✔			
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.	✔			

MODEL RESULTS

A. Tables of Nominal CPUE, Standardized CPUE, Observations, Positive Observations, Proportion Positive Observations and Coefficients of Variation (CVs). Other statistics may also be appropriate to report				✔
B. Figure of Nominal and Standardized Indices with measure of variance (i.e. CVs).				✔

IF MULTIPLE MODEL STRUCTURES WERE CONSIDERED:

(***Note: this is always recommended but required when model diagnostics are poor***.)

1. Plot of resulting indices and estimates of variance	✔			
2. Table of model statistics (e.g. AIC criteria)	✔			

A. Proportion positives AOD

	Date Received	*Workshop Recommendation*	*Revision Deadline ****	*Author and Rapporteur Signatures*
First Submission	3/21/2012	sensitivity index		
Revision				

*The revision deadline is negotiated by the author, the SEDAR coordinator and the CPUE rapporteur. The author **DOES NOT** commit to any **LEGAL OBLIGATION** by agreeing to submit a manuscript before this deadline. The maximum penalty for failure to submit a revised document prior to the submission deadline is rejection of the CPUE series.*

Justification of Working Group Recommendation

-age 0 indices not evaluated because will not be used in stock assessment model
-assessment model will use age 1+ data only

MS GN was used as a sensitivity index in the 2005/2006 assessment

Disadvantages: spatial coverage limited

Advantages: standardized FI survey, long time series, length data available

The MS GN and PC and MML GNs (SEDAR29-WP-01) use similar gear (PC and MS GN gear are identical) with similar selectivities. Recommended to combine indices and use sampling area as a weighting factor. MS index will be reviewed following analysis of combined index.

DW recommends using MS GN (MAR-OCT, 1998-2010) as a sensitivity index.

Evaluation of Abundance Indices Gulf of Mexico Blacktip Shark: Standardized catch rates of blacktip sharks collected during a bottom LL survey in MS (SEDAR29-WP-14)

DESCRIPTION OF THE DATA SOURCE

	Not Applicable	Absent	Incomplete	Complete
1. Fishery Independent Indices				
A. Describe the survey design (e.g. fixed sampling sites, random stratified sampling), location, seasons/months and years of sampling.				✔
B. Describe sampling methodology (e.g. gear, vessel, soak time etc.)				✔
C. Describe any changes in sampling methodology (e.g. gear, vessel, sample design etc.)				✔
D. Describe the variables reported in the data set (e.g. location, time, temperature, catch, effort etc.).				✔
E. What species or species assemblages are targeted by this survey (e.g. red snapper, reef fish, pelagic).				✔
F. Describe the size/age range that the index applies to. Include supporting figures (e.g. size comp) if available.				✔
2. Fishery Dependent Indices				
A. Describe the data source and type of fishery (e.g. commercial handline, commercial longline, recreational hook and line etc.).	✔			
B. Describe any changes to reporting requirements, variables reported, etc.	✔			
C. Describe the variables reported in the data set (e.g. location, time, temperature, catch, effort etc.).	✔			
D Describe the size/age range that the index applies to. Include supporting figures (e.g. size comp) if available.	✔			

Working Group Comments:

METHODS

1. Data Reduction and Exclusions				
A. Describe any data exclusions (e.g. gears, fishing modes, sampling areas etc.). Report the number of records removed and justify removal.	✔			
B. Describe data reduction techniques (if any) used to address targeting (e.g. Stephens and MacCall, 2004; gear configuration, species assemblage etc).	✔			
C. Discuss procedures used to identify outliers. How many were identified? Were they excluded?	✔			

	Not Applicable	Absent	Incomplete	Complete
2. Management Regulations (for FD Indices)				
A. Provide (or cite) history of management regulations (e.g. bag limits, size limits, trip limits, closures etc.).	✔			
B. Describe the effects (if any) of management regulations on CPUE	✔			
C. Discuss methods used (if any) to minimize the effects of management measures on the CPUE series.	✔			
3. Describe Analysis Dataset (after exclusions and other treatments)				
A. Provide tables and/or figures of number of observations by factors (including year, area, etc.) and interaction terms.			✔	
B. Include tables and/or figures of number of positive observations by factors and interaction terms.			✔	
C. Include tables and/or figures of the proportion positive observations by factors and interaction terms.			✔	
D. Include tables and/or figures of average (unstandardized) CPUE by factors and interaction terms.			✔	
E. Include annual maps of locations of survey sites (or fishing trips) and associated catch rates ***OR*** supply the raw data needed to construct these maps (Observation, Year, Latitude, Longitude (or statistical grid, area), Catch, Effort).				✔
F. Describe the effort variable and the units. If more than one effort variable is present in the dataset, justify selection.				✔
G. What are the units of catch (e.g. numbers or biomass, whole weight, gutted weight, kilograms, pounds).				✔
4. Model Standardization				
A. Describe model structure (e.g. delta-lognormal)				✔
B. Describe construction of GLM components (e.g. forward selection from null etc.)				✔
C. Describe inclusion criteria for factors and interactions terms.				✔
D. Were YEAR*FACTOR interactions included in the model? If so, how (e.g. fixed effect, random effect)? Were random effects tested for significance using a likelihood ratio test?				✔
E. Provide a table summarizing the construction of the GLM components.				✔
F. Summarize model statistics of the mixed model formulation(s) (e.g. log likelihood, AIC, BIC etc.)				✔
G. Report convergence statistics.				✔

