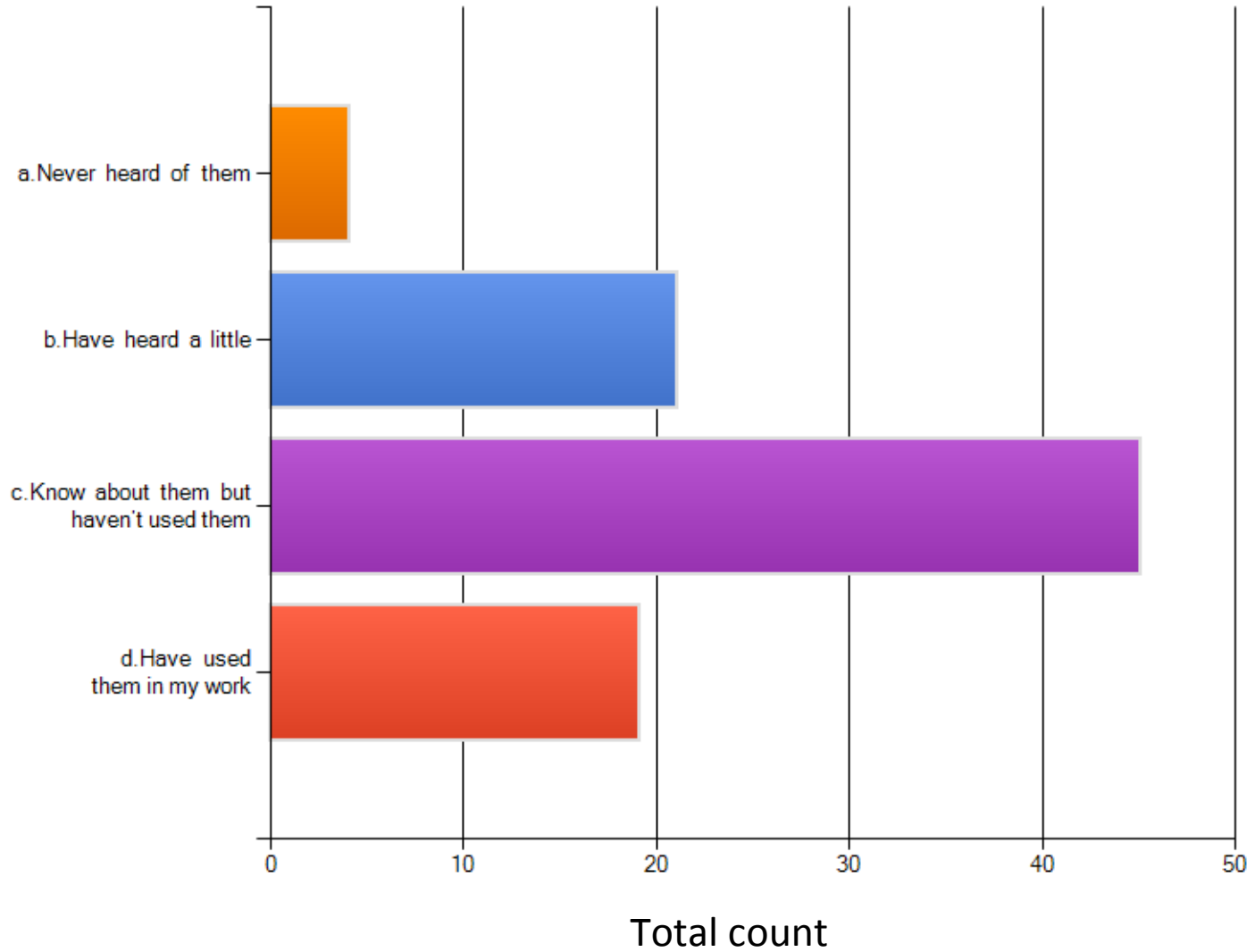


Bridging the Gap: Downscaling Climate Models to Inform Management Actions

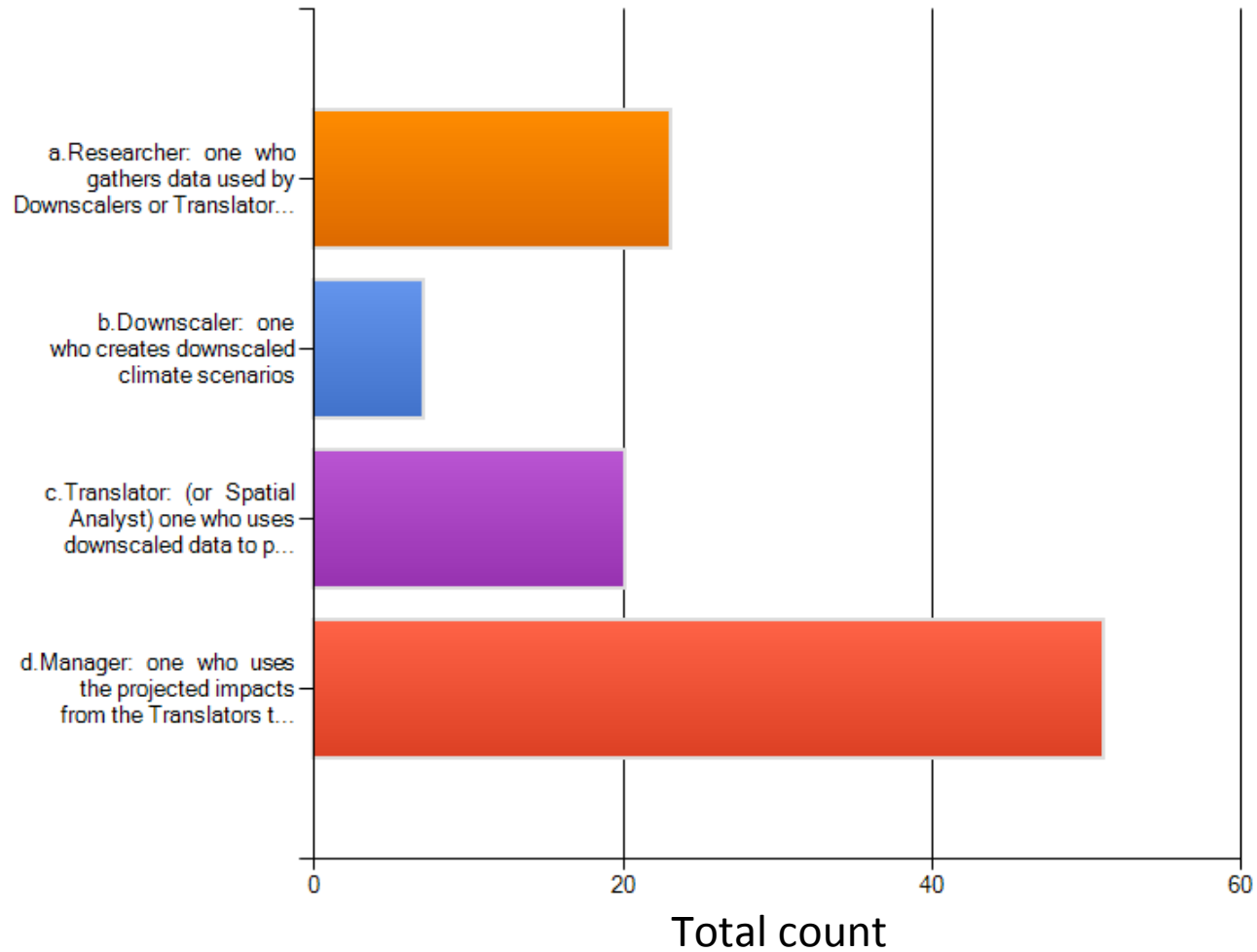
