AG BMP IMPLEMENTATION VERIFICATION TOOL

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OBJECTIVES

To generate qualitative assessments of relative confidence in BMP verification procedures for planning purposes.

To provide a framework for assessing the relative strengths and weaknesses of alternative verification procedures for documenting BMP implementation by jurisdictions and partners.

To provide consistency in the planning assessment of verification protocols across BMPs, sectors, and jurisdictions.

OBJECTIVES

Tool can be used for internal planning development rating by jurisdictional agencies and partners.

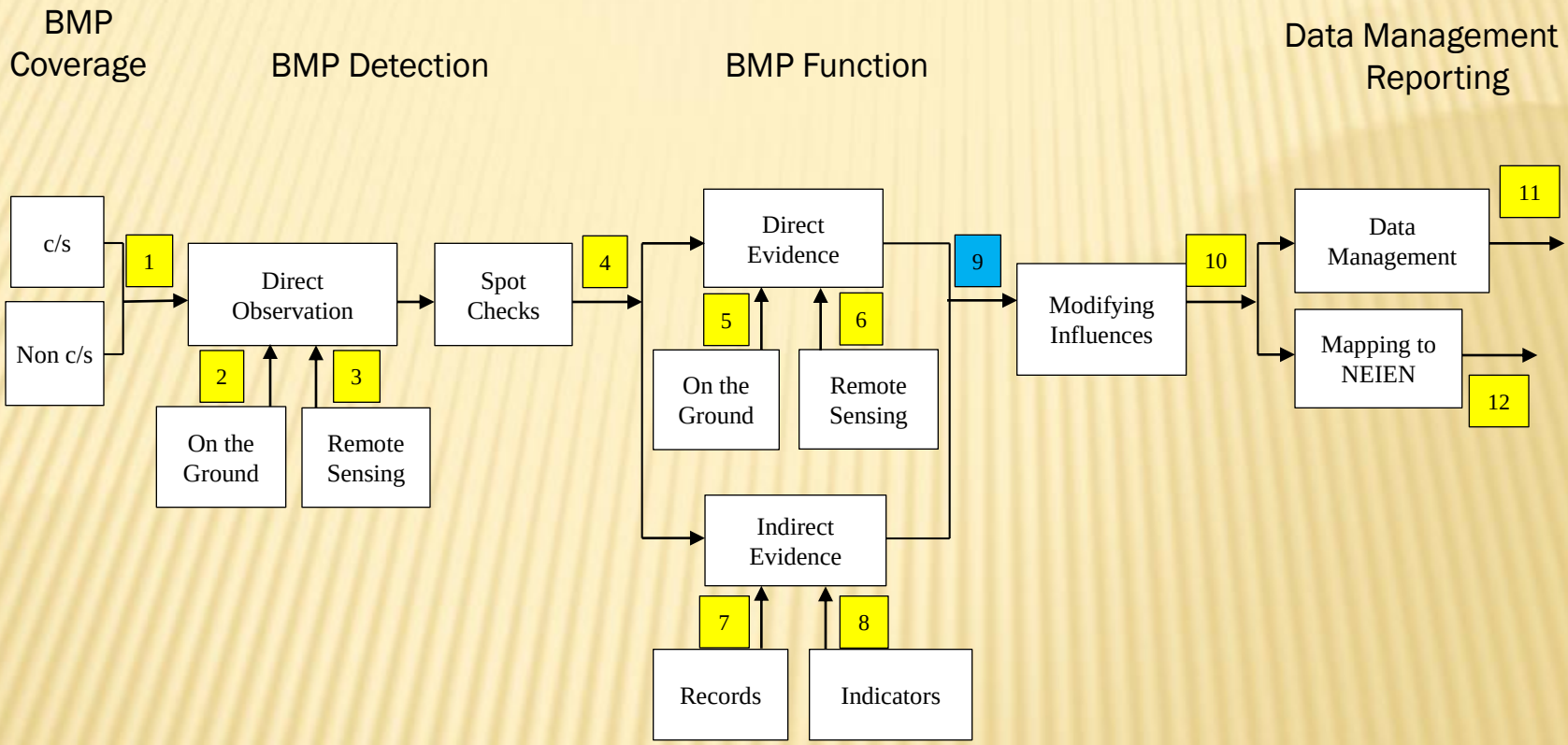
Tool can also be used for independent rating by non-jurisdictional agencies and partners.

