Cross-walk Presentation of the Appalachian LCC 5-Year Work Plan demonstrating the alignment with other Regional or Nationally Recognized Conservation Planning Frameworks

KEY Planning Frameworks: [NE] = North East Fish and Wildlife Region (planning framework); [NRCF] = Northeast Regional Conservation Framework; [SWAP] = State Wildlife Action Plans (8-Elements); [SE] = South East Fish and Wildlife Region (SHC sub-element descriptions used in planning framework)

Work Plan Goals: (short-hand notation) *(see footnote for full Goal Descriptions[i];*

[WP]Goal 1: {Data Acquisition & Sharing}
[WP]Goal 2: {Landscape-level Planning}
[WP]Goal 3: {Engagement & Communication}
[WP]Goal 4: {Steering Committee (SC) Facilitation/Programmatic Alignment}

Work Plan – Responsibility/Roles Notation: {St=Staff; SC=Steering Committee; WG=Work Group; c=Contractor}

Work Plan Timeline: ***(when work to be initiated)***

[Underway/ Initiated]
[Short: (~18 mo)]
[Medium (Yr 2-3)]
[Long (yr 4-5)]

AppLCC 5-Year Work Plan Objective (#.#) and Task (#.#.#) & Responsibility/Role
{R/R Notation: St=Staff; SC=Steering Committee; WG=Work Group; c=Contractor}

The foundational discussions with the AppLCC Steering Committee prior to and during the development of the Work Plan – started with a review and confirmation of the LCC's stated commitment to work toward and support their stated Vision and Mission.

Vision:

Ecological Integrity. Environmental Benefits. Sustainable Wildlife Populations.

Vision Statement is the 'Why' or desired outcome -- Achieve sustainable landscape-level conservation that protects valued resources and biological diversity of the Appalachian region which sustain healthy and resilient ecosystems and provide benefits to human communities, and help natural systems adapt to large landscape-level stressors and impacts of changing climate.

Mission Statement (The 'How') -- Achieve sustainable landscape-level conservation in Appalachia through partnerships, shared resources, developing common conservation targets, enhancing science-based management capacity, integrating landscape-level planning, supporting conservation actions and research as part of a national network, and engaging traditional and non-traditional partners, and the public at-large. **Source: Appalachian LCC 5-Year Work Plan (draft approved Oct 2012_revisions Dec)**

The Tasks outlined in the5 Year Work Plan align with both the FWS SHC framework and the Northeast Regional Conservation Framework as presented below.

I. Biological Planning
A. Biological Planning Units
B. Priority Species
C. Population Objectives
D. Limiting Factors
E. Species/Habitat Models

II. Conservation Design
F. Landscape/Habitat Assessment
G. Assessment of Conservation Estate
H. Decision Support Tools
I. Conservation Objectives
J. Integrate Multiple Species Objectives

III. Delivery / Conservation Actions
K. Program Objectives
L. Conservation Delivery Mechanisms
M. Communication and Education Delivery Mechanisms

IV. Outcome-based Monitoring / Analysis
N. Conservation Tracking System
O. Habitat Inventory and Monitoring Program
P. Population Monitoring Program

V. Assumption-driven Research
Q. Species/Habitat Model Assumptions
R. Conservation Treatment Assumptions
S. Key factor /Sensitivity Analyses
T. Spatial Data Analyses

SHC Element:	
I. Biological Planning	**AppLCC 5-Year Work Plan Objective (#.#) and Task (#.#.#) & Responsibility/Role** {R/R Notation: St=Staff; SC=Steering Committee; WG=Work Group; c=Contractor}
A. Biological Planning Units	
[NE] "Select Priority Subset" [NRCF] PRIORITIES *Which species demand immediate attention?* [SWAP[ii]] Element 1: Species status assessment [SE] Identify and describe any subunits and their biological/ecological relevance. Describe processes for coordinating with other LCCs for priority species that transcend LCC boundary.	**[WP]Goal 2: {Landscape-level Planning}** 2.7 Facilitate the use of natural resource indicators and surrogate species to inform landscape-level planning, identify and establish data needs and monitoring design that reflect management objectives and conservation targets. • **[Underway/ Initiated]** 2.7.1 Ensure adequate representation of the AppLCC expertise in relevant US Fish and Wildlife Service Regional [surrogate species] workshops and events. (St, SC) **[WP]Goal 4: Goal 4: {SC Facilitation/Programmatic Alignment}** 4.9 Establish ongoing process for dialogue, engagement, and alignment with regional planning entities • **[Short: (~18 mo)]** 4.9.1 Through active engagement and participation in National fora, to monitor and align the work and decisions of the AppLCC with National strategy being created for connecting to regional land and water planning entities. (ongoing) (SC)