Working Group Comments:

3. A-D. figures and/or tables by year included, others AOD

MODEL DIAGNOSTICS

Comment: Other model structures are possible and acceptable. Please provide appropriate diagnostics to the CPUE indices working group.

	Not Applicable	Absent	Incomplete	Complete
1. Binomial Component				
A. Include plots of the chi-square residuals by factor.			✔	
B. Include plots of predicted and observed proportion of positive trips by year and factor (e.g. year*area)			✔	
C. Report overdispersion parameter and other fit statistics (e.g. chi-square / degrees of freedom).				✔
2. Lognormal/Gamma Component				
A. Include histogram of log(CPUE) or a histogram of the residuals of the model on CPUE. Overlay the expected distribution.				✔
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor.			✔	
C. Include QQ-plot – (e.g. Student deviance residuals vs. theoretical quantiles), Overlay expected distribution.				✔
D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.			✔	
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.			✔	
F. Include plots of the residuals by factor			✔	
3. Poisson Component				
A. Report overdispersion parameter and other fit statistics (e.g. chi-square / degrees of freedom).	✔			
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor.	✔			
C. Include QQ-plot – (e.g. Student deviance residuals vs. theoretical quantiles), Overlay expected distribution.	✔			
D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.	✔			
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.	✔			
4. Zero-inflated model				
A. Include ROC curve to quantify goodness of fit.	✔			
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor).	✔			
C. Include QQ-plot (e.g. Student dev. residuals vs. theoretical quantiles), Overlay expected distribution.	✔			

Working Group Comments:

1. A. figures by year and month others available on demand (AOD)

1.B. figures by year others AOD

2. B, D-F some available by year others AOD

The feasibility of this diagnostic is still under review.

MODEL DIAGNOSTICS (CONT.)

	Not Applicable	Absent	Incomplete	Complete

Working Group Comments:

D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.	✔			
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.	✔			

MODEL RESULTS

A. Tables of Nominal CPUE, Standardized CPUE, Observations, Positive Observations, Proportion Positive Observations and Coefficients of Variation (CVs). Other statistics may also be appropriate to report				✔
B. Figure of Nominal and Standardized Indices with measure of variance (i.e. CVs).				✔

IF MULTIPLE MODEL STRUCTURES WERE CONSIDERED:

(***Note: this is always recommended but required when model diagnostics are poor***.)

1. Plot of resulting indices and estimates of variance	✔			
2. Table of model statistics (e.g. AIC criteria)	✔			

A. Proportion positives AOD

	Date Received	*Workshop Recommendation*	*Revision Deadline ****	*Author and Rapporteur Signatures*
First Submission	3/21/2012	sensitivity index		
Revision				

*The revision deadline is negotiated by the author, the SEDAR coordinator and the CPUE rapporteur. The author **DOES NOT** commit to any **LEGAL OBLIGATION** by agreeing to submit a manuscript before this deadline. The maximum penalty for failure to submit a revised document prior to the submission deadline is rejection of the CPUE series.*

Justification of Working Group Recommendation

-age 0 indices not evaluated because will not be used in stock assessment model
-assessment model will use age 1+ data only

MS LL is a new index

Disadvantages: spatial coverage limited

Advantages: standardized FI survey, length data available

The MS LL, AL LL (SEDAR29-WP-11), and MS-LA LL (SEDAR29-WP-15) use similar gear (AL LL and MS-LA LL gear are identical) and MS LL and MS-LA LL have similar selectivities. Recommended to combine indices and use sampling area as a weighting factor. MS LL will be reviewed following analysis of combined index.

DW recommends using MS LL (MAR-OCT, 2004-2010) as a sensitivity index.

