# Albemarle-Pamlico National Estuary Partnership
# Terrestrial Resources Monitoring & Assessment Team

## WebEx Meeting
**10:00 – 11:30 AM**
**August 17, 2018**

**Meeting Notes by Tim Ellis**

**Team members in attendance:** Rua Mordecai (SALCC; Team Lead), David Allen (NCWRC), Mike Schafale (NCNHP), Johnny Boggs (USFS), John Taggart (UNCW-ret.)

**APNEP staff in attendance:** Dean Carpenter, Bill Crowell, Tim Ellis, Stacey Feken, Heather Jennings, Jimmy Johnson, Trish Murphey

**Agenda/Summary:**

The purpose of this meeting was to develop a course map for the remainder of 2018. The agenda included making a final review of the team's list of indicators and associated metrics to date and confirming which of these most aligned with specific team members based on their expertise and interest. A suite of indicators for near-term focus was also established.

Dean Carpenter began the meeting with a brief review of the team's last meeting and restating the distinction between Tier-I and Tier-II indicator classifications.

Rua Mordecai then led the team through a full review of the team's current list of indicators and associated metrics. Key notes from this discussion are below.

- For Ecosystem Outcome 1D
    - *Faunal Diseases and Pathogens* remains a Tier-II indicator with *chronic wasting disease* as a proposed metric and no assigned team member.
- For Ecosystem Outcome 2A
    - *Terrestrial Vegetation* remains an indicator with three Tier-I metrics. Dean confirmed that Jon Blanchard (NCDPR) will still lead *ephemeral pool communities*. As an unfulfilled action from the team's February meeting, Dean will discuss this metric with the Wetland Resources MAT at their next meeting. Johnny Boggs agreed to join Rua Mordecai and Mike Schafale as leads on the *longleaf/natural upland pine age structure/community condition* and *natural upland/mesic hardwood age structure/community condition* metrics. Rua noted that he has recently found more information to assist with assessing these metrics.
    - *Herptofauna* remains an indicator with two Tier-I metrics, *amphibian species (TBD) population condition* and *reptile species (TBD) population condition*, both led by David Allen and Rua Mordecai. David noted that he has narrowed down some

species for these metrics through discussions with WRC staff. Rua noted that he has recently looked into a habitat suitability index specifically for longleaf pine associated amphibian and reptile species.
    - *Birds* remains a Tier-I indicator with *bird communities* as a proposed metric. Wendy Stanton (USFWS), Rua Mordecai, and David Allen remain leads on this indicator.
    - *Mammals* remains an indicator with three proposed metrics. David Allen and Dean Shields (USNRCS) remain leads for the *black bear population condition* (Tier-I), *bat species (TBD) population condition* (Tier-I), and *small mammals* (Tier-II) metrics.
    - *Terrestrial Insects* remains a Tier-II indicator with *firefly species (TBD) population condition* and *pollinator species (TBD) population condition* as proposed metrics with no assigned team member. As an unfulfilled action from the team's February meeting, Dean will recruit an entomologist to join the team and determine if available data are sufficient for a Tier-I effort to assess this indicator.
    - *Arachnids* remains a Tier-II indicator with *spider species (TBD) population condition* as a proposed metric with no assigned team member.
- For Ecosystem Outcome 2B
    - *Landscape Pattern* remains an undecided indicator (Tier I or II) with three proposed metrics: *landscape connectivity index*, *landscape complexity index*, and *landscape proximity index*. John Iiames (USEPA) remains the lead on this indicator, but was not present at the meeting to provide an update.
    - *Fire Regime* remains a Tier-I indicator with *fire severity, frequency, extent, and seasonality* as a proposed metric. Rua Mordecai remains a team lead for this indicator, along with Jon Blanchard (as confirmed by Dean Carpenter).
    - *Insects, Diseases, and Parasites* remains a Tier-II indicator with *disease outbreak severity, frequency, and extent* as the proposed metric with no assigned team member.
    - *Coastal Margin* was changed from a Tier-I indicator to undecided (Tier I or II). David Allen noted that he and John Taggart had discussed via email the proposed metric of *natural coast buffer* and determined that it would be difficult to assess. Dean Carpenter indicated that Rich Whittecar (ODU) was unable to join the meeting today, but is interested in helping David and John lead on this indicator. Dean suggested that there be further discussion with Rich before listing this indicator as Tier II.
    - *Terrestrial Vegetation* remains an indicator with four Tier-I metrics. Johnny Boggs agreed to join Rua Mordecai and Mike Schafale as leads on the *maritime forest extent*, *longleaf/natural upland pine extent* and *natural upland/mesic hardwood extent* metrics. The latter two metrics were updated to be Tier I because the analyses would be done in conjunction with analyses for the corresponding metrics under Ecosystem Outcome 2A. John Iiames and Rua Mordecai remain leads on the *riparian zone* metric.
    - *Soil Condition* remains an undecided indicator (Tier I or II) with *extent of highly eroded soils* and *soil organic matter* as proposed metrics. Dean Carpenter indicated that Rich Whittecar would like to help Dean Shields and Rua Mordecai lead on this indicator. Dean Shields was not present at the meeting to provide an update.

