**Workgroup #4: Working Lands & Economy**

Climate Change Adaptation: Planning for Climate Change at the Landscape Scale for Clatsop and Tillamook Counties, Oregon. September 16, 2014. Mtg #2.

Risks Effects

|  |  |
| --- | --- |
| Sediment Transport to StreamsChanges over time | * Smothering spawning beds
* Transporting too much debris
* 🡫 Water quality – turbidity, intakes clogging, “sediment” pollution
* Altered hydrology affecting dev’t
* Changed food regime
* Possible 🡩 coastal accretion
* Possible 🡩 dredging/costs
 |
| Risk of 🡩 forest Fire | * Opportunity for invasives
* Loss of Carbon sequestration
* Loss of habitat for current forest species
* 🡫 timber
* 🡩 risk of landscape
* 🡩 forest/urban fringe
* 🡩 habitat for fire adaptive species
* 🡩 damage to structures
* 🡫 timber jobs
* 🡫 tourism
 |
| 🡩 Ocean Acidification | * 🡫 shellfish industry
* Disrupt food web
* Commercial fisheries disrupted
* May affect tourism
* So many unknowns…
 |
| Salt water intrusion | * 🡩 Salinity on ag. Land

Change’s crops* Eel-grass beds moving, affecting breeding, etc.
* Contaminates fresh water and ground water sources.
 |
| 🡩 groundwater pumping | * 🡫 aquifer, salt water intrusion
* 🡩 energy used to pump
 |
| More frequent & intense storms | * 🡩 runoff from pesticide and CAFOs
* Water quality 🡫
* Subsiding and accretion of beaches negatively affects tourism
* Negative impact on shellfish, commercial & recreational
 |
| 🡩 temperature | * 🡩 stress on plants & animals
* Invasives moving in
* More cuttings of crops
* 🡩 diseases
* Northern range shift of biota
 |
| 🡩 air temperature and effects on “evapo-transportation” | * 🡩 water demand in all sectors
* Change in local climate feedback loop
 |

Risks Effects

|  |  |
| --- | --- |
| Reduced summer base flows in late summer | * 🡫 habitat
* Fewer deep pools
* 🡩 temperature
* 🡫 water for irrigation and municipalities
* Water rights conflicts
* Urban/rural fights
* 🡩 drying of fuels in riparian areas
* More people in rivers at low flow may exacerbate water quality
 |
| Shifts in upwelling regime | * Reduces fish productivity
* 🡩 hypoxia
* 🡩 acidification
 |
| Conversion of grasslands to row crops | * 🡩 carbon dioxide
* 🡩 fuel consumption from tilling soil
* Water hungry crops
* 🡩 fertilizer use
* 🡩 sedimentation
* Less resilient crops to climate change
 |
| 🡩 climate refugees to Oregon | * 🡩 ALL pressures noted
 |

The workgroup then focused in on a few of the risks identified above to think about management objectives to address those risks.

Risk: 🡩 Erosion & Sedimentation

Effects: above

Management Objectives:

* “protective riparian buffers” trap and slow down and filtrate sediment 🡩 shading
* “protect, enhance, restore buffers”
	+ Incintivise
* Different logging practices on steep slopes “disturbance”
* Confluence of objectives
* Increasing watershed integrity, 🡩 resilience to disturbance
* Change building practices to minimize erosion/sedimentation
* Land practices in ag. (no till, drought adapted crops) – increase rotation of crops
* More forest burns 🡩 erosion

Risk: Increased forest fires

Effects: above

Management Objectives:

* Reduce fuels to 🡫 fires through thinning
* Create job … using biofuels from thinning
* Increase diversity of forest species
* Adapt reforestation species to new conditions
* Maintaining buffer zones and forest canopy undisturbed
* Keeping people (1° ignition source) out in fire season.
* Improve fire forecasting tools, both short-term forests and seasonal fire risks, etc.
* Improve accuracy and lead-time of climate systems to anticipate fire potentials.
* 🡫 expectation of humans to know the future weather
* Education people about variability and the “unknowns”

Risk: Reduced base flows, 🡩 seasonal extremes of rivers

Effects: above

Management Objectives:

* Plant drought resistant species
* 🡩 water storage, conservation
* Research water-year data to anticipate trends, leads to more resilient water practices
* Change financial incentives to change consumptive patterns.
* Regionalization of water systems and treatment to 🡩 resilience and buffer
* Diversify municipal and ag water sources
	+ Take less from more sources
* 🡩 riparian buffers
* 🡩 fish passage at damns to maximize benefit (to accommodate water change)
* Water catchment and rain gardens
* Maximum use of technology for water supply and delivery
* “Healthy watersheds and rivers”

Using best technology spreads across all management objectives – data collection, monitoring, etc.