Evaluation of Abundance Indices Gulf of Mexico Blacktip Shark: Standardized catch rates of blacktip sharks collected during a bottom LL survey in MS (SEDAR29-WP-15)

DESCRIPTION OF THE DATA SOURCE

	Not Applicable	Absent	Incomplete	Complete
1. Fishery Independent Indices				
A. Describe the survey design (e.g. fixed sampling sites, random stratified sampling), location, seasons/months and years of sampling.				✔
B. Describe sampling methodology (e.g. gear, vessel, soak time etc.)				✔
C. Describe any changes in sampling methodology (e.g. gear, vessel, sample design etc.)				✔
D. Describe the variables reported in the data set (e.g. location, time, temperature, catch, effort etc.).				✔
E. What species or species assemblages are targeted by this survey (e.g. red snapper, reef fish, pelagic).				✔
F. Describe the size/age range that the index applies to. Include supporting figures (e.g. size comp) if available.				✔
2. Fishery Dependent Indices				
A. Describe the data source and type of fishery (e.g. commercial handline, commercial longline, recreational hook and line etc.).	✔			
B. Describe any changes to reporting requirements, variables reported, etc.	✔			
C. Describe the variables reported in the data set (e.g. location, time, temperature, catch, effort etc.).	✔			
D Describe the size/age range that the index applies to. Include supporting figures (e.g. size comp) if available.	✔			

Working Group Comments:

METHODS

1. Data Reduction and Exclusions				
A. Describe any data exclusions (e.g. gears, fishing modes, sampling areas etc.). Report the number of records removed and justify removal.	✔			
B. Describe data reduction techniques (if any) used to address targeting (e.g. Stephens and MacCall, 2004; gear configuration, species assemblage etc).	✔			
C. Discuss procedures used to identify outliers. How many were identified? Were they excluded?	✔			

	Not Applicable	Absent	Incomplete	Complete
2. Management Regulations (for FD Indices)				
A. Provide (or cite) history of management regulations (e.g. bag limits, size limits, trip limits, closures etc.).	✔			
B. Describe the effects (if any) of management regulations on CPUE	✔			
C. Discuss methods used (if any) to minimize the effects of management measures on the CPUE series.	✔			
3. Describe Analysis Dataset (after exclusions and other treatments)				
A. Provide tables and/or figures of number of observations by factors (including year, area, etc.) and interaction terms.			✔	
B. Include tables and/or figures of number of positive observations by factors and interaction terms.			✔	
C. Include tables and/or figures of the proportion positive observations by factors and interaction terms.			✔	
D. Include tables and/or figures of average (unstandardized) CPUE by factors and interaction terms.			✔	
E. Include annual maps of locations of survey sites (or fishing trips) and associated catch rates ***OR*** supply the raw data needed to construct these maps (Observation, Year, Latitude, Longitude (or statistical grid, area), Catch, Effort).				✔
F. Describe the effort variable and the units. If more than one effort variable is present in the dataset, justify selection.				✔
G. What are the units of catch (e.g. numbers or biomass, whole weight, gutted weight, kilograms, pounds).				✔
4. Model Standardization				
A. Describe model structure (e.g. delta-lognormal)				✔
B. Describe construction of GLM components (e.g. forward selection from null etc.)				✔
C. Describe inclusion criteria for factors and interactions terms.				✔
D. Were YEAR*FACTOR interactions included in the model? If so, how (e.g. fixed effect, random effect)? Were random effects tested for significance using a likelihood ratio test?				✔
E. Provide a table summarizing the construction of the GLM components.				✔
F. Summarize model statistics of the mixed model formulation(s) (e.g. log likelihood, AIC, BIC etc.)				✔
G. Report convergence statistics.				✔

Working Group Comments:

3. A-D. figures and/or tables by year included, others AOD

MODEL DIAGNOSTICS

Comment: Other model structures are possible and acceptable. Please provide appropriate diagnostics to the CPUE indices working group.

	Not Applicable	Absent	Incomplete	Complete
1. Binomial Component				
A. Include plots of the chi-square residuals by factor.			✔	
B. Include plots of predicted and observed proportion of positive trips by year and factor (e.g. year*area)			✔	
C. Report overdispersion parameter and other fit statistics (e.g. chi-square / degrees of freedom).				✔
2. Lognormal/Gamma Component				
A. Include histogram of log(CPUE) or a histogram of the residuals of the model on CPUE. Overlay the expected distribution.				✔
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor.			✔	
C. Include QQ-plot – (e.g. Student deviance residuals vs. theoretical quantiles), Overlay expected distribution.				✔
D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.			✔	
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.			✔	
F. Include plots of the residuals by factor			✔	
3. Poisson Component				
A. Report overdispersion parameter and other fit statistics (e.g. chi-square / degrees of freedom).	✔			
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor.	✔			
C. Include QQ-plot – (e.g. Student deviance residuals vs. theoretical quantiles), Overlay expected distribution.	✔			
D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.	✔			
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.	✔			
4. Zero-inflated model				
A. Include ROC curve to quantify goodness of fit.	✔			
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor).	✔			
C. Include QQ-plot (e.g. Student dev. residuals vs. theoretical quantiles), Overlay expected distribution.	✔			