B. Priority Species	
[NE] "Identify Priority Species" [NRCF] PRIORITIES *Which species demand immediate attention?* [SWAP] Element 1: Species status assessment [SE] Develop a list of priority species/populations from existing plans (e.g., State Wildlife Action Plans, Recovery Plans) or ongoing/planned assessments (e.g., climate change vulnerability assessment). Select a subset of species/populations to represent the full suite of priority species for which the LCC will engage in biological planning and conservation design. Document process and assumptions in identification of priority species/populations and selection of subsets.	**[WP]Goal 1: {Data Acquisition & Sharing}** 1.4 Synthesize regional information to support State Wildlife Action Plans (SWAPs) and other partner action plans • **[Short: (~18 mo)]** 1.4.1 Create inventory, summarize, and maintain key information from all relevant SWAPs, AppLCC Regional initiatives, resource management plans, and partnership efforts. (ongoing) (St, WG, c) **[WP]Goal 2: {Landscape-level Planning}** 2.5 Establish a structured decision-making process for the ongoing integration of existing partner plans to deliver landscape-level conservation planning • **[Short: (~18 mo)]** 2.5.2 Identify all key, relevant representatives (individuals and organizations) of regional community of practice, and actively engage and solicit participation in identifying common species/habitat priorities /shared values. (SC w/St) 2.7 Facilitate the use of natural resource indicators and surrogate species to inform landscape-level planning, identify and establish data needs and monitoring design that reflect management objectives and conservation targets. • **[Short: (~18 mo)]** 2.7.2 Assemble or develop and adopt agreed upon vegetation of habitat classification systems and geospatially recognize areas of rare or unique ecosystems. (WG=COP w/St, c) • **[Short: (~18 mo)]** 2.7.3 Assemble or develop and adopt agreed upon species classification and distribution data and geospatially recognize areas of rare and endemic species and unique habitats.(WG=COP w/St, c)
C. Population Objectives	
[NE] "Formulate Population Objectives" [NRCF] BIOLOGICAL ASSESSMENT *What do we know about the status of priority wildlife?* [SWAP] Element 1: Species status assessment	*NOTE: 1ST ADDRESSING NEED FOR / ACCESS TO DATA ISSUE HERE* **[WP]Goal 1: {Data Acquisition & Sharing}** 1.1 Conduct AppLCC data needs assessment • **[Underway/ Initiated]** 1.1.1 Assess the applicability of the neighboring LCC contract and survey instruments, as a model for identifying AppLCC data needs. (St) • **[Underway/ Initiated]** 1.1.2 Canvass and assess applicability of other LCCs efforts to identify data needs. (St)

[SE] Develop explicit population objectives linked across scales (i.e., regional objectives meaningfully tied to national goals). Where appropriate, population objectives should account for environmental variability. Transparent, defensible and replicable process for deriving population objectives well-documented with key uncertainties explicitly identified.	• [Short: (~18 mo)] 1.1.3 Assess the scope of work required to generate a data needs assessment project (internal vs. contract) and make recommendation to Steering Committee (WG, c) • [Short: (~18 mo)] 1.1.4 Develop and define common language, standards and protocols (with consideration of National LCC Network efforts/integrate National LCC Data Mgmt Group Recommendations while further defining AppLCC data collection protocols and management). (St – w/National LCC, WG) • [Short: (~18 mo)] 1.1.5 Identify and analyze available data sets, methodologies and approaches relative to AppLCC landscape conservation planning. (ongoing) (St, WG, c) • [Short: (~18 mo)] 1.1.6 Create a "crosswalk'" report to validate identified science and data needs with member organizational priorities and AppLCC science needs portfolio. (St, WG, c) • [Short: (~18 mo)] 1.1.7 Develop scope of work needed to address or complete a data needs assessment and initiate/fund needed work. (St, WG, c) • 1.1.8 [Medium (Yr 2-3)] Complete data needs assessment for Steering Committee review. (St, WG, c) • 1.1.9 [Medium (Yr 2-3)] Formalize a strategy and timeline to address gaps based on data needs assessment. Actions to address needs will be added to relevant Goal/Objective. (SC) 1.2 Identify and "craft" a way forward to overcome concerns about data sharing • [Short: (~18 mo)] 1.2.1 Engage in National LCC data needs discussions/approaches to sharing data and report on how to integrate findings. [EDITOR ADDITION: In an effort to coordinate and streamline data sharing, data management, and project tracking, a national data management LCC workgroup has been formed. This working group has produced a constitution and best management practices document, which will be open to review by all LCC coordinators and science coordinators in early October and will continue working towards a nation-wide data management framework.] (St, WG) • [Short: (~18 mo)] 1.2.2 Assemble each ISC member

	organizations' existing data protocols, data sharing contracts/agreements, and data sensitivity issues (see 1.2.4). (SC w/St, c) • [Short: (~18 mo)] 1.2.3 Develop model agreements for data sharing. (St, WG, c) • [Short: (~18 mo)] 1.2.4 Develop a concise and transparent data sharing policy (defining "Whys" and "Hows" of data sharing) and submit to full Steering Committee for approval and adoption. (SC, WG) 1.6 Develop a management process for seamless data integration and more efficient and effective sharing of tools and data sets • 1.6.2 [Medium (Yr 2-3)] Develop comprehensive, long-term design for: (a) ongoing cost of data; (b) data capacity; (c) data and software maintenance; and (d) data warehousing technical support. (St, WG, c)
	[WP] Goal 2: {Landscape-level Planning} 2.7 Facilitate the use of natural resource indicators and surrogate species to inform landscape-level planning, identify and establish data needs and monitoring design that reflect management objectives and conservation targets. • 2.7.4 [Medium (Yr 2-3)] Identify appropriate natural resource indicators and candidate taxa or surrogate species, and develop explicit population objectives or natural resource appropriate targets. (St, WG, c)
D. Limiting Factors	
[NE] "Identify Limiting Factors" [NRCF] BIOLOGICAL ASSESSMENT *What do we know about the status of priority wildlife?* [SWAP] Element 1: Species status assessment [SE] Generate list of factors considered most limiting to specific species and populations. Describe how factors influence demographic parameters (e.g., abundance, survival rate, recruitment rate) and how they inform and target	**[WP] Goal 2: {Landscape-level Planning}** 2.4 Based on articulated conservation targets and objectives, identify and assess potential impacts of land use change on known or projected movement/migration corridors • 2.4.1 [Medium (Yr 2-3)] Identify potential movement/migration corridors at appropriate level/unit (i.e. functional group, species /population /genetic level, given relevant geophysical variation, behavioral response etc.) (c w/St) 2.7 Facilitate the use of natural resource indicators and surrogate species to inform landscape-level planning, identify and establish data needs and monitoring design that reflect management objectives and conservation

