



2010 RPA Assessment: Past, present, and future of America's forests and rangelands

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The RPA Assessment



- The Forest and Rangeland Renewable Resources Planning Act of 1974 mandates a national report (RPA Assessment) on the conditions and trends of renewable resources every ten years **on all forest and rangelands.**
- The RPA Assessment provides a snapshot of current U.S. forest and rangeland conditions and trends; identifies drivers of change; and **projects 50 years into the future (2010-2060).**
- The Assessment includes analyses of outdoor recreation, fish and wildlife, wilderness, forests, water, range, urban forests, and the potential effects of climate change on these resources.

Climate Change Legislative Mandates for the Forest Service

- **Global Climate Change Research Act, 1990**
 - authorized the U.S. federal global change research program which included the Forest Service

- **Food, Agriculture, Conservation, and Trade Act, 1990**
 - amended the RPA of 1974 to require the Renewable Resource Assessment to include:
 - “analysis of potential effects of climate change on the condition of renewable resources on the forests and rangelands of the United States”
 - forestry opportunities for mitigation

RPA Assessment: Use of Scenarios



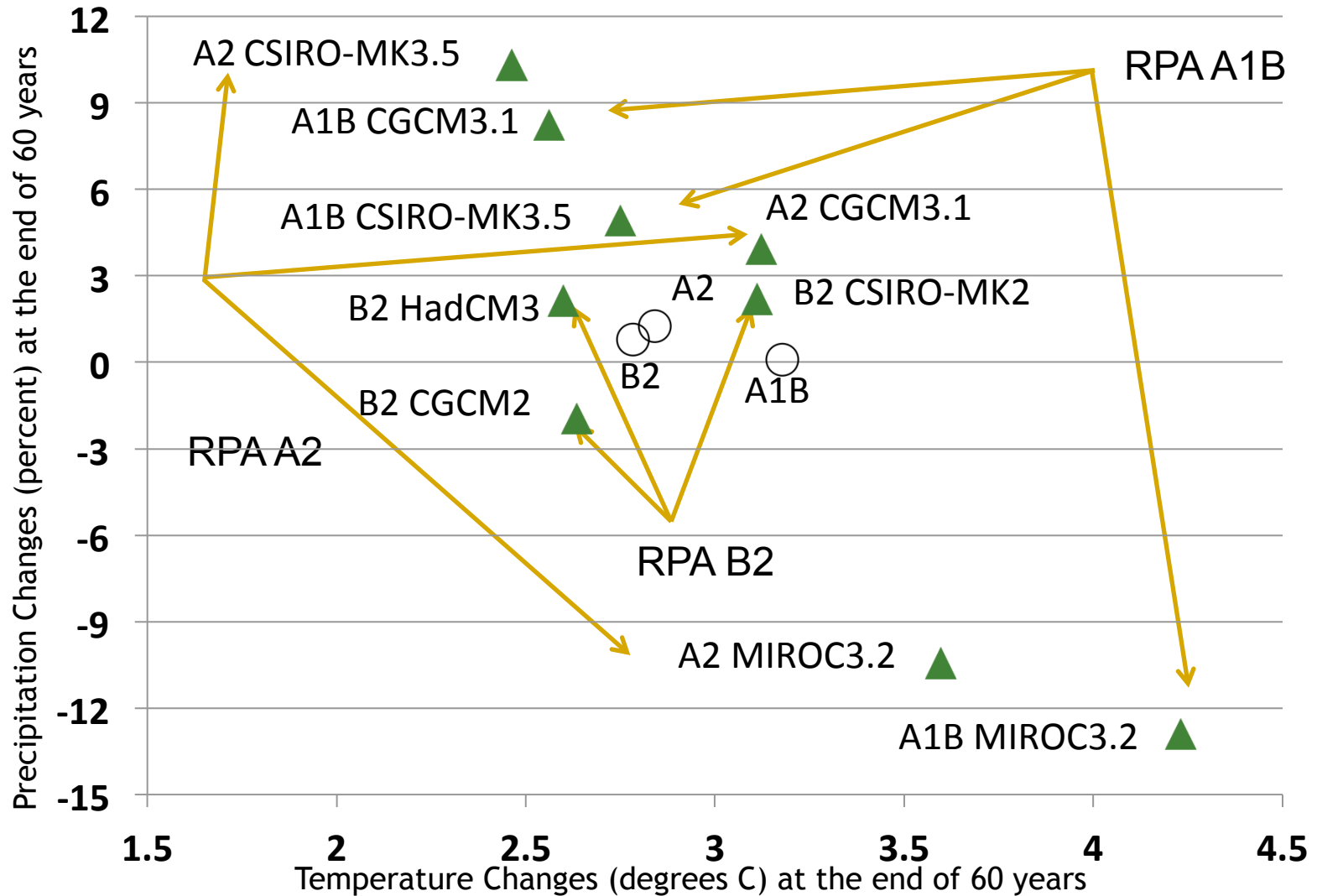
- Common assumptions are the “glue” that holds the individual RPA resources analyses together.
- Use of common assumptions for population change, economic growth, land use change have been used since 1979 RPA Assessment.
- 1979-1989: common assumptions developed jointly with several USDA agencies and BLM
- For 2010 RPA, we moved to IPCC-like scenarios, each with climate, socioeconomic, and land use projections, all downscaled to county level.