Working Group Comments:

1. A. figures by year, month, area and region others available on demand (AOD)

1.B. figures by year others AOD

2. B, D-F some available by year others AOD

The feasibility of this diagnostic is still under review.

MODEL DIAGNOSTICS (CONT.)

	Not Applicable	Absent	Incomplete	Complete

Working Group Comments:

D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.	✔			
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.	✔			

MODEL RESULTS

A. Tables of Nominal CPUE, Standardized CPUE, Observations, Positive Observations, Proportion Positive Observations and Coefficients of Variation (CVs). Other statistics may also be appropriate to report				✔
B. Figure of Nominal and Standardized Indices with measure of variance (i.e. CVs).				✔

A. Proportion positives AOD

IF MULTIPLE MODEL STRUCTURES WERE CONSIDERED:

(***Note: this is always recommended but required when model diagnostics are poor***.)

1. Plot of resulting indices and estimates of variance	✔			
2. Table of model statistics (e.g. AIC criteria)	✔			

	Date Received	*Workshop Recommendation*	*Revision Deadline ****	*Author and Rapporteur Signatures*
First Submission	reviewed 3/21/2012	sensitivity index		
Revision				

*The revision deadline is negotiated by the author, the SEDAR coordinator and the CPUE rapporteur. The author **DOES NOT** commit to any **LEGAL OBLIGATION** by agreeing to submit a manuscript before this deadline. The maximum penalty for failure to submit a revised document prior to the submission deadline is rejection of the CPUE series.*

Justification of Working Group Recommendation

-age 0 indices not evaluated because will not be used in stock assessment model
-assessment model will use age 1+ data only

MS-LA LL is a new index

Disadvantages: spatial coverage limited, short time series

Advantages: standardized FI survey, length data available

The MS-LA LL, AL LL (SEDAR29-WP-11), and MS LL (SEDAR29-WP-14) use similar gear (AL LL and MS-LA gear are identical) and MS LL and MS-LA LL have similar selectivities. Recommended to combine indices and use sampling area as a weighting factor. MS-LA LL will be reviewed following analysis of combined index.

DW recommends using MS-LA LL (MAR-OCT, 2008-2010) as a sensitivity index.

Evaluation of Abundance Indices Gulf of Mexico Blacktip Shark: Com Bottom LL Vessel Standardized Catch Rates of GOM Blacktip Sharks target w/ log reg (SEDAR29-WP-19)

DESCRIPTION OF THE DATA SOURCE

	Not Applicable	Absent	Incomplete	Complete
1. Fishery Independent Indices				
A. Describe the survey design (e.g. fixed sampling sites, random stratified sampling), location, seasons/months and years of sampling.	✔			
B. Describe sampling methodology (e.g. gear, vessel, soak time etc.)	✔			
C. Describe any changes in sampling methodology (e.g. gear, vessel, sample design etc.)	✔			
D. Describe the variables reported in the data set (e.g. location, time, temperature, catch, effort etc.).	✔			
E. What species or species assemblages are targeted by this survey (e.g. red snapper, reef fish, pelagic).	✔			
F. Describe the size/age range that the index applies to. Include supporting figures (e.g. size comp) if available.	✔			
2. Fishery Dependent Indices				
A. Describe the data source and type of fishery (e.g. commercial handline, commercial longline, recreational hook and line etc.).				✔
B. Describe any changes to reporting requirements, variables reported, etc.				✔
C. Describe the variables reported in the data set (e.g. location, time, temperature, catch, effort etc.).				✔
D Describe the size/age range that the index applies to. Include supporting figures (e.g. size comp) if available.		✔		

METHODS

1. Data Reduction and Exclusions				
A. Describe any data exclusions (e.g. gears, fishing modes, sampling areas etc.). Report the number of records removed and justify removal.				✔
B. Describe data reduction techniques (if any) used to address targeting (e.g. Stephens and MacCall, 2004; gear configuration, species assemblage etc).				✔
C. Discuss procedures used to identify outliers. How many were identified? Were they excluded?				✔