conservation actions (e.g., habitat management).	targets. • 2.7.5 **[Medium (Yr 2-3)]** Identify factors believed to be the most limiting to specific (surrogate species or targets) and identify monitoring efforts to track changes in these factors and response, (WG=COP w/St, c)
E. Species/Habitat Models	
[NE] "Compile and Apply Models Describing Population-Habitat Relationships" [NRCF] BIOLOGICAL ASSESSMENT *What do we know about the status of priority wildlife?* [SWAP] Element 1: Species status assessment [SE] Develop species-habitat models that quantify population response to limiting factors. Document assumptions as testable hypotheses.	**[WP] Goal 2: {Landscape-level Planning}** 2.7 Facilitate the use of natural resource indicators and surrogate species to inform landscape-level planning, identify and establish data needs and monitoring design that reflect management objectives and conservation targets. • 2.7.6 **[Medium (Yr 2-3)]** Develop species-habitat models to fully operationalize the integration of natural resource indicators and use of surrogate species measures across the AppLCC landscape-level planning, monitoring, and assessment (WG=COP w/St, c)

SHC Element:	
II Conservation Design	**AppLCC 5-Year Work Plan Objective (#.#) and Task (#.#.#) & Responsibility/Role** {R/R Notation: St=Staff; SC=Steering Committee; WG=Work Group; c=Contractor}
F. Landscape/Habitat Assessment	
[NE] (included in) "Identify Program Priority Area" [NRCF] CONSERVATION DESIGN *What should landscapes look like to conserve all species at levels that society wants?* [SWAP] Element 2: Habitat status assessment [SE] Conduct rigorous analyses of current landscape/habitat carrying capacity based on explicit species-habitat models. Where possible, conduct retrospective analysis of carrying capacity during period of desired population levels. Predict impacts of multiple stressors (e.g., urban growth, climate change, public policies) individually and in concert on carrying capacity. Forecast expected carrying capacity with and without the Cooperative's intervention.	**[WP] Goal 2: {Landscape-level Planning}** 2.1 Conduct an overall threat assessment • [Short: (~18 mo)] 2.1.2 **[Energy funded in FY11]** 2.1.2 Medium (Yr 2-3)] Initiate threats assessment by impact [energy, urbanization and infrastructure, and climate change, etc.] that will be required to be combined and integrated to generate an overall threats assessment (ongoing) (WG, c) • 2.1.3 [Medium (Yr 2-3)] Conduct an overall threats assessment that integrates all relevant impacts and projected changes over time. (c) 2.2 Identify requirements to address the human dimensions components of land-use change, including preservation of cultural resources • 2.2.2 [Long (yr 4-5)] Identify and integrate relevant cultural resource GIS Standards/Guidelines, (e.g.: GRGIS at National Parks Service; State recreational and Federal recreational plans; Economic development; Urbanization), along with other Land and Water Conservation Funds/Farm Bill opportunities as appropriate into landscape plans. (ongoing) (WG, c) 2.5 Establish a structured decision-making process for

	the ongoing integration of existing partner plans to deliver landscape-level conservation planning • [Short: (~18 mo)] 2.5.3 Review and synthesize key information from existing conservation, land and resource management plans. (St, WG, c) 2.6 Based on the underpinnings of resiliency, identify the management approaches to achieve, restore or enhance system integrity, function, and reflect the conservation prioritization and relative ranking of the systems • 2.6.2 [Medium (Yr 2-3)] Identify the components, functions and relationships that define resiliency and management approaches to achieve restore, or enhance system function. (c)
G. Assessment of Conservation Estate	
[NE] (included in) "Identify Program Areas" [NRCF] CONSERVATION DESIGN *What should landscapes look like to conserve all species at levels that society wants?* [SWAP] Element 2: Habitat status assessment [SE] Conduct comprehensive analysis throughout the biological planning unit of existing habitat under protection, management, enhancement, or restoration that supports priority species. Information appropriately delineated (e.g., by ownership, state, etc.) to inform management. Assessment of net change in the conservation landscape conducted at ~5 year intervals.	**[WP] Goal 2: {Landscape-level Planning}** 2.9 Provide guidance on how much habitat is necessary for sustainable/resilient (healthy ecosystem) outcomes • 2.9.2 [Long (yr 4-5)] Develop tools and models to identify strategic opportunities (including integration of private lands into the broader conservation matrix). (WG w/St, c)
H. Decision Support Tools	
[NE] "Combine Appropriate Species Decision Support Tools" [NRCF] SCIENCE TRANSLATION TOOLS *How do we make science solutions useful?* [SWAP] Element 3:	**[WP] Goal 1: {Data Acquisition & Sharing}** 1.3 Provide science information, tools, and data support to the existing habitat partnerships and joint ventures • [Short: (~18 mo)] 1.3.3 Create effective and ongoing linkages and introduction of new learning, knowledge and tools between LCCs and other large landscape efforts. (ongoing) (St)