A Quick Review of Survey Results

November 3rd, 2010

Knowledge Of Downscaled Climate Change Models

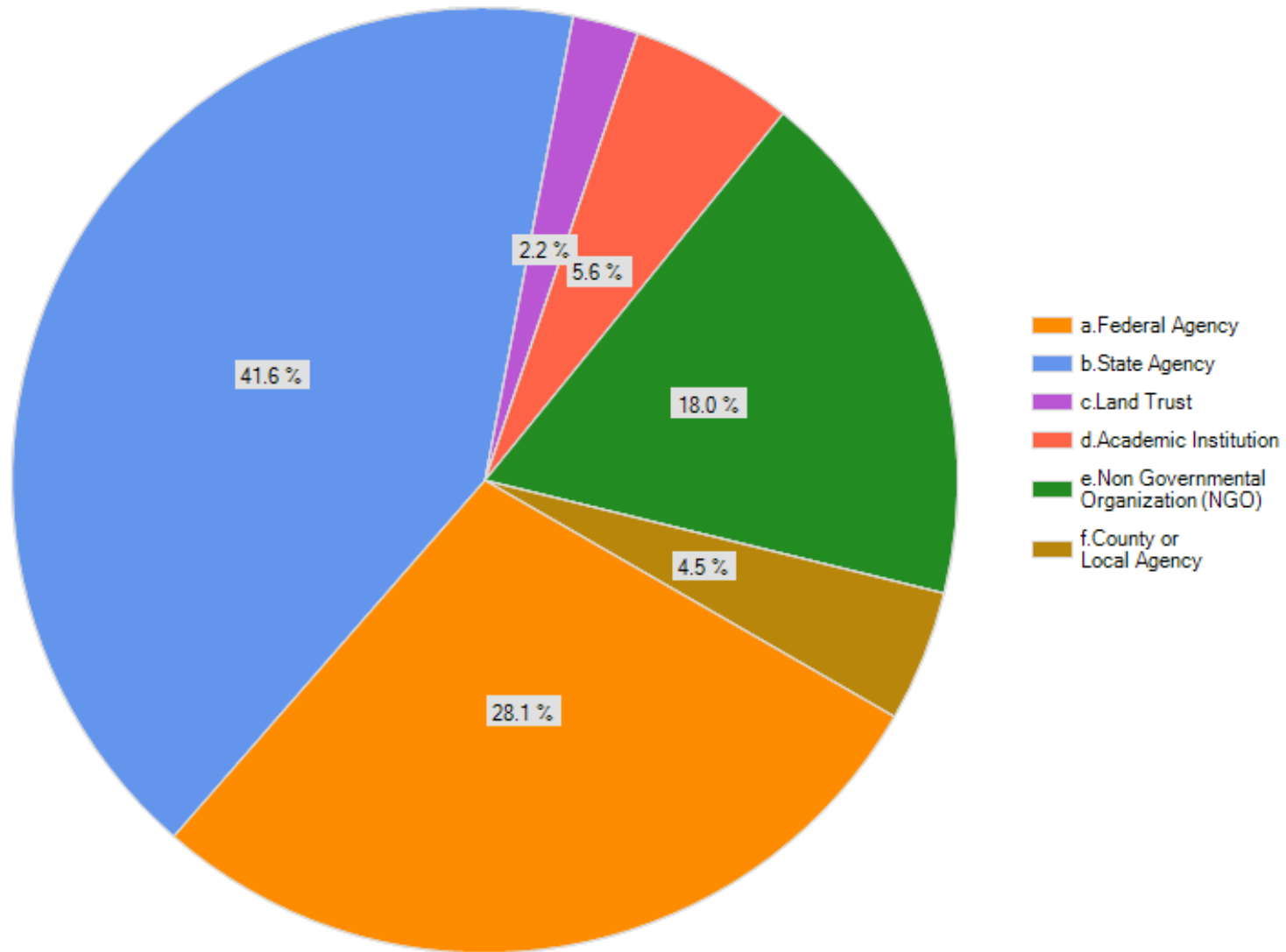


Self-Categorization



Other responses include:
Education and outreach
Planner – conservation plans
Ecologist
Policy analyst

What Type of Organization Do You Represent?