Working Group Comments:

2D. no size information available

	Not Applicable	Absent	Incomplete	Complete
2. Management Regulations (for FD Indices)				
A. Provide (or cite) history of management regulations (e.g. bag limits, size limits, trip limits, closures etc.).				✔
B. Describe the effects (if any) of management regulations on CPUE				✔
C. Discuss methods used (if any) to minimize the effects of management measures on the CPUE series.				✔
3. Describe Analysis Dataset (after exclusions and other treatments)				
A. Provide tables and/or figures of number of observations by factors (including year, area, etc.) and interaction terms.			✔	
B. Include tables and/or figures of number of positive observations by factors and interaction terms.			✔	
C. Include tables and/or figures of the proportion positive observations by factors and interaction terms.			✔	
D. Include tables and/or figures of average (unstandardized) CPUE by factors and interaction terms.			✔	
E. Include annual maps of locations of survey sites (or fishing trips) and associated catch rates ***OR*** supply the raw data needed to construct these maps (Observation, Year, Latitude, Longitude (or statistical grid, area), Catch, Effort).			✔	
F. Describe the effort variable and the units. If more than one effort variable is present in the dataset, justify selection.				✔
G. What are the units of catch (e.g. numbers or biomass, whole weight, gutted weight, kilograms, pounds).				✔
4. Model Standardization				
A. Describe model structure (e.g. delta-lognormal)				✔
B. Describe construction of GLM components (e.g. forward selection from null etc.)				✔
C. Describe inclusion criteria for factors and interactions terms.				✔
D. Were YEAR*FACTOR interactions included in the model? If so, how (e.g. fixed effect, random effect)? Were random effects tested for significance using a likelihood ratio test?				✔
E. Provide a table summarizing the construction of the GLM components.			✔	
F. Summarize model statistics of the mixed model formulation(s) (e.g. log likelihood, AIC, BIC etc.)				✔
G. Report convergence statistics.				✔

Working Group Comments:

2. Trip limits looked at but didn't appear to be a problem

3. A-D. some tables/figures by year included, others AOD

3. E. total effort plotted by grid square, confidentiality prevents plotting individual locations

4.E. AOD

MODEL DIAGNOSTICS

Comment: Other model structures are possible and acceptable. Please provide appropriate diagnostics to the CPUE indices working group.

	Not Applicable	Absent	Incomplete	Complete
1. Binomial Component				
A. Include plots of the chi-square residuals by factor.				✔
B. Include plots of predicted and observed proportion of positive trips by year and factor (e.g. year*area)			✔	
C. Report overdispersion parameter and other fit statistics (e.g. chi-square / degrees of freedom).			✔	
2. Lognormal/Gamma Component				
A. Include histogram of log(CPUE) or a histogram of the residuals of the model on CPUE. Overlay the expected distribution.				✔
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor.				✔
C. Include QQ-plot – (e.g. Student deviance residuals vs. theoretical quantiles), Overlay expected distribution.				✔
D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.			✔	
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.			✔	
F. Include plots of the residuals by factor				✔
3. Poisson Component				
A. Report overdispersion parameter and other fit statistics (e.g. chi-square / degrees of freedom).	✔			
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor.	✔			
C. Include QQ-plot – (e.g. Student deviance residuals vs. theoretical quantiles), Overlay expected distribution.	✔			
D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.	✔			
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.	✔			
4. Zero-inflated model				
A. Include ROC curve to quantify goodness of fit.	✔			
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor).	✔			
C. Include QQ-plot (e.g. Student dev. residuals vs. theoretical quantiles), Overlay expected distribution.	✔			

Working Group Comments:

1.B. figs by year others available on demand (AOD)
1.C. AOD

2.D,E. AOD

The feasibility of this diagnostic is still under review.

MODEL DIAGNOSTICS (CONT.)

Not Applicable	Absent	Incomplete	Complete

Working Group Comments:

D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.	✔			
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.	✔			

MODEL RESULTS

A. Tables of Nominal CPUE, Standardized CPUE, Observations, Positive Observations, Proportion Positive Observations and Coefficients of Variation (CVs). Other statistics may also be appropriate to report				✔
B. Figure of Nominal and Standardized Indices with measure of variance (i.e. CVs).				✔

IF MULTIPLE MODEL STRUCTURES WERE CONSIDERED:

(***Note: this is always recommended but required when model diagnostics are poor***.)