Evaluate problems & solutions [SE] Develop both non-spatial and spatially-explicit decision support tools to guide and target specific management actions for overcoming limiting factors. Document analytical processes and model assumptions. Define strategy for distributing tools and soliciting feedback from appropriate agencies and organizations.	1.5 Actively maintain close working relationships with the DOI Climate Science Centers ensuring on-going communication and research support toward addressing the science needs identified by the AppLCC Members and community • [Short: (~18 mo)] 1.5.2 Facilitate the exchange and distribution of research products to help inform the direction of landscape-level and regional initiatives (e.g., through electronic media, jointly-sponsored proposals, workshops, etc.) ensuring planning dialogue of the Cooperative Members, while supporting associated technical and scientific communities. (ongoing) (St) • [Short: (~18 mo)] 1.5.3 Coordinating with the National LCC Network and the DOI National Climate Science Centers to facilitate the exchange and distribution of research products to find and develop the best tools for AppLCC needs. (ongoing) (St) 1.6 Develop a management process for seamless data integration and more efficient and effective sharing of tools and data sets • [Short: (~18 mo)] 1.6.1 Maintain alignment between AppLCC and National LCC data and tool sharing practices and policies (reference also 1.2.1). (ongoing) (St) 1.7 Develop and deliver landscape-level, scalable planning tools • [Short: (~18 mo)] 1.7.1 Assemble common set of spatially explicit data layers based on LCC-consistent standards and definitions. (ongoing) (St, WG, c) • 1.7.4 [Long (yr 4-5)] Further refinement (1.7.3) by documenting “best practices” and “lessons learned” for data delivery which are consistent with LCC standards and definitions (e.g., data format, metadata etc.) (St, WG, c)
	[WP] Goal 2: {Landscape-level Planning}
	2.3 Identify promising opportunities to safeguard, the "*best of the best*" fish and wildlife habitat and plant communities or ecosystems • 2.3.2 [Long (yr 4-5)] Develop a “dashboard decision support tool” that portrays these “best of the best”

	areas and opportunities to help Members maximize their conservation and resource investments. (WG, c, w/ St) 2.8 Project future landscape conditions, cumulatively/over time, based on best available science/scenarios, indicating probable patterns and changes • 2.8.4 [Medium (Yr 2-3)] Identify landscape-level models and articulate potential scenarios. (WG see 2.8.3)
I. Conservation Objectives	
[NE] "Formulate Habitat Objectives" [NRCF] CONSERVATION DESIGN *What should landscapes look like to conserve all species at levels that society wants?* [SWAP] Element 3: Evaluate problems & solutions [SE] Develop conservation (e.g., habitat) objectives explicitly linked to population objectives based on population-habitat models, carrying capacity, assessment of conservation estate, and decision support tools, as available. Partition habitat objectives among sources (e.g., ownership, state, habitat types), where appropriate.	**[WP] Goal 2: {Landscape-level Planning}** 2.3 Identify promising opportunities to safeguard, the "*best of the best*" fish and wildlife habitat and plant communities or ecosystems • 2.3.1 [Medium (Yr 2-3)] Identify current or promising management investment opportunities that reflect conservation of the "best of the best" resilient habitat for fish, wildlife and plant communities, including opportunities to contribute to cultural preservation priorities and to reinforce the conservation of other social resources. (St, WG=COPs, c) 2.6 Based on the underpinnings of resiliency, identify the management approaches to achieve, restore or enhance system integrity, function, and reflect the conservation prioritization and relative ranking of the systems • 2.6.3 [Medium (Yr 2-3)] Identify and rank the core areas, components and interrelationships that help and reinforce resilience. Continuously refine the details and status describing those areas based on threats and opportunities to help facilitate coordination and planning prioritization. (ongoing) (WG=COP w/St) 2.9 Provide guidance on how much habitat is necessary for sustainable/resilient (healthy ecosystem) outcomes • 2.9.1 [Long (yr 4-5)] Define and offer recommendations on what type and how much habitat is necessary for sustainable/resilient (healthy) outcomes and to achieve conservation targets. (WG w/St)

J. Integrate Multiple Species Objectives	
[NE] "Combine Appropriate Species Decision Support Tools" [NRCF] SCIENCE TRANSLATION TOOLS *How do we make science solutions useful?* [SWAP] Element 3: Evaluate problems & solutions [SE] Use Structured Decision Making processes to develop tools and methods for spatially and temporally integrating habitat objectives and management options for all priority species/populations across the biological planning unit. Describe decision-rules for conflict resolution given the extent of spatial/temporal overlap in conservation activities among species.	**[WP] Goal 2: {Landscape-level Planning}** 2.5 Establish a structured decision-making process for the ongoing integration of existing partner plans to deliver landscape-level conservation planning • **[Short: (~18 mo)]** 2.5.1 Determine which of the currently recognized structured decision/scenario planning/strategic prioritization process to be used and engage expertise as required. (St) • 2.5.4 **[Medium (Yr 2-3)]** Charge Work Group with crafting the framework and identifying the priority elements to be included in the integrated plans generated under 2.5.1 [SDM/Scenario Planning], and review of products. (WG w/ St) • 2.5.5 **[Medium (Yr 2-3)]** Oversee an ongoing structured decision process that provides ongoing planning integration recommendations to the Steering Committee for use in conservation planning actions and for development of dashboard tools. (WG w/St) 2.6 Based on the underpinnings of resiliency, identify the management approaches to achieve, restore or enhance system integrity, function, and reflect the conservation prioritization and relative ranking of the systems • 2.6.1 **[Medium (Yr 2-3)]** Establish and oversee an ongoing structured process that provides the Steering Committee recommendations for: (a) Utilizing existing data to rank conservation targets, and (b) Identifying data gaps and providing priority recommendations for closing. (ongoing) (WG=COP w/St) **[WP] Goal 4: Goal 4: {SC Facilitation/Programmatic Alignment}** 4.4 Assist, support, and utilize State Wildlife Action Plans (SWAPs) and other planning documents to assist with landscape-level integration • **[Short: (~18 mo)]** 4.4.1 Appoint a Work Group, drawn from the ISC Members, to identify relevant information and opportunities to integrate information from the State Wildlife Action Plans (SWAPs) and other planning document into landscape-level plans, models, and efforts to set conservation targets. [The work of the Work Group

	may be informed by the guidance provided in "SWAP Best Practices" produced by AFWA.] (ongoing) (SC-WG w/St) 4.10 Steering Committee Members provide leadership and guidance to the broader Cooperative and Members to proactively engage communities of practice • [Short: (~18 mo)] 4.10.1 Establish a Work Group to identify and encourage organizational representation and engagement of subject-matter experts (communities of practice) to participate in and assume membership-specific actions/tasks. (ongoing) (SC w/St) • [Short: (~18 mo)] 4.10.2 Provide ongoing support for, and guidance in coordinating efforts to consider key science and issues and initiatives assigned to communities of practice. (ongoing) (SC w/St)
	[WP] Goal 3: {Engagement & Communication}
	3.2 Define strategies to engage regional land development, water delivery, roads and energy sector representatives • 3.2.4 [Medium (Yr 2-3)] Define how broad and deep our reach needs to be (e.g., engaging county/municipal government and other civil society organizations) (SC w/St)