2010 RPA Scenarios

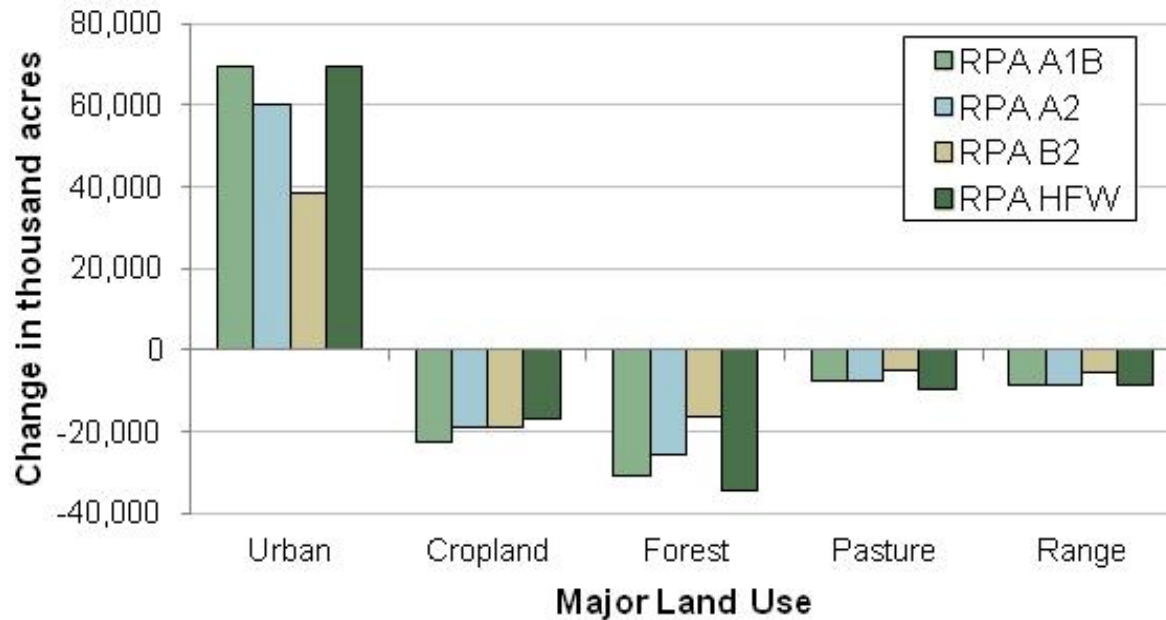


Characteristic	Scenario RPA A1B	Scenario RPA A2	Scenario RPA B2	Scenario RPA HFW
<i>Linked to International Context through IPCC SRES</i>				
Global Real GDP Growth (2010-2060)	High (6.2X)	Low (3.2X)	Medium (3.5X)	High (6.2X)
Global Population Growth (2010-2060)	Medium (1.3X)	High (1.7X)	Medium (1.4X)	Medium (1.3X)
Global Expansion of Primary Biomass Energy Production	High	Medium	Medium	Fuelwood demand follows historical trends in all countries
<i>U.S. national projections scaled to county</i>				
U.S. GDP Growth (2006-2060)	Medium (3.3X)	Low (2.6X)	Low (2.2X)	High (3.3X)
U.S. Population Growth (2006-2060)	Medium (1.5X)	High (1.7X)	Low (1.3X)	Medium (1.5X)
Expansion of U.S. Wood Fuel Feedstock (2006-2060)	High (15.7X)	Medium (9.4X)	Low (3.7X)	Historical (1.6X)