1. Plot of resulting indices and estimates of variance	✔			
2. Table of model statistics (e.g. AIC criteria)	✔			

	Date Received	*Workshop Recommendation*	*Revision Deadline ****	*Author and Rapporteur Signatures*
First Submission	reviewed 3/21/2012	sensitivity index		
Revision				

*The revision deadline is negotiated by the author, the SEDAR coordinator and the CPUE rapporteur. The author **DOES NOT** commit to any **LEGAL OBLIGATION** by agreeing to submit a manuscript before this deadline. The maximum penalty for failure to submit a revised document prior to the submission deadline is rejection of the CPUE series.*

Justification of Working Group Recommendation

Commercial BLL Logs w/ targeting using Logistic regression (BLL Logs) is a new index.

Advantages: good spatial coverage, no missing years, long time series, data subset for targeting blacktips

Disadvantages: fishery dependent, effort is trip based not individual sets, no size information, landings not catch, self-reported

DW recommends to use the BLL Logs index (JAN-DEC,1996-2010) as sensitivity.

Evaluation of Abundance Indices Gulf of Mexico Blacktip Shark: Combined GN index (SEDAR29-WP-21)

DESCRIPTION OF THE DATA SOURCE	Not Applicable	Absent	Incomplete	Complete
1. Fishery Independent Indices				
A. Describe the survey design (e.g. fixed sampling sites, random stratified sampling), location, seasons/months and years of sampling.				✔
B. Describe sampling methodology (e.g. gear, vessel, soak time etc.)				✔
C. Describe any changes in sampling methodology (e.g. gear, vessel, sample design etc.)				✔
D. Describe the variables reported in the data set (e.g. location, time, temperature, catch, effort etc.).				✔
E. What species or species assemblages are targeted by this survey (e.g. red snapper, reef fish, pelagic).				✔
F. Describe the size/age range that the index applies to. Include supporting figures (e.g. size comp) if available.				✔
2. Fishery Dependent Indices				
A. Describe the data source and type of fishery (e.g. commercial handline, commercial longline, recreational hook and line etc.).	✔			
B. Describe any changes to reporting requirements, variables reported, etc.	✔			
C. Describe the variables reported in the data set (e.g. location, time, temperature, catch, effort etc.).	✔			
D Describe the size/age range that the index applies to. Include supporting figures (e.g. size comp) if available.	✔			
METHODS				
1. Data Reduction and Exclusions				
A. Describe any data exclusions (e.g. gears, fishing modes, sampling areas etc.). Report the number of records removed and justify removal.	✔			
B. Describe data reduction techniques (if any) used to address targeting (e.g. Stephens and MacCall, 2004; gear configuration, species assemblage etc).	✔			
C. Discuss procedures used to identify outliers. How many were identified? Were they excluded?	✔			

Working Group Comments:

	Not Applicable	Absent	Incomplete	Complete
2. Management Regulations (for FD Indices)				
A. Provide (or cite) history of management regulations (e.g. bag limits, size limits, trip limits, closures etc.).	✔			
B. Describe the effects (if any) of management regulations on CPUE	✔			
C. Discuss methods used (if any) to minimize the effects of management measures on the CPUE series.	✔			
3. Describe Analysis Dataset (after exclusions and other treatments)				
A. Provide tables and/or figures of number of observations by factors (including year, area, etc.) and interaction terms.				✔
B. Include tables and/or figures of number of positive observations by factors and interaction terms.			✔	
C. Include tables and/or figures of the proportion positive observations by factors and interaction terms.			✔	
D. Include tables and/or figures of average (unstandardized) CPUE by factors and interaction terms.			✔	
E. Include annual maps of locations of survey sites (or fishing trips) and associated catch rates ***OR*** supply the raw data needed to construct these maps (Observation, Year, Latitude, Longitude (or statistical grid, area), Catch, Effort).			✔	
F. Describe the effort variable and the units. If more than one effort variable is present in the dataset, justify selection.				✔
G. What are the units of catch (e.g. numbers or biomass, whole weight, gutted weight, kilograms, pounds).				✔
4. Model Standardization				
A. Describe model structure (e.g. delta-lognormal)				✔
B. Describe construction of GLM components (e.g. forward selection from null etc.)				✔
C. Describe inclusion criteria for factors and interactions terms.				✔
D. Were YEAR*FACTOR interactions included in the model? If so, how (e.g. fixed effect, random effect)? Were random effects tested for significance using a likelihood ratio test?				✔
E. Provide a table summarizing the construction of the GLM components.				✔
F. Summarize model statistics of the mixed model formulation(s) (e.g. log likelihood, AIC, BIC etc.)				✔
G. Report convergence statistics.				✔

Working Group Comments:

3. B-D. tables or figures by year included, others AOD

3. E. plot of all locations together, yearly plots AOD

MODEL DIAGNOSTICS

Comment: Other model structures are possible and acceptable. Please provide appropriate diagnostics to the CPUE indices working group.