SHC Element:	
III. Delivery / Conservation Actions	**AppLCC 5-Year Work Plan Objective (#.#) and Task (#.#.#) & Responsibility/Role** {R/R Notation: St=Staff; SC=Steering Committee; WG=Work Group; c=Contractor}
K. Program Objectives	
[NE] (included in) "Conservation Delivery" [NRCF] CONSERVATION DELIVERY *How will we most efficiently put conservation on the ground?* [SWAP] Element 4: Prescribe actions [SWAP] Element 4: Prioritize actions [SE] Translate habitat objectives into spatially-explicit, program-specific objectives (e.g., North American Wetlands Conservation Act, Conservation Reserve Program, Wetland Reserve Program, National Wildlife Refuge System, Wildlife Management Area System, etc.). If appropriate, develop ranking systems to inform prioritization and decision-making based on landscape-scale assessments.	**[WP] Goal 1: {Data Acquisition & Sharing}** 1.3 Provide science information, tools, and data support to the existing habitat partnerships and joint ventures • *[This is about establishing the IPT/Advisory Team ~ The CP Business Model]* • [Short: (~18 mo)] 1.3.1 Identify, and annually review, the most immediate science needs to receive support. (ongoing) (St w/ WG=COPs) *[[see also R]]* • [Short: (~18 mo)] 1.3.2 Deliver findings and products (see 1.3.1) to the conservation and land use community. (ongoing) (St, c) • [Short: (~18 mo)] 1.3.4 Facilitate creation of new COPs, and develop and sustain ongoing dialogue, learning, and engagement between and among all COPs to share information with the broader AppLCC community. (ongoing) (St w/ WG=COPs) • 1.3.5 [Medium (Yr 2-3)] Establish and support the ongoing work of experts (Integrated Landscape Planning Team) to assess landscape level science and planning needs. (ongoing) (St w/ WG) 1.4 Synthesize regional information to support State Wildlife Action Plans (SWAPs) and other partner action plans • [Short: (~18 mo)] 1.4.2 Report as a "cross-walk" analysis

	that identifies opportunities to better integrate Regional perspectives, the regional ranking/priorities within each State, and connect to AppLCC Region-wide ranking to help inform planning efforts. (Ranking is based on spatial and temporal land-use and climate change factors.) (ongoing) (St, WG, c) 1.5 Actively maintain close working relationships with the DOI Climate Science Centers ensuring on-going communication and research support toward addressing the science needs identified by the AppLCC Members and community • [Short: (~18 mo)] 1.5.4 Participate in other national forums to establish national investments and product strategies. (ongoing) (St, SC)
	[WP] Goal 2: {Landscape-level Planning}
	2.2 Identify requirements to address the human dimensions components of land-use change, including preservation of cultural resources • 2.2.1 [Medium (Yr 2-3)] Identify relevant information to portray the human dimensions (cultural and social resources) in landscape-level planning. (c) 2.8 Project future landscape conditions, cumulatively/over time, based on best available science/scenarios, indicating probable patterns and changes • 2.8.3 [Medium (Yr 2-3)] Charter a Work Group ("Integrated Planning Team)" of experts to serve as a standing Advisory Team to support the work of Staff and facilitation of consultation and integration of assessments and recommendations from the various COP. (ongoing) (St, SC)
	[WP] Goal 4: Goal 4: {SC Facilitation/Programmatic Alignment}
	4.1 Ensure LCC planning products are coordinated in consideration of Member goals • [Short: (~18 mo)] 4.1.1 Prepare and update the information that reflects the conservation recommendations derived from Goal 1 [Data] & Goal 2 [Landscape Planning] for prioritization by Steering Committee approval. (ongoing) (SC w/St) • [Short: (~18 mo)] 4.1.2 Provide a strategic assessment that

	both identifies gaps in existing ISC Member goals and actions, and offers the greatest potential return on AppLCC investment. (ongoing) (SC w/St) 4.3 Be THE FORUM which integrates science and management to achieve landscape-level planning and coordinated conservation delivery • 4.3.1 [Medium (Yr 2-3)] Facilitate development of landscape-level planning guidelines. (SC w/St) • 4.3.2 [Medium (Yr 2-3)] Integrate and coordinate with other landscape planning entities or initiatives. (WG=see 2.8.3, w/St) 4.5 Proactively identify threats and develop policies/strategies to get ahead of them • [Short: (~18 mo)] 4.5.1 Carryout ongoing review and refinement of conservation targets and objectives. (ongoing) (SC w/St) 4.6 Align existing Member conservation investments to maximize AppLCC impact • [Short: (~18 mo)] 4.6.1 Assess ways to more fully align conservation efforts via shared human and other resource capacities contributing toward identified AppLCC priorities and make recommendations to the full Steering Committee.(ongoing) (WG w/St) • [Short: (~18 mo)] 4.6.2 Review recommendations (4.6.1) and take appropriate actions. (ongoing) (SC) 4.7 Design the mechanism to improve LCC specific inreach communication to member agencies and organizations • [Short: (~18 mo)] 4.7.2 Identify and integrate an ongoing process to help integrate the Steering Committee insights and reflection on organizational commitments to refine the "Who/What/Why" of AppLCC and effectively communicating what we are about. (SC, c) 4.8 Sustain and enhance AppLCC and Member organization conservation funding • [Short: (~18 mo)] 4.8.1 Establish an annual review of AppLCC ISC Member- and related Partner-funding support for Steering Committee consideration. (ongoing) (SC w/St)