2010 RPA Climate Projections

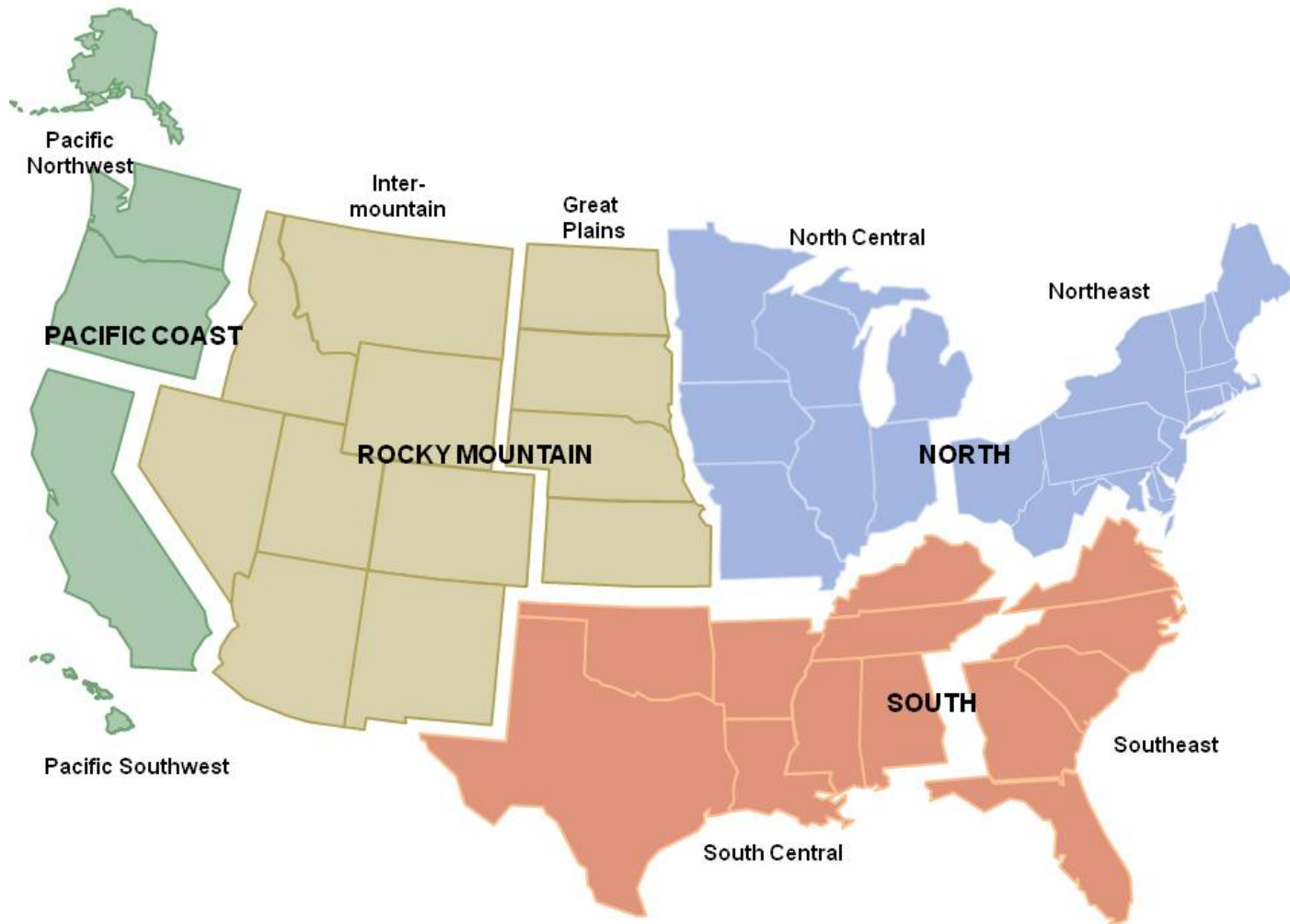


Land Use Change

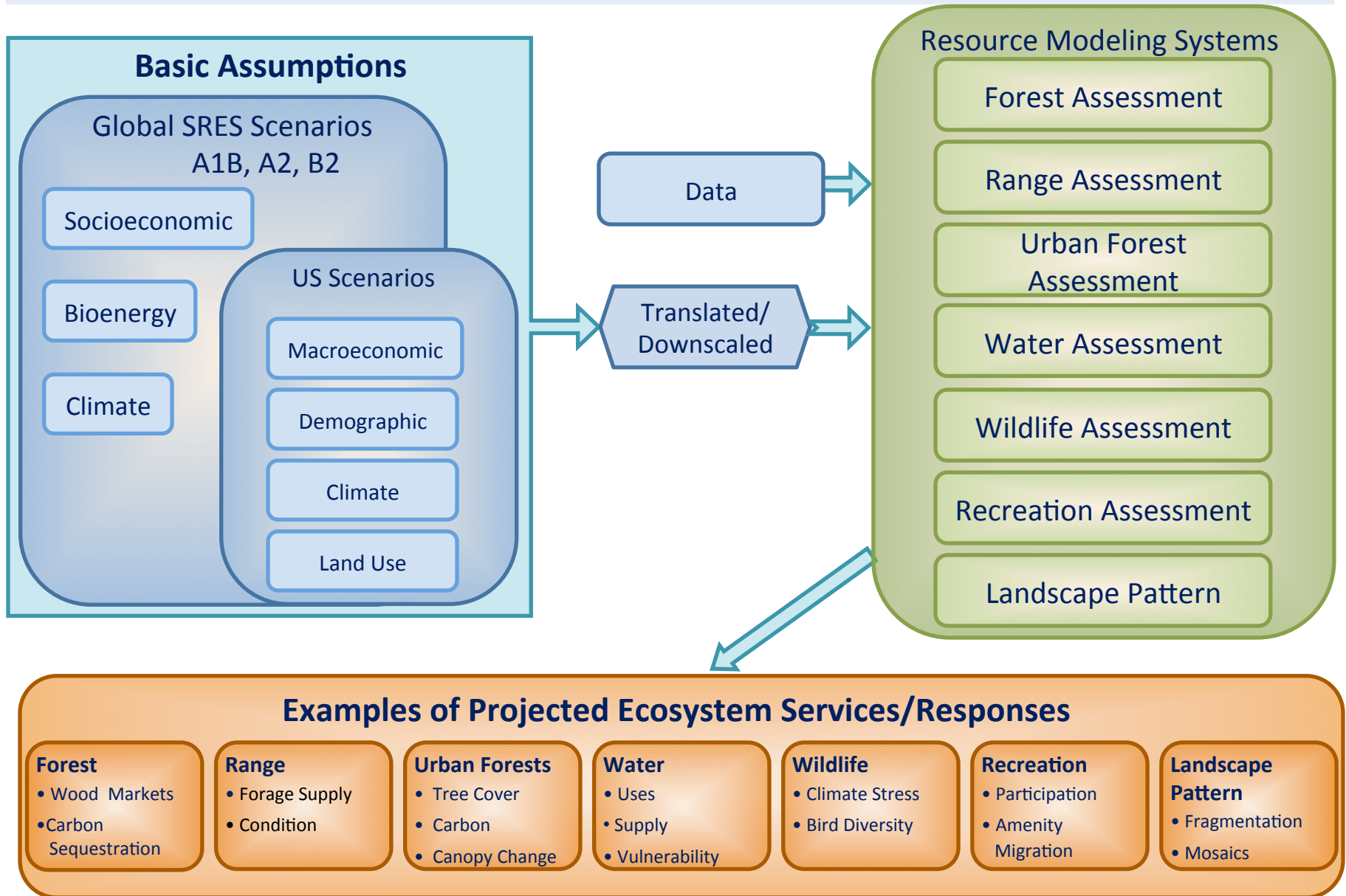


Nonfederal land use change in the conterminous United States, 2010-2060

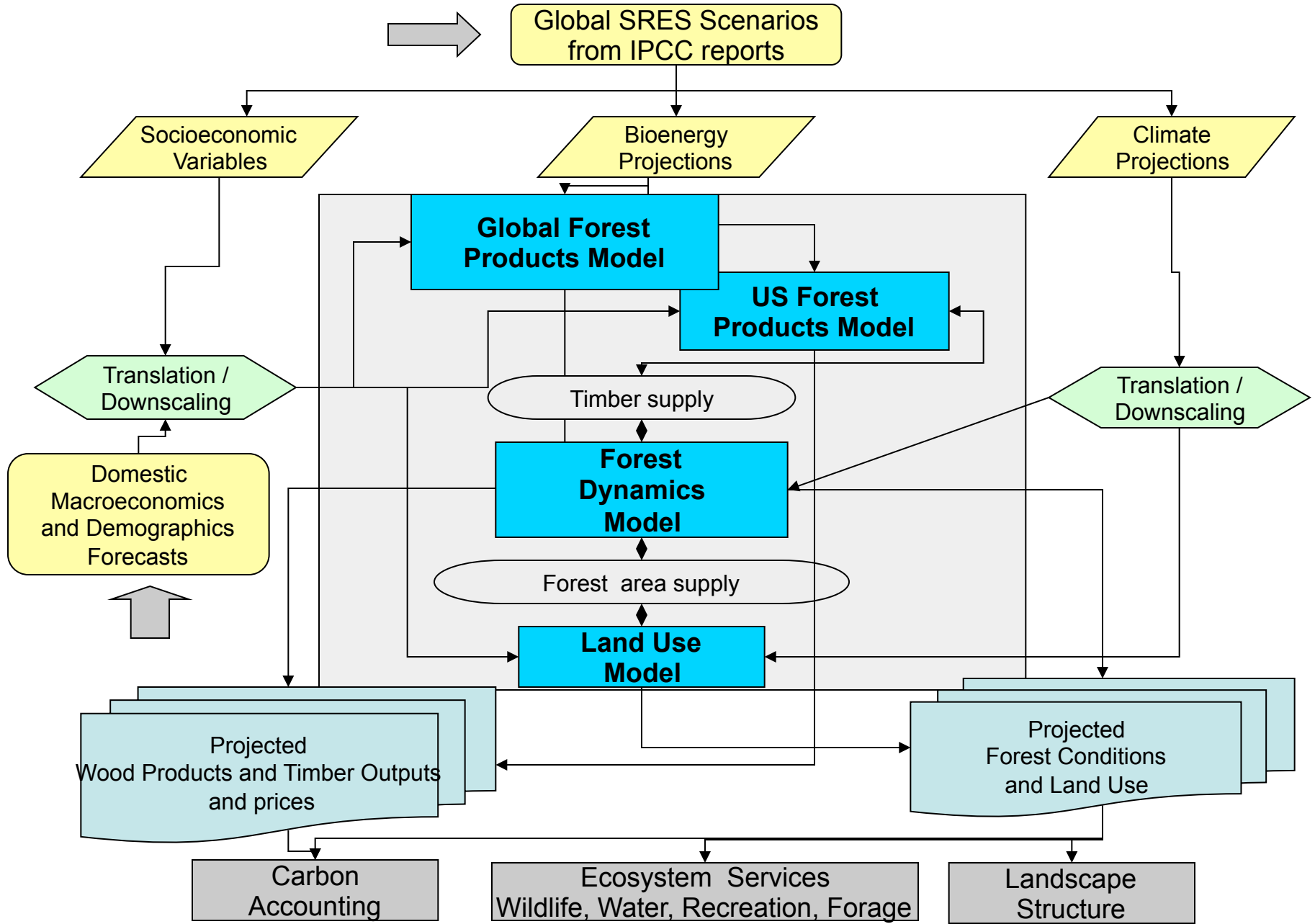
RPA Assessment Regions



Forest Service RPA Assessment



2010 RPA Models and Scenario Analysis: Forests



Lessons Learned - 2010 RPA Scenarios



- Using IPCC linkage worked well to ensure both globally and nationally consistent assumptions that linked socioeconomic and atmospheric drivers of change on natural resources.
- Traditional RPA audiences didn't always identify with “equally likely scenarios, as opposed to comparisons to a “business as usual” scenario.
- Need to better communicate the use of scenarios to frame the RPA analysis, and to link more specific variations that resonate with various audiences of RPA.
 - Scenario components are the starting point for RPA analyses.
 - Developed HFW scenario in response to user needs.

Lessons Learned - 2