	Not Applicable	Absent	Incomplete	Complete
1. Binomial Component				
A. Include plots of the chi-square residuals by factor.			✔	
B. Include plots of predicted and observed proportion of positive trips by year and factor (e.g. year*area)			✔	
C. Report overdispersion parameter and other fit statistics (e.g. chi-square / degrees of freedom).				✔
2. Lognormal/Gamma Component				
A. Include histogram of log(CPUE) or a histogram of the residuals of the model on CPUE. Overlay the expected distribution.				✔
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor.			✔	
C. Include QQ-plot – (e.g. Student deviance residuals vs. theoretical quantiles), Overlay expected distribution.				✔
D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.			✔	
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.			✔	
F. Include plots of the residuals by factor			✔	
3. Poisson Component				
A. Report overdispersion parameter and other fit statistics (e.g. chi-square / degrees of freedom).	✔			
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor.	✔			
C. Include QQ-plot – (e.g. Student deviance residuals vs. theoretical quantiles), Overlay expected distribution.	✔			
D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.	✔			
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.	✔			
4. Zero-inflated model				
A. Include ROC curve to quantify goodness of fit.	✔			
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor).	✔			
C. Include QQ-plot (e.g. Student dev. residuals vs. theoretical quantiles), Overlay expected distribution.	✔			

Working Group Comments:

1. A/B figs by year others available on demand (AOD)

2. B, D-F some available by year others AOD

]

The feasibility of this diagnostic is still under review.

MODEL DIAGNOSTICS (CONT.)

Not Applicable	Absent	Incomplete	Complete

Working Group Comments:

D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.	✔			
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.	✔			

MODEL RESULTS

A. Tables of Nominal CPUE, Standardized CPUE, Observations, Positive Observations, Proportion Positive Observations and Coefficients of Variation (CVs). Other statistics may also be appropriate to report			✔	
B. Figure of Nominal and Standardized Indices with measure of variance (i.e. CVs).				✔

IF MULTIPLE MODEL STRUCTURES WERE CONSIDERED:

(***Note: this is always recommended but required when model diagnostics are poor***.)

1. Plot of resulting indices and estimates of variance	✔			
2. Table of model statistics (e.g. AIC criteria)	✔			

A. proportion positives AOD

	Date Received	*Workshop Recommendation*	*Revision Deadline ****	*Author and Rapporteur Signatures*
First Submission	reviewed 3/21/2012	base index		
Revision				

*The revision deadline is negotiated by the author, the SEDAR coordinator and the CPUE rapporteur. The author **DOES NOT** commit to any **LEGAL OBLIGATION** by agreeing to submit a manuscript before this deadline. The maximum penalty for failure to submit a revised document prior to the submission deadline is rejection of the CPUE series.*

Justification of Working Group Recommendation

PC+MML+MS GN - new index

Advantages - better spatial coverage, reduces some of the inter-annual variability

All three surveys (PC, MML and MS GN) use similar gear (PC and MS gear is identical) with similar selectivities. Recommended to combine indices and use sampling area as a weighting factor.

PC+MML+MS GN index (MAR-OCT, 1995-2010) is recommended as a base index

Evaluation of Abundance Indices Gulf of Mexico Blacktip Shark: Combined LL index (SEDAR29-WP-22)

DESCRIPTION OF THE DATA SOURCE	Not Applicable	Absent	Incomplete	Complete
1. Fishery Independent Indices				
A. Describe the survey design (e.g. fixed sampling sites, random stratified sampling), location, seasons/months and years of sampling.				✔
B. Describe sampling methodology (e.g. gear, vessel, soak time etc.)				✔
C. Describe any changes in sampling methodology (e.g. gear, vessel, sample design etc.)				✔
D. Describe the variables reported in the data set (e.g. location, time, temperature, catch, effort etc.).				✔
E. What species or species assemblages are targeted by this survey (e.g. red snapper, reef fish, pelagic).				✔
F. Describe the size/age range that the index applies to. Include supporting figures (e.g. size comp) if available.				✔
2. Fishery Dependent Indices				
A. Describe the data source and type of fishery (e.g. commercial handline, commercial longline, recreational hook and line etc.).	✔			
B. Describe any changes to reporting requirements, variables reported, etc.	✔			
C. Describe the variables reported in the data set (e.g. location, time, temperature, catch, effort etc.).	✔			
D Describe the size/age range that the index applies to. Include supporting figures (e.g. size comp) if available.	✔			
METHODS				
1. Data Reduction and Exclusions				
A. Describe any data exclusions (e.g. gears, fishing modes, sampling areas etc.). Report the number of records removed and justify removal.	✔			
B. Describe data reduction techniques (if any) used to address targeting (e.g. Stephens and MacCall, 2004; gear configuration, species assemblage etc).	✔			
C. Discuss procedures used to identify outliers. How many were identified? Were they excluded?	✔			