Tool ratings are intended to inform decisions, not make decisions.

LIMITATIONS

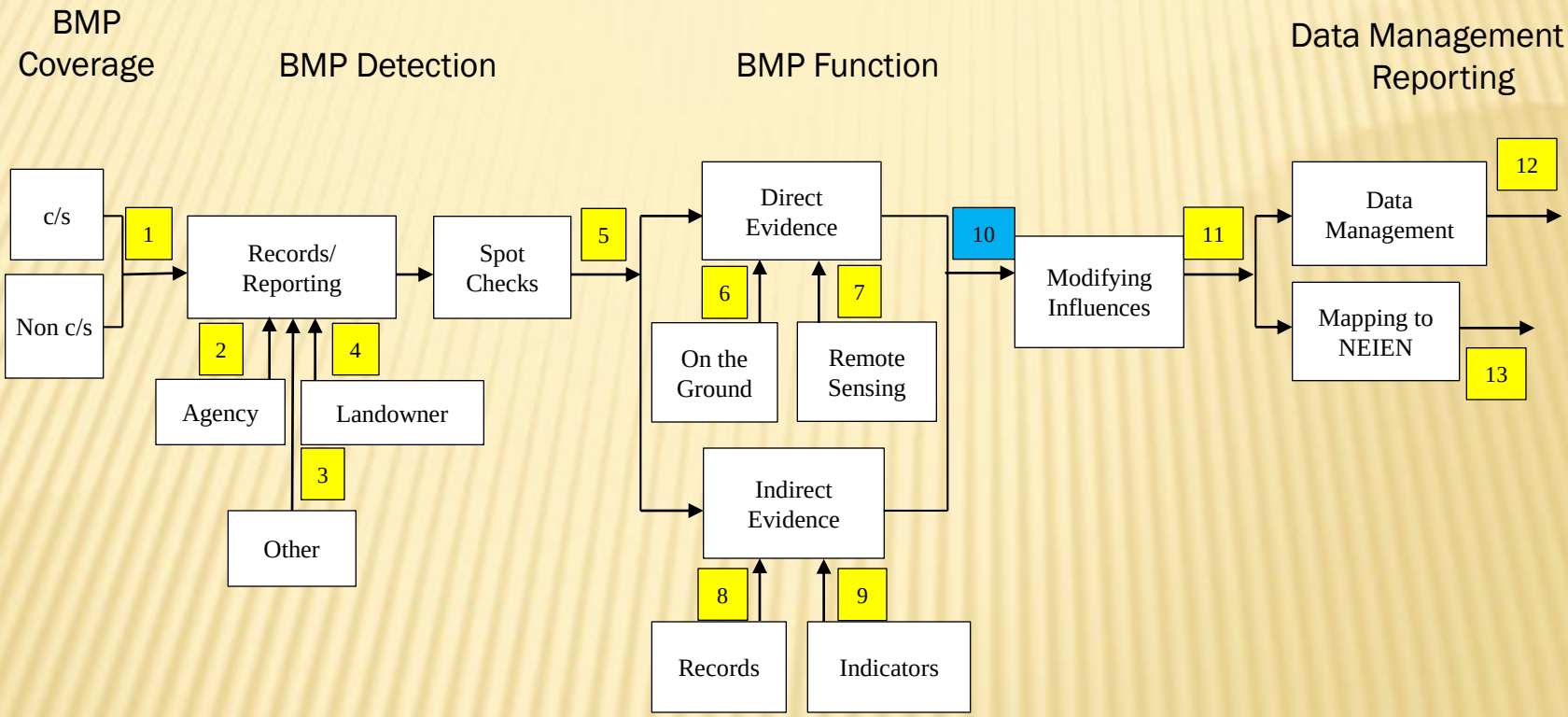
- Tool scoring is largely based on best professional judgment, but could include quantitative basis as available.
- Testing of tool has been limited (i.e., forestry)
- Scores do not translate directly into specific confidence levels.
- Value of ratings depends very much on the process used to develop scores.