	• [Short: (~18 mo)] 4.8.2 Establish a Finance Committee to monitor, review and make recommendations to the Steering Committee and Members regarding funding for AppLCC and AppLCC Member initiatives. (SC w/St) • 4.8.3 [Medium (Yr 2-3)] Establish a fiscal funding mechanism to allow AppLCC (as a partnership organization) to apply for, and to manage, grants and funds support from outside Federal sources (St, SC) 4.9 Establish ongoing process for dialogue, engagement, and alignment with regional planning entities • 4.9.2 [Medium (Yr 2-3)] Identify and, through the work and decisions of the ISC, actively seek opportunities to align and engage regional water, energy and land use planning entities. (ongoing) (SC)
L. Conservation Delivery Mechanisms	
[NE] (included in) "Conservation Delivery" [NRCF] SCIENCE TRANSLATION TOOLS *How do we make science solutions useful?* [SWAP] Element 4: Prescribe actions [SE] Catalog conservation delivery actions, tools, and management treatments applicable to conservation of priority species within biological planning unit, both by members of Cooperative as well as other organizations and programs. Describe how each specific conservation actions is anticipated to affect priority species abundance and/or vital rates.	**[WP] Goal 1: {Data Acquisition & Sharing}** / 1.5 Actively maintain close working relationships with the DOI Climate Science Centers ensuring on-going communication and research support toward addressing the science needs identified by the AppLCC Members and community • 1.5.6 [Medium (Yr 2-3)] Coordinate with key research units and local universities to facilitate the exchange and distribution of research products to find and develop the best tools for AppLCC needs. (St) **[WP] Goal 2: {Landscape-level Planning}** 2.8 Project future landscape conditions, cumulatively/over time, based on best available science/scenarios, indicating probable patterns and changes • [Short: (~18 mo)] 2.8.1 Consult with end-users/resource managers to determine what predictive tools are needed to support their work (St, WG, c) • 2.8.2 [Medium (Yr 2-3)] Assess currently available predictive tools to determine if they meet needs identified under 2.8.1 [managers needs], and evaluate tool functions, model assumptions, etc for applicability to AppLCC needs (St, WG, c)

M. Communication and Education Delivery Mechanisms	
[NE] (included in) "Conservation Delivery" [NRCF] CONSERVATION ADOPTION *How do we get communities and landowners engaged in conservation?* [SWAP] Element s 7&8: Coordinate implementation [SE] Develop interactive communications strategy focused on employees, partners, and other audiences as appropriate to raise awareness about these broad-based science partnerships in the context of priorities including our community's response to accelerating climate change, and engage members of the conservation community. Such a strategy would help us bolster a web presence, build broader communications partnerships and aggressively support priority conservation work.	**[WP] Goal 4: Goal 4: {SC Facilitation/Programmatic Alignment}** 4.2 Manage Cooperative Membership • **[Short: (~18 mo)]** 4.2.1 Identify strategic linkages and opportunities for Steering Committee representation or engagement. (SC w/St, c) • 4.2.2 **[Medium (Yr 2-3)]** Define an engagement strategy for each identified opportunity that includes recruitment, expectations, and a formal agreement of cooperation for use with identified entities. (SC w/St, c) • 4.2.3 **[Medium (Yr 2-3)]** Determine most effective means and most appropriate individuals for implementing the (4.2.2) strategy. (SC) 4.3 Be THE FORUM which integrates science and management to achieve landscape-level planning and coordinated conservation delivery • 4.3.3 **[Medium (Yr 2-3)]** Develop and implement a targeted communications campaign that conveys brand awareness of AppLCC as the focal point for Appalachian landscape conservation. (SC w/St) 4.5 Proactively identify threats and develop policies/strategies to get ahead of them • 4.5.2 **[Medium (Yr 2-3)]** Establish and conduct ongoing threats assessment briefings/communications for Steering Committee Members and key partners to develop proactive AppLCC organizational policies and strategies. (ongoing) (St, WG=COP) 4.7 Design the mechanism to improve LCC specific inreach communication to member agencies and organizations • **[Short: (~18 mo)]** 4.7.1 Design specific communication strategy, processes, and tools for improving internal communication within Member organizations. (WG, c) • 4.7.3 **[Medium (Yr 2-3)]** Develop concise messaging on Steering Committee identified topics for Member's use with their legislators and key constituents. (SC, c) • 4.7.4 **[Medium (Yr 2-3)]** Design meetings, events, and virtual opportunities that ensure ongoing