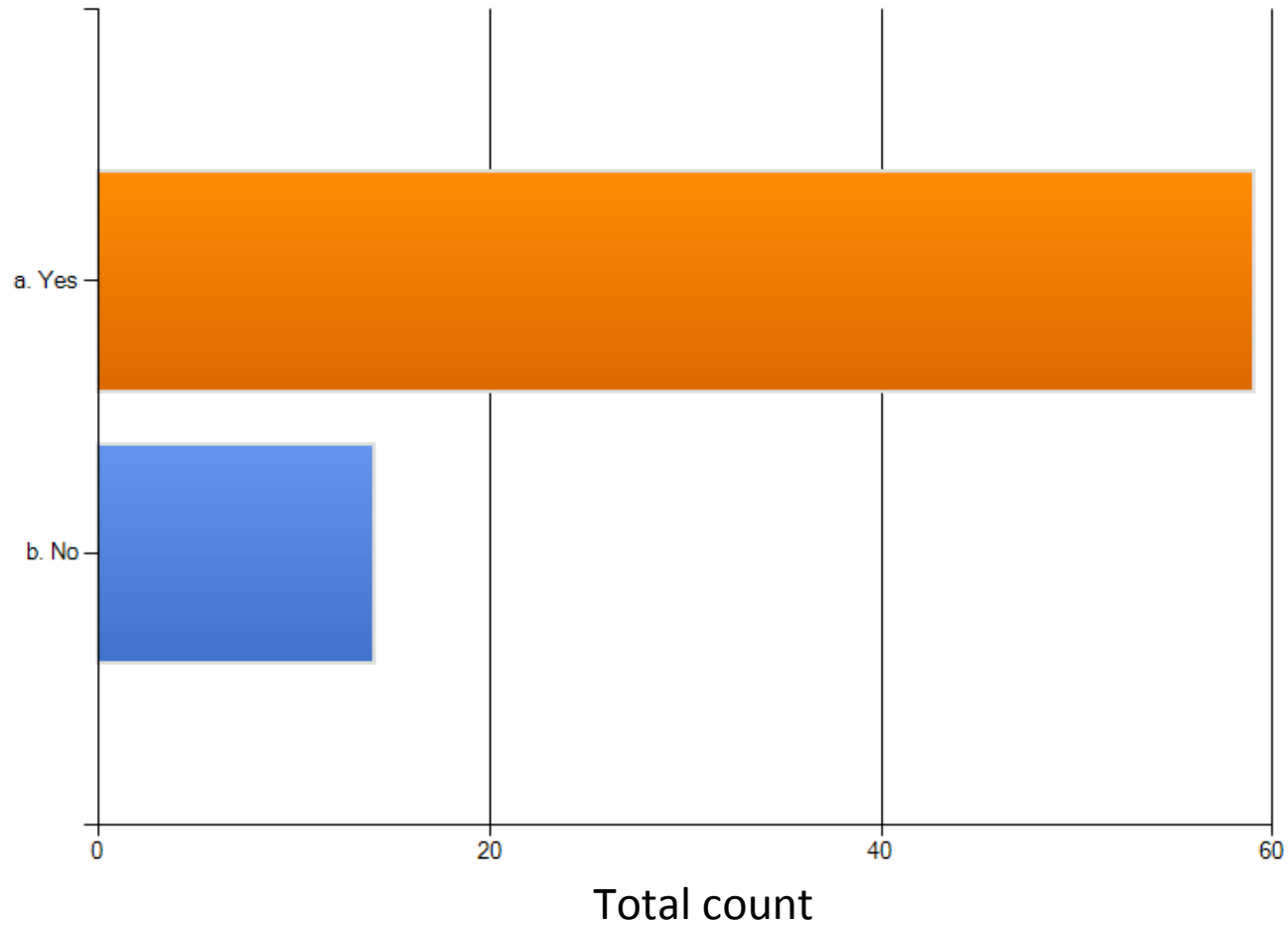


Other responses include:

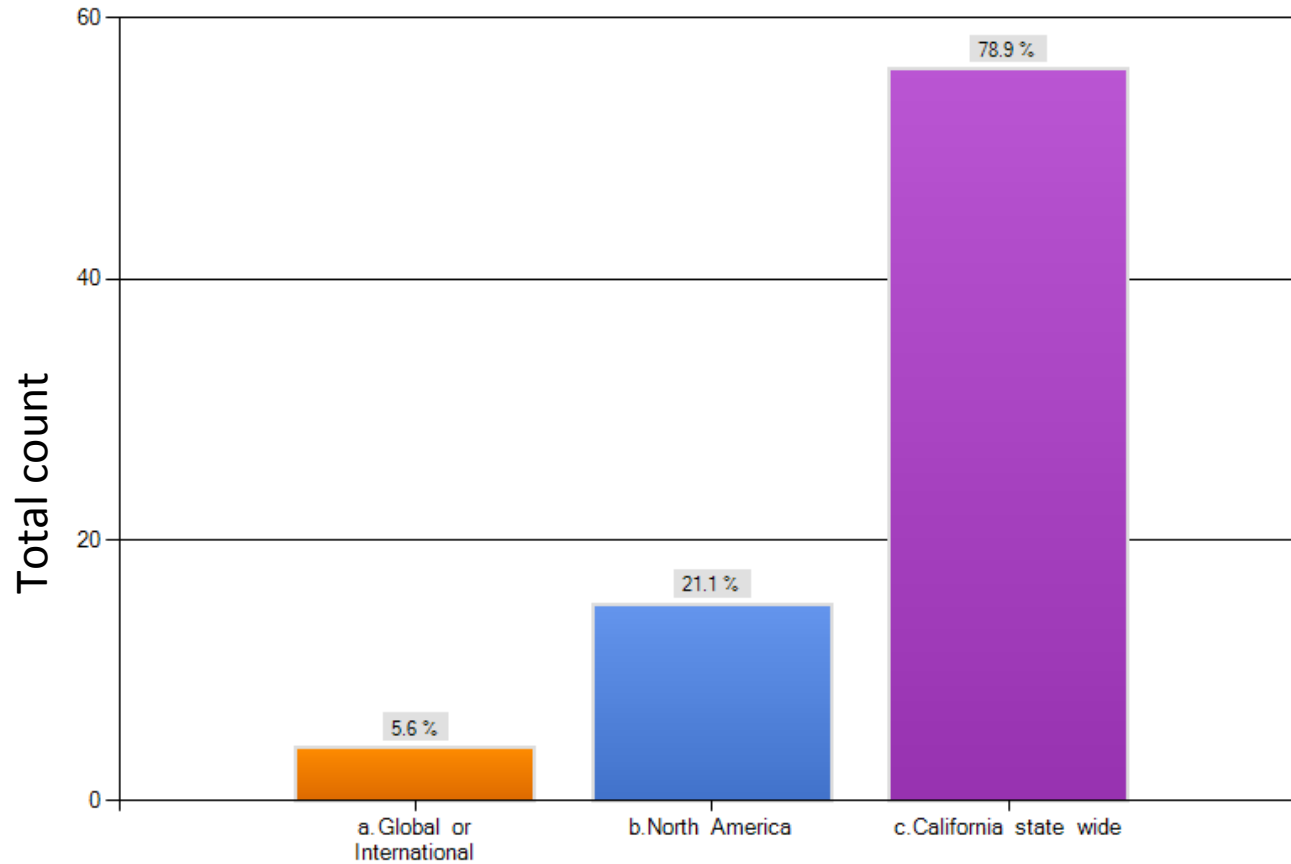
Joint Venture

Regional Agency

Taken Steps To Assess Or Predict Climate Impacts?



Geographic Focus Of Work



Other responses include:

SF Bay Area (6)

Nevada

Klamath Basin (2)

Deserts (4)

Central Valley (3)

Sierra Nevada/Great Basin

Souther CA (6)

Foothills

Coast

CA floristic province

Future Climate Measures Important to Conservation Planning/Efforts

	Reasearcher	Downscaler	Translator	Manager
Air Temp	75%	100%	63%	58%
Water Temp	81%	100%	56%	61%
Extreme Events	94%	100%	94%	84%
Fog	56%	100%	63%	37%
Bioclimatic Variables	94%	50%	81%	84%
Not Sure	0%	0%	6%	15%

Soil Moisture
 Micro climate processes
 Species distributions
 Hydrological regimes
 Degree-days changes
 Ocean circulation

Depends on issue

Snow accumulation
 Wind speed
 Humidity

Soil temp
 Salinity
 Snowpack
 Ocean acidity
 Non-anthro sources of emission
 Annual variability