ERROR/UNCERTAINTY– DIRECT OBSERVATION



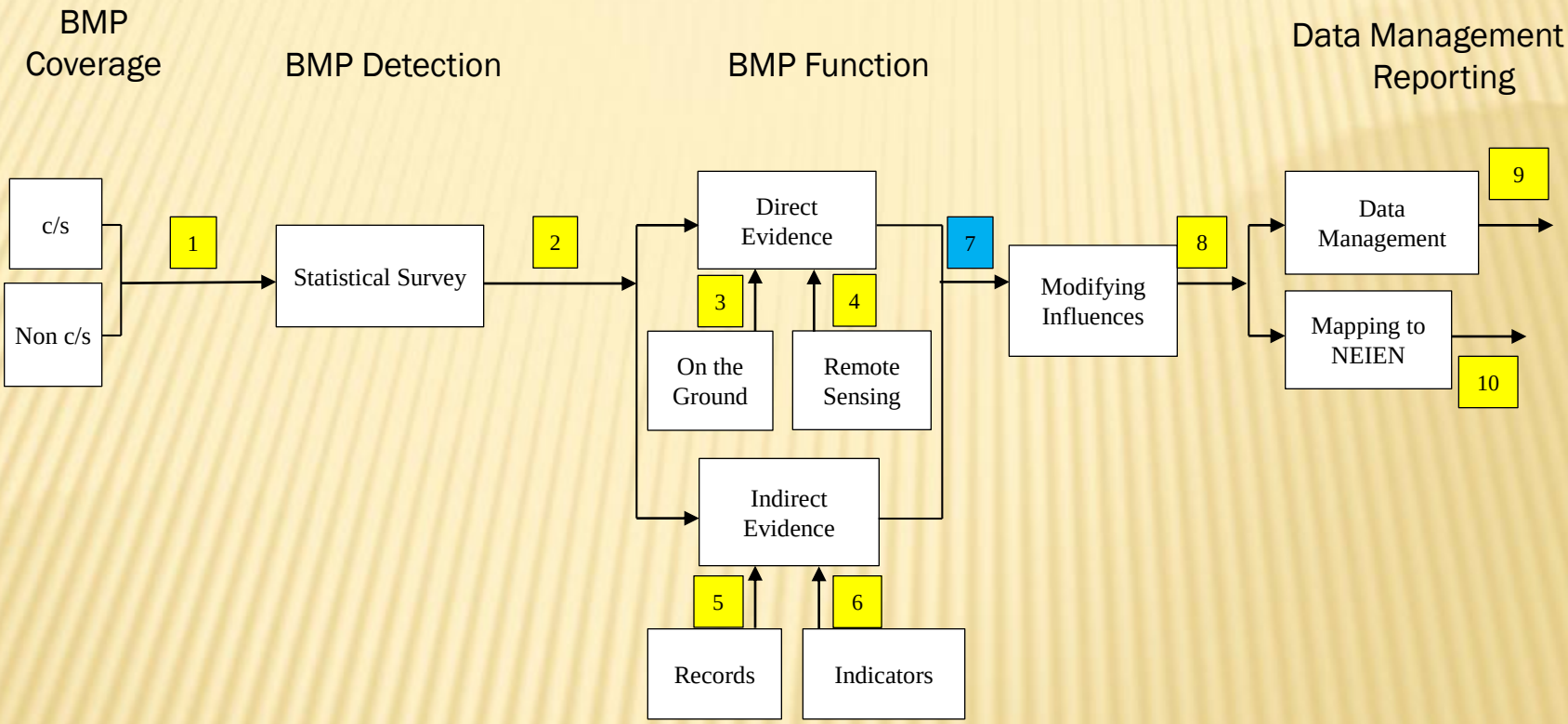
Term 9 is the overall error/uncertainty for BMP Function, integrating the errors/uncertainties of terms 5-8. For this reason it is not included in the Tool.

ERROR/UNCERTAINTY– RECORDS/REPORTING



Term 10 is the overall error/uncertainty for BMP Function, integrating the errors/uncertainties of terms 6-9. For this reason it is not included in the Tool.