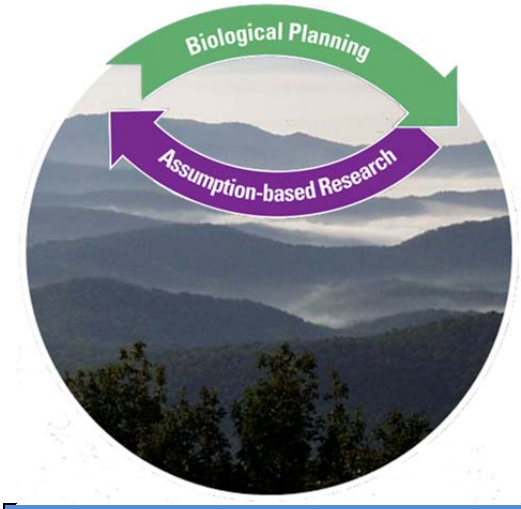
	opportunities for Steering Committee Member sharing and dialogue. (ongoing) (SC w/St)
	[WP] Goal 3: {Engagement & Communication}
	3.1 Create ongoing opportunities for dialogue and enhance capacity for sharing among Cooperative Members • [Short: (~18 mo)] 3.1.1 Assemble a glossary of terms to ensure a consistent use of terminology in all internal and external communications. (St) • [Short: (~18 mo)] 3.1.2 Maintain a list of communication staff/point-of-contact across the AppLCC area, and engage POC to enable conversations with Member organizations and partners about ongoing efforts (e.g., professional society meetings, organizational communication and public affairs officers and other communities of practice (St, SC) • 3.1.3 [Medium (Yr 2-3)] Pursue grants/funding opportunities to support the development and integration of a new, web-based communication media: On-line 'brown bag' panel discussion and real-time digital dialog [elements of this new model come from earlier platforms, e.g., Yale 360, Cambridge Nights, TED talks, etc.] (St, SC) 3.2 Define strategies to engage regional land development, water delivery, roads and energy sector representatives • [Short: (~18 mo)] 3.2.1 Identify, prioritize, and leverage existing opportunities to address these communities of practices at ongoing meetings and events. (SC w/St) • 3.2.2 [Medium (Yr 2-3)] Identify, prioritize, and leverage opportunities to communicate to their constituencies and plug into their existing communications channels. (SC w/St) • 3.2.3 [Medium (Yr 2-3)] Develop and communicate messages to these communities of practice about how their existing efforts fit with the work of the LCC (and National Network) and how integral their work is in contributing to the conservation matrix. (ongoing) (St, SC) 3.3 Serve as the focal point for dissemination of regional

	information • [Short: (~18 mo)] 3.3.1 Host an Annual Stakeholder Meeting as a listening and feedback session to reach/access the Steering Committee. (ongoing) (SC w/St) 3.4 Communicate the human dimension benefits of landscape conservation in terms relative to human dimensions and values • [Short: (~18 mo)] 3.4.1 Conduct a survey to identify key audiences and develop messages of concern to those groups (e.g., specific messages related to jobs, health, clean water, ecosystem services and cultural components, etc.) (WG w/St, c) • 3.4.2 [Medium (Yr 2-3)] Communicate the impacts of major land use changes due to energy extraction, urban sprawl, and climate change. (ongoing) (WG, c) • 3.4.3 [Medium (Yr 2-3)] Utilizing appropriate social science tools and surveys, determine attitudes/values of target audiences and the most effective means to communicate with and engage those groups. (St, WG, c)

SHC Element:	
IV. Outcome-based Monitoring / Analysis	**AppLCC 5-Year Work Plan Objective (#.#) and Task (#.#.#) & Responsibility/Role** {R/R Notation: St=Staff; SC=Steering Committee; WG=Work Group; c=Contractor}
N. Conservation Tracking System	
[NE] (included in) "Monitor Effects of Management Actions on Populations" [NRCF] INFORMATION MANAGEMENT *How will we manage the demand for and creation of data?* [SWAP] Element 5: Monitor species, habitats, outcome of actions [SE] Ensure conservation tracking and spatial database systems are in place and being used to store and integrate habitat actions occurring on the landscape. Describe how information will be used to inform decisions (e.g., increasing performance for Program X). Clarify linkages between tracking systems and biological models to facilitate assessment and reporting of biological accomplishments.	**[WP] Goal 2: {Landscape-level Planning}** 2.8 Project future landscape conditions, cumulatively/over time, based on best available science/scenarios, indicating probable patterns and changes • 2.8.5 **[Medium (Yr 2-3)]** Deliver freely accessible (open source) data outputs and products that will feed to desktop decision-support tool (e.g. focus on landscape level habitat/species mitigation opportunities). (St, WG, c)

O. Habitat Inventory and Monitoring Program	
[NE] (included in) "Monitor Effects of Management Actions on Populations" [NRCF] MONITORING, EVALUATION, RESEARCH *What new information will we gather to support conservation?* [SWAP] Element 5: Manage data to:-detect changes // -assess effectiveness // -adapt management [SE] Identify clear objectives and develop appropriate protocols for habitat monitoring programs that are linked to biological planning and conservation design. Define habitat parameters to be estimated and anticipated duration of monitoring program. Detail procedures (e.g., remote sensing, field biologists) and time interval for data collection and assessments. Characterize how data will inform decisions (e.g., establishing appropriate management intervals). Provide analytical support and develop desktop tools for land managers collecting data. *(editor: see H (above) Note distinction = "analytical support" … here)* Assess program performance.	**[WP] Goal 1: {Data Acquisition & Sharing}** 1.5 Actively maintain close working relationships with the DOI Climate Science Centers ensuring on-going communication and research support toward addressing the science needs identified by the AppLCC Members and community • **[Short: (~18 mo)]** 1.5.5 Facilitate efforts to identify, and address long-term regional monitoring data sets that would also feed into the Science Centers efforts. (ongoing) (St, SC) 1.7 Develop and deliver landscape-level (scalable) planning tools • 1.7.2 **[Medium (Yr 2-3)]** Identify specific needs for more effective and/or standard monitoring techniques /protocols across a large spatial scale (given the topography and endemism of the AppLCC landscapes). (St, WG, c)
P. Population Monitoring Program	
[NE] (included in) "Monitor Effects of Management Actions on Populations" [NRCF] MONITORING, EVALUATION, RESEARCH *What new information will we gather to support conservation?* [SWAP] Element 5:	**[WP] Goal 2: {Landscape-level Planning}** 2.7 Facilitate the use of natural resource indicators and surrogate species to inform landscape-level planning, identify and establish data needs and monitoring design that reflect management objectives and conservation targets. • 2.7.7 **[Long (yr 4-5)]** Further refine selection of indicators, species, and targets as needed. (St, WG=COP, c)

Monitor species, habitats, outcome of actions [SE] Identify demographic parameters to be monitored based on explicit population objectives. Define expected process (e.g., aerial surveys, nest monitoring), protocols, and time interval for data collection, storage, and management. Describe how information collected from monitoring programs will inform future planning decisions (e.g., refine population objectives). Assess population response relative to modeled predictions.	