- Goldilocks reaction to the RPA scenario approach:
 - Too many scenarios - difficult to deliver a take-home message
 - Too few scenarios: usually regarding the number of GCMs used
 - Not sure what constitutes “just right”
 - Limited time and resources
 - Potentially escalating number of scenarios
- Timing
 - RPA runs on a 10-year cycle that requires scenarios to be determined early in the cycle, with 5-year updates.
 - Availability of global scenarios (socioeconomic or climate) and other source data (e.g. NLCD) is outside of our control, so there are always trade-offs in the currency of the scenarios “data”.
 - As we increasingly link to external data, timing becomes more challenging.

Future Scenario Needs for RPA

- The global linkage to both climate and socioeconomic projections is critical, but it's not clear how we can make that linkage to IPCC - will SSPs provide the needed link?
- Critical to be able to consistently aggregate across scales - from global to national and subnational scales.
- Engagement/guidance on “what’s good enough” in the number of scenarios/climate projections used in resource analyses.
 - Recent publications suggesting “all” climate projections need to be considered in analyses.
 - Agency needs for considering other dimensions in their analyses that further complicates a determination on “what’s enough.”
 - What are “usable” climate and socioeconomic projections that result in analyses that are both scientifically credible and useful for management?

Future Scenario Needs for RPA - 2

- While the global community is moving to CMIP6, many of the national and smaller scale analyses will rely on CMIP5 and associated SSPs for a number of years.
 - What will be available from SSPs related to CMIP5 that the user community can use?
 - How can we help in clarifying needs for analysis what rely on the AR5 and related results?

- Strongly prefer developing a suite of “federal” scenarios in an interagency effort to improve credibility of scenario projections and comparability of analyses.