Working Group Comments:

	Not Applicable	Absent	Incomplete	Complete
2. Management Regulations (for FD Indices)				
A. Provide (or cite) history of management regulations (e.g. bag limits, size limits, trip limits, closures etc.).	✔			
B. Describe the effects (if any) of management regulations on CPUE	✔			
C. Discuss methods used (if any) to minimize the effects of management measures on the CPUE series.	✔			
3. Describe Analysis Dataset (after exclusions and other treatments)				
A. Provide tables and/or figures of number of observations by factors (including year, area, etc.) and interaction terms.				✔
B. Include tables and/or figures of number of positive observations by factors and interaction terms.			✔	
C. Include tables and/or figures of the proportion positive observations by factors and interaction terms.			✔	
D. Include tables and/or figures of average (unstandardized) CPUE by factors and interaction terms.			✔	
E. Include annual maps of locations of survey sites (or fishing trips) and associated catch rates ***OR*** supply the raw data needed to construct these maps (Observation, Year, Latitude, Longitude (or statistical grid, area), Catch, Effort).			✔	
F. Describe the effort variable and the units. If more than one effort variable is present in the dataset, justify selection.				✔
G. What are the units of catch (e.g. numbers or biomass, whole weight, gutted weight, kilograms, pounds).				✔
4. Model Standardization				
A. Describe model structure (e.g. delta-lognormal)				✔
B. Describe construction of GLM components (e.g. forward selection from null etc.)				✔
C. Describe inclusion criteria for factors and interactions terms.				✔
D. Were YEAR*FACTOR interactions included in the model? If so, how (e.g. fixed effect, random effect)? Were random effects tested for significance using a likelihood ratio test?				✔
E. Provide a table summarizing the construction of the GLM components.				✔
F. Summarize model statistics of the mixed model formulation(s) (e.g. log likelihood, AIC, BIC etc.)				✔
G. Report convergence statistics.				✔

Working Group Comments:

3. B-D. tables or figures by year included, others AOD

3. E. plot of all locations together, yearly plots AOD

MODEL DIAGNOSTICS

Comment: Other model structures are possible and acceptable. Please provide appropriate diagnostics to the CPUE indices working group.

	Not Applicable	Absent	Incomplete	Complete
1. Binomial Component				
A. Include plots of the chi-square residuals by factor.			✔	
B. Include plots of predicted and observed proportion of positive trips by year and factor (e.g. year*area)			✔	
C. Report overdispersion parameter and other fit statistics (e.g. chi-square / degrees of freedom).				✔
2. Lognormal/Gamma Component				
A. Include histogram of log(CPUE) or a histogram of the residuals of the model on CPUE. Overlay the expected distribution.				✔
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor.			✔	
C. Include QQ-plot – (e.g. Student deviance residuals vs. theoretical quantiles), Overlay expected distribution.				✔
D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.			✔	
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.			✔	
F. Include plots of the residuals by factor			✔	
3. Poisson Component				
A. Report overdispersion parameter and other fit statistics (e.g. chi-square / degrees of freedom).	✔			
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor.	✔			
C. Include QQ-plot – (e.g. Student deviance residuals vs. theoretical quantiles), Overlay expected distribution.	✔			
D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.	✔			
E. Include diagnostic plot for link function (e.g. linear response variable vs. linear predictor). Overlay expected distribution.	✔			
4. Zero-inflated model				
A. Include ROC curve to quantify goodness of fit.	✔			
B. Include plots describing error distribution (e.g. Studentized residuals vs. linear predictor).	✔			
C. Include QQ-plot (e.g. Student dev. residuals vs. theoretical quantiles), Overlay expected distribution.	✔			

Working Group Comments:

1. A/B figs by year others available on demand (AOD)

2. B, D-F some available by year others AOD

]

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MODEL DIAGNOSTICS (CONT.)

Not Applicable	Absent	Incomplete	Complete

Working Group Comments:

D. Include diagnostic plot for variance function (e.g. square root of std residuals vs. fitted values). Overlay expected distribution.	✔			
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MS+MS-LA+AL LL index (JAN-DEC, 1995-2010) is recommended as a base index