ERROR/UNCERTAINTY– STATISTICAL SURVEYS



Term 7 is the overall error/uncertainty for BMP Function, integrating the errors/uncertainties of terms 3-6. For this reason it is not included in the Tool.

TOOL SCORING

Confidence in the step identified with each* error term is rated on a scale of 1 (lowest) to 5 (highest), then multiplied by a weighting factor.

CATEGORY	WEIGHTING
BMP COVERAGE (c/s, non-c/s)	30
BMP DETECTION	45
BMP FUNCTION	45
DATA MANAGEMENT & REPORTING	30
TOTAL (Maximum)	150

*Note: BMP Function terms 9, 10, and 7 for Direct Observation, Records/Reporting, and Statistical Surveys, respectively, are not included in the Tool. See previous three slides.

TOOL SCORING

SCORE*	RATING
>125	Very High
101-125	High
76-100	Moderate
<76	Low

*Possible Range is 30-150.

PROCESS

- State does self assessment:
  - Inclusive process encouraged by including external agency and non-agency partners.
  - Ratings/findings and panel membership included in verification plan submittal package.
- Independent review is next:
  - Option for non-jurisdictional agencies and partners.
  - Jurisdictions may also use index for their own scoring/rating of partner jurisdictional plans.
  - Part of the verification plans and recommendations provided to the BMP Verification Review Panel.

PROCESS

- Tool should be applied to each verification protocol used for each BMP in each state.
- Six or more individuals should score each protocol-BMP combination.
  - Agree on how to reconcile differences.
  - Transparency and inclusiveness will enhance process.
- Scorers need to seek consistency in how they score protocol features across sectors, practices, and verification protocols.
  - Note why specific ratings were given and seek consistency.

PROCESS

- Use sub-scores to identify areas of strengths and weaknesses for each protocol-BMP combination.
- Can use findings as part of evaluation of relative of confidence levels for the protocol-BMP combinations.
- Ratings only intended to inform decisions.

ILLUSTRATION OF POTENTIAL RATINGS

Reviewer (affiliation)	Protocol 1 Score	Protocol 2 Score	Protocol 3 Score
A (state 1)	78 (Medium)	135 (Very High)	115 (High)
B (state 2)	82 (Medium)	75 (Low)	129 (Very High)
C (federal)	76 (Medium)	112 (High)	44 (Low)
D (industry)	77 (Medium)	88 (Medium)	65 (Low)
E (NGO)	79 (Medium)	127 (Very High)	37 (Low)
F (landowner)	85 (Medium)	82 (Medium)	60 (Low)
G (other)	92 (Medium)	65 (Low)	52 (Low)
Score Range	76 – 92 (Medium-Medium)	65-135 (Low-Very High)	37-125 (Low-Very High)
Score Mean	81 (Medium)	98 (Medium)	72 (Low)
Comment	Good Agreement	Wide Disagreement	Two Different Views
Final Rating	Medium	?	?

CAVEATS

- Need to develop consistent rules on which scoring scheme to apply, especially for hybrid verification protocols.
- Document assumptions and basis for best professional judgment.
- Need to agree on procedures for achieving consensus among raters.
- Cross-checks between jurisdictions may be desirable to ensure comparability of ratings.

FROM PAPER TO SPREADSHEET VERSION

- April, 2013: Pilot test with Forestry Workgroup
- Lessons learned:
  - Verification of BMPs varies over both contractual and physical lifetime of practices.
  - Spot checks can apply to BMP Detection and Function … and vary over time.
  - Verification protocols can cover all or some BMPs.
  - BMPs can be verified with one or more protocols.
  - Program knowledge is essential for all who review protocols.
- More realistic = more complicated:
  - More math required to derive qualitative ratings.
  - Spreadsheet!

FROM PAPER TO SPREADSHEET VERSION

- Three "Types" of BMP Implementation:
  - Voluntary or Required BMPs with Cost-Share Support.
  - Required BMPs Without Cost-Share Support.
  - Voluntary BMPs Without Cost-Share Support.
- Two Timeframes for Practices:
  - Contractual or Regulatory Life Span (i.e. Permit).
  - Physical Life Span.
  - Timeframes are BMP-Specific.

