Sector	Area	Ecosystem	Impacts	Ideas to manage	Adaptation Research	Impediment
Biodiversity Protection	Central Region	Moist refugia	Increased pressure on water holes, reduced food	Food animal control, fire control	Sensitivity analysis, ecosystem level modelling	Focussed management plans for species
Biodiversity Protection	West McDonald	Montane	Loss of taxa	Translocation, genetic selection	Sensitivity analysis, ecosystem level modelling, cost benefit analysis of options	Availability of surrogate habitat, lack of public interest
Policy	Low lying coast areas	Coastal wetlands	Salt water intrusion, cumulative impact with other challenges	Engineering, prioritising high worth, indigenous engagement	Cost benefit of barrages, assess community engagement	Scale of problem, long term certainty of scale of rise, lack of communication between researchers
Communication	Whole	Whole	No political/community will	Develop simple messages, involve community in research, make it relevant to community	Communication efficiency, define unique values and areas	Gap between science and policy-makers
Conservation and cross sector	Savanna and arid	All	Fire regime change	Prescribed burning mapping	Effectiveness, where management is most critical	Conflicts between land uses and values, knowledge capacity, operational resource constraints

Sector	Area	Ecosystem	Impacts	Ideas to manage	Adaptation Research	Impediment
All	Coastal and near coastal riverine	Estuarine and flood	Sea level rise	Barrages	Where to stop, how isolated in application/extent, mary river experience/review	Uncertainty re sea level rise,
Conservation	Savanna and arid	Most	Carbon price	Carbon ‘farming’	Assumption about co-benefits, property rights and carbon	How ID and resolve conflicts, property right, carbon
All	All	All	Temperature rise	Can’t	Where are susceptible areas and the refugia	Knowledge of physiological tolerance, are tropical species more vulnerable than temperate?
National Park	Kakadu, Litchfield, Nitmuluk	Tropical savannah	Increase in frequency and intensity of fire	Patchiness of fire regime, prescribed burning, more managers	Which vegetation components adapted and non-adapted?, effect of invasive grasses	More managers, changing people’s mental models, continued funding support for long term monitoring
Conservation	Kakadu, Litchfield, Nitmuluk	Tropical savannah	Changes in seasonal food and water supplies	Provide water points, protect refugia, protect vegetation cover in catchments, managing conservation	Predictive modelling of refugia, species-specific models, how stressed are organisms during current dry season	Available datasets, suitable datasets, different interpretations of models

Sector	Area	Ecosystem	Impacts	Ideas to manage	Adaptation Research	Impediment
Agriculture		Modified ecosystems	Changes in pollinators	Reduce fire frequency, change land use	Integrated conservation planning, bioregional plans	Collective action of landowners, co-operative governance
NT		Tropical savannah	Increased development, external pressure	Management planning, environmental impact assessment, government regulations, renewable energy	Market research, effect of increased rates, water prices, renewable energy options, cost/benefit analysis	Artificial managerial boundaries, who pays?
NT central Australia		Trop savannah, central desert	Increase in hot days	Predictive models	Need to know about extreme events	More “firestorms” – big fires become unmanageable
Water (freshwater)		Aquatic	Changes in fish distribution and increase in fish kills at end of dry season	Species distribution and habitat models, water quality and biodiversity impacts monitored	Monitoring river health, decomposition rates, algal blooms	Don’t know how climate change will affect length of dry season and river flow
Coastal management	Coastal	Flood plain	Saltwater incursion, freshwater displacement, brackish groundwater, loss of floodplain ecosystems, increase coastal marsh areas	Barrier to tidal penetration inland, prioritise key floodplain areas to protect	Monitoring water and associated biodiversity assets quality along coast to catchment gradient	Scalar effects, decide what to manage
Sector	**Area**	**Ecosystem**	**Impacts**	**Ideas to manage**	**Adaptation Research**	**Impediment**