Important Aspects of Climate Models

	Reasearcher	Downscaler	Translator	Manager
Spatial Resolution	59%	100%	80%	69%
Temporal Resolution	44%	50%	60%	44%
Uncertainty	75%	100%	87%	76%
Different formats	13%	50%	27%	19%
More scenarios	25%	50%	33%	37%
Not Sure	19%	0%	6%	13%

Don't know where to find information

Focus on management actions that work under range of conditions

Higher resolution not always better/mis-use

Water impacts

Direct effects of Climate Change Important for Planning or Conservation

	Reasearcher	Downscaler	Translator	Manager
Depth of Snow	75%	75%	56%	58%
Start of growing season	88%	100%	69%	76%
Length of growing season	94%	100%	81%	71%
Amount of stream flow	88%	100%	75%	84%
Timing of stream flow	88%	100%	69%	76%
Ocean Acidification	56%	75%	31%	40%
Fire	88%	100%	63%	66%
Not sure	0%	0%	13%	11%

Direct effects of Climate Change Important for Planning or Conservation

	Reasearcher	Downscaler	Translator	Manager
	Growing degree days	Depends on the issues	Sea level	Human migration and economic impacts
	Changes in ppt patters and amounts		Drought	Impact on aquifers
			Veg distribution	Flood frequency
			Community organization	Veg distribution
				Extreme events
				Invasives
				Air quality
				Temp extremes, ppt, humidity
				Sea level

Indirect effects of Climate Change Important for Planning or Conservation

	Reasearcher	Downscaler	Translator	Manager
Shifts in species range or species loss	100%	75%	94%	92%
Changes in timing of biological events	94%	100%	88%	80%
Habitat loss	94%	75%	69%	87%

Demographic effects

Demographic effects

Effects on veg structure

Species interactions

Community composition/interactions

Water availability

Public health

Human actions and responses

Phenology impacts

Barriers in creating, obtaining, or using data in relation to climate change – *Researchers, Translators, Downscalers*

Lack of data sharing, centralized databases, good metadata

Interagency communication

Inconsistent parameters used in GHG scenarios

Limited understanding of how to use models appropriately

Issues with appropriate scale (spatial and temporal)

Too many scenarios – inability to compare across studies

Lack of observational data especially historical and outside CA

More focus needed on adaptation strategies, less on prediction

Barriers in creating, obtaining, or using data in relation to climate change - *Managers*

Lack of funding or time

Political pressures

Lack of partnering

Data difficult to obtain or in too many formats

Data not user-friendly

Issues with scale (temporal and spatial – e.g. mismatches)

Lack of data related to water issues

Too many models/lack of consensus

Public perspective



What Do You Hope To Get From Workshop – *Researchers, Translators, Downscalers*

Status of/background on most current downscaling efforts and data

Information on data access

Information on application/uses & pitfalls of downscaled climate models

Discuss making models valuable to managers (end-user needs)

See what others are working on/networking/coordinating

Discuss adaptation strategies

Build technical resources, discuss and compare techniques

Discuss biological uses of downscaling

What Do You Hope To Get From Workshop - *Managers*

Status of/background on most current and future downscaling efforts and data

Information on data access

Information on application/uses & limitations of downscaled climate models

Information on uncertainty for management activities

Discuss specific applications of climate models (e.g., to regions, taxa)

Discuss making models more valuable to managers (end-user needs)

See what others are working on/networking/coordinating

Information on how to incorporate potential impacts into management activities – especially at a more local scales

Information on most current projected changes

What scientists want

Those conducting downscaling would like

- ✓ Higher quality GCM information
- ✓ Better/more observational data sets
- ✓ Other variables besides precipitation and temperature such as relative humidity or wind speed

What scientists want from managers

Those conducting downscaling would like to know more specifics from managers

- ✓ What questions need to be answered?
- ✓ What parameters of his/her specific issue are most sensitive?
- ✓ What are the important biological cycles?
- ✓ How will the data be used?

Ecologists also need to get together to identify their greatest needs for the downscalers.

What managers want

From the scientists, managers would like

- ✓ Projections over a range of scales – from a single refuge to landscape-scale
- ✓ A better understanding of the levels of uncertainty and how to deal with those
- ✓ More information on different models and the appropriate use of those models for conservation planning
- ✓ More communication of what can and cannot be provided.