FROM PAPER TO SPREADSHEET VERSION

- Three Phases for Verification:
  - BMP Installation (Year 1).
  - Post-BMP Implementation While Under Contract or Regulatory Oversight (i.e. Permit).
    - Routine Inspections/Assessments
    - Special Inspections/Assessments
  - Post-BMP Implementation After Contract Expires and/or Regulatory Oversight Ends.

FROM PAPER TO SPREADSHEET VERSION

- Three Aspects of Verification:
  - BMP Coverage:
    - To what extent does protocol cover voluntary, regulatory, cost-shared, and non-cost-shared practices?
  - BMP Detection:
    - Is it there?
  - BMP Function:
    - Is it designed and functioning properly?

FROM PAPER TO SPREADSHEET VERSION

- Multiple Verification Methods Possible:
  - Matches list in Agriculture Workgroup verification protocol matrix (or other non-point source protocol).
  - Spot-checks can be incorporated within or supplemental to verification methods.
    - Multiple approaches to spot checking
  - Both verification and spot-checking methods are scored.
- Data Management and Reporting

SPREADSHEET: TEST VERSION – BASIC INPUT

State:	State Name Here
Sector:	Agriculture, Forestry, etc.
Program:	State Agriculture Program, etc.
Verification Protocol Rated:	Name given to protocol
Rated By:	Steve
Date Rated:	20130401
BMPs Addressed:	Animal Waste Management System (structural)
	Alternate Crops (management practices)
	Cover Crops (annual)
	Lagoon Covers (structural)
	Tree Planting (management practices)

SPREADSHEET: SAMPLE INPUT SCREENS

BMPs Addressed (up to 50 BMPs)	Practices Addressed by Protocol Voluntary or Required BMPs with Cost-Share Support					
BMP	Federal	State	NGO	Private	Percentage of All BMPs Implemented with Cost-share Support	Percent Inclusion of All BMPs Implemented with Cost-Share Support
Animal Waste Management System (structural)	Yes	No	No	No	85	88

BMP Weighting Factor	Contract or Regulatory Life Span (years)	Physical Life Span (years)	Inclusion Sub-Score
5.0	3	30	9.5

Protocol Purpose		BMP Detection		
BMP	Method Used	Method Score	Spot-Checking Method	Spot-Checking Score
Animal Waste Management System (structural)	Compliance: state agricultural operation permits	5	Tailored-Haphazard: On-farm by trained/certified fed/state/local personnel	3

SPREADSHEET: TEST VERSION - OUTPUT

Timeframe	Current Score	Current Rating	Score Improvement Needed to Increase Rating One Level	New Rating Possible
Contract Years Only	105.4	High	21	Very High
Post-Contract Years Only	46.8	Low	30	Moderate
Physical Lifetime	78.2	Moderate	23	High

SPREADSHEET: TEST VERSION - OUTPUT

Sub-Score	Maximum Score	Actual Score	Difference
BMP Inclusion (cost-shared, non-C/S, regulatory, voluntary)	30	21	9
BMP Detection Score (Contract Years Only):	45	35	11
BMP Function Score (Contract Years Only):	45	33	13
Data Management and Reporting Score (Contract Years Only):	30	17	14
BMP Detection Score (Post-Contract Years Only):	45	11	34
BMP Function Score (Post-Contract Years Only):	45	12	34
Data Management and Reporting Score (Post-Contract Years Only):	30	2	28
BMP Detection Score (Physical Lifetime):	45	24	22
BMP Function Score (Physical Lifetime):	45	24	22
Data Management and Reporting Score (Physical Lifetime):	30	9	21

SPREADSHEET VERSION: NEXT STEPS

- Modifications needed for 1:1 with Agriculture Workgroup verification protocol matrix.
- Consider other non-point source protocols.
- User-friendly tool version needed.
- Need to simplify a complicated process.
- Simple summary report.
- Additional testing.

COMPLETION TIMELINE

- The Tool is one element of an agricultural BMP verification protocol package being developed by the Agriculture Workgroup.
- Its development and completion will be coordinated with the finalization of the verification matrix and supporting document to make them complementary.
- Completed BMP verification protocol package scheduled for late summer/fall 2013.

Questions?