SHC Element:	
V. Assumption-driven Research	**AppLCC 5-Year Work Plan Objective (#.#) and Task (#.#.#) & Responsibility/Role** {R/R Notation: St=Staff; SC=Steering Committee; WG=Work Group; c=Contractor}
Q. Species/Habitat Model Assumptions	
[NE] "Feedback Loop: Assess Net Progress Toward Population Objectives" [NRCF] *{Feedback loop}* PRIORITIES *Which species demand immediate attention?* [SWAP] N/A [SE] Identify and prioritize (based on value of better information) targeted research that addresses key uncertainties within models used in biological planning and conservation design.	**[WP] Goal 1: {Data Acquisition & Sharing}** 1.6 Develop a management process for seamless data integration and more efficient and effective sharing of tools and data sets • 1.6.3 **[Long (yr 4-5)]** Operationally integrate standards and protocols into all data-driven tools and protocols that ensure interoperability of models (data outputs) and predictions between communities of modelers at appropriate levels. (St, WG) **[WP] Goal 2: {Landscape-level Planning}** 2.8 Project future landscape conditions, cumulatively/over time, based on best available science/scenarios, indicating probable patterns and changes • 2.8.6 **[Medium (Yr 2-3)]** Assess data gaps and define an ongoing "futuring" process to fill knowledge gaps, monitor emerging trends, and adapt existing efforts. (ongoing) (St, WG, c)

R. Conservation Treatment Assumptions	
[NE] "Feedback Loop: Evaluate Program Accomplishments" [NRCF] *{Feedback loop}* BIOLOGICAL ASSESSMENT *What do we know about the status of priority wildlife?* [SWAP] N/A [SE] Identify and prioritize targeted research that addresses key uncertainties about the response (e.g., changes in demographic parameters) of priority species/populations to specific conservation actions.	**[WP] Goal 2: {Landscape-level Planning}** 2.1 Conduct an overall threat assessment • **[Short: (~18 mo)]** 2.1.1 Annually update AppLCC "Science Needs Portfolio" and develop "Top Ranked Science Needs" recommendations for SC consideration in guiding landscape planning priorities (4.3.1) and decisions regarding expenditures of FY funds and/or other Member-sponsored capacity. (ongoing) (St w/ WG) *[[see also K]]* **[LCC Area #5 Science Needs Portfolio] *{Parallels WP}*** • **[Underway/ Initiated]** 5.1 Help identify and set the research-support priorities through active participation in Climate Science Center planning, review and selection efforts. (ongoing) (St)
S. Keyfactor/Sensitivity Analyses	
[NE] (embedded within) "Revise Models Accordingly" [NRCF] *{Feedback loop}* GOAL-SETTING *Which species to conserve? At what levels? Who decides?* [SWAP] N/A [SE] Conduct or facilitate statistical analysis of key parameters to examine their relative influence on population or habitat model predictions based on a range (e.g., confidence intervals) of assumed values (e.g., percent grass on landscape).	**[LCC Area #5 Science Needs Portfolio] *{Parallels WP}***
T. Spatial Data Analyses	
[NE] (embedded within) "Revise Models Accordingly" [NRCF] *{Feedback loop}* CONSERVATION DESIGN *What should landscapes look like to conserve all species at levels that society wants?*	**[LCC Area #5 Science Needs Portfolio] *{Parallels WP}***

[SWAP] N/A [SE] Conduct rigorous statistical analyses of key uncertainties (e.g., classification errors) related to the use and application of spatial data used in planning or monitoring. Document errors to facilitate refinement of geospatial datasets, when possible.	

[i] **Appalachian LCC 5-Year Work Plan: Goal Descriptions**

[WP]Goal 1: {Data Acquisition & Sharing}
[WP]Goal 1: Create and deliver a landscape-level data sharing strategy and scalable toolset ***Outcome**: (foundational - required to achieve Outcome) deliver landscape-level plans* ***Output(s):** addresses the creation of underlying data that is needed to support, build, or enhance landscape-level understanding, or data that are foundational to developing the tools that feed in at a higher level*
[WP]Goal 2: {Landscape-level Planning}
[WP]Goal 2: Deliver landscape-level conservation plans for regional use ***Outcome:** landscape-level planning and coordination that focus conservation actions in and adaptive manner* ***Output(s):** an integrated and refined set of planning products, processes, and dashboard-level tools that provide critical feedback, information, and insight to Members*
[WP]Goal 3: {Engagement & Communication}
[WP]Goal 3: Create an on-going facilitated process to promote engagement and dialogue across the Appalachian LCC region ***Outcome:** the creation of a transparent, cooperative, and inclusive process within which all interested parties can participate in meaningful dialogue for creating new ways of delivering conservation* ***Output(s):** development of a cooperative set of messages for the AppLCC Cooperative Members to utilize with their key constituents and linking those messages to a broader audience that includes the general public*
[WP]Goal 4: {Steering Committee (SC) Facilitation//Programmatic Alignment}
[WP]Goal 4: Assess and align conservation goals and actions that reflect the Cooperative Members' common and shared vision ***Outcome:** the commitments of the Steering Committee on organizing, coordinating, and implementing this Work Plan* ***Output(s):** (internal operational - focuses the efforts of the Steering Committee, Staff, and Members)*

[ii] [SWAP] Element 6 deals with revisions of Plans