    - *Urban/Suburban Vegetation* remains a Tier-I indicator with *tree density by air pollution mitigation class* as the proposed metric. John Iiames remains the lead on this indicator, but was not present at the meeting to provide an update.
- For Ecosystem Outcome 2C
    - *NNI Terrestrial Vegetation* remains a Tier-I indicator with *privet population status/occurrences*, *Microstegium population status/occurrences*, and *autumn olive population status/occurrences* as proposed metrics. Tim Ellis noted that there are unlikely to be any state-supported management efforts to control or eradicate kudzu because it is too well established. Kudzu was removed from the list but *other species (TBD)* was added for future discussion. John Iiames remains the lead on this indicator, but was not present at the meeting to provide an update.
    - *NNI Herptofauna* was changed from a Tier-I indicator to Tier II (or less) with *invasive amphibian species (TBD)* and *invasive reptile species (TBD)* as proposed metrics. David Allen remains lead on this indicator and listed the African clawed frog, a gecko species [missed in notes], and an anole species [missed in notes] as potential metrics, but noted that none of these non-native species are considered invasive.
    - *NNI Terrestrial Insects* remains a Tier-II indicator with *fire ants* as a proposed metric with no assigned team member. Dean Carpenter will contact an entomologist for further information.
    - *NNI Mammals* remains a Tier-I indicator with *feral hog population estimates (notable local populations)* as the proposed metric and led by David Allen.
    - *NNI Birds* was changed from an undecided indicator (Tier I or II) to a Tier I, and David Allen and Wendy Stanton remain the leads. David suggested that the proposed metric of *invasive bird species (TBD)* be specified to potentially include the *house sparrow*, the *European starling*, and the *Eurasian collared dove*.
- Indicators for Ecosystem Stressors were not discussed.
- The suite of indicators for near-term focus will include the following indicators and associated metrics:
    - *Terrestrial Vegetation* (Rua Mordecai, Mike Schafale, Johnny Boggs) using data from the NCNHP database and the USGS National Gap Analysis Program
        - *Longleaf/natural upland pine age structure/community condition*
        - *Longleaf/natural upland pine extent*
        - *Natural upland/mesic hardwood age structure/community condition*
        - *Natural upland/mesic hardwood extent*
    - *Birds* (David Allen, Wendy Stanton, Rua Mordecai)
        - *Bird communities*
        - *Invasive bird species (TBD)*
    - *Mammals* (David Allen, Dean Shields)
        - *Black bear population condition*

An updated list of indicators, which includes all edits made during this meeting, will be emailed to the team for future discussion.