



**Natural Systems
 Technical Working Group (NS TWG)**

**Presentation for the Adaptation Advisory Group
 December 17, 2008**

Governor's Climate Change Sub-Cabinet

Criteria Used to Evaluate Options

(each ranked 1,3,5 for total possible score of 30)

- **Significance:** Magnitude/extent of climate change effects; consider irreversibility of impacts
- **Benefits and Effectiveness:** Compares vulnerability of not carrying out the option to vulnerability if option is implemented. Ancillary benefits considered. Is there a "gap" – or is this already being addressed?
- **Costs:** Expensive or inexpensive; initial and costs over time.
- **Feasibility:** Realistic to implement? (within state authority; legal, administrative, financial, technical & other resources exist?)
- **Timing:** When is action needed?
- **Adaptive Capacity:** Considers resilience of the natural system to climate change and the capacity of humans to adapt.

Overview of Natural Systems TWG

- **Focus:** Analyze and recommend options for adapting to impacts on climate change on Alaska's natural biotic ecosystems and resources, and uses of those resources.
- **Scope:** Agriculture, Forestry, Wildland Fire, Invasive Species, Commercial Fishing, Fish and Wildlife Management, Water Conservation and Management
- **Membership:** Representatives of state and federal agencies, universities and non-profit organizations.

Natural Systems TWG Priority Adaptation Options

(in rank order – 13 participants in balloting)

1. Incorporate CC in commercial fisheries management.
2. Modify wildland fire policies to recognize CC context.
3. Protect community water sources and instream flows.
4. Expand programs to control invasive species.
5. Revise fish and wildlife harvest regulations, as required for CC adaptation.
6. Adopt adaptive fish and wildlife management to minimize or slow loss of species.

Natural Systems Adaptation Catalog

- **Section I – Summary:** Expected effects of climate change on Alaska's habitats and dependent fish and wildlife species. Marine, Terrestrial, Freshwater.
- **Section II - Catalog** of relevant adaptation options State could take to adapt to changes in Alaska's natural systems
 - At Policy or Program level, with examples of "extended actions" that could be taken to implement
- **Section III – "Cross-Cutting" Recommendations**
- Research & monitoring recommendations will also be forwarded to Research Working Group

Natural Systems TWG Priority Adaptation Options

(in rank order – 13 participants in balloting)

7. Assist commercial fishing communities and users in adaptation to climate change.
8. Develop capacity in new forestry and wood biomass opportunities.
9. Support sustainable agriculture at local level.

1. Incorporate CC in commercial fisheries management

- Consider CC impacts on species abundance and distribution when assessing fish stocks and developing commercial fisheries policy and management plans.
- Adopt State Arctic Salmon Management Plan with precautionary approach (as NPFMC).
- Develop more responsive fish stock assessment tools, to address CC information and adaptation needs.
- Consider potential ecosystem impacts when making decisions on commercial fisheries.

7

4. Expand control of invasive species

- Support all-taxa Alaska Invasives Species Council; implement statewide strategic program for invasives.
- Provide funding, training, staffing for recognition and response.
- Support local control and response efforts; provide public outreach/education.
- Control invasives on public lands and at public facilities.
- Provide effective regulatory controls.

10

2. Modify wildland fire policies

- Modify wildland fire policies in context of climate change.
- Provide information, technical assistance and funding for community fire protection plans.
- Examine strategic use of wildland fire to prevent uncontrolled fire.
- Evaluate change from Limited to Full fire suppression response in tundra environments.
- Engage public in wildland fire prevention, fire protection, and risk mitigation programs near communities.

8

5. Review F&W regulations

- Review State fish and wildlife management laws, policies and practices to improve timely, coordinated and effective adaptation to CC.
- Ensure regulatory process can respond more quickly to climate change effects.
- Improve management tools and adaptive approaches for responding to climate change impacts on fish and wildlife populations and harvest success.
- Improve coordination between state and federal management and decision-makers to ensure effective adaptation in regulatory actions.

11

3. Protect community water sources and instream flows

- Identify and protect watersheds to meet estimated future water needs of communities, and to reserve instream flows for productive fish habitat.
- Identify water needs of Alaskan communities.
- Establish baselines to measure change in hydrologic parameters.
- Review existing water reservations in areas of greatest change.
- Streamline adjudication of water rights for community water supplies and in-stream flow reservations to facilitate adaptation.

9

6. Adopt adaptive F&W management to minimize or slow species loss

- Coordinate state and federal management to minimize or slow loss of species, where such mitigation is feasible.
- Increase efforts to update Alaska Anadromous Waters Catalog.
- Invest in management plans, monitoring and actions necessary to respond to CC effects on both game and non-game species.
- Improve state and federal coordination to ensure consistent and effective management responses.

12

7. Assist commercial fishing communities & users in adaptation

- Assist communities and user groups in adapting to changes in commercial fishing industry necessitated by climate change.
 - Provide socio-economic information to communities.
 - Invest in and support potential new fishing opportunities.
 - Develop fuel cost transition plans, with users.
 - Provide education and outreach for new entrants.
 - Evaluate/pursue allocation and permit responses for communities that need new fishery opportunities.
 - Develop new fishing gear to target new species and avoid bycatch species.

13

Cross-Cutting Actions

(Note: The two O&E actions are in rank order)

1. Outreach & Education: Provide centralized source of information, adaptation tools, technical assistance and funding to enhance capacity to respond to climate change.
2. Outreach & Education: High priority subject for State K-12 Science Standards.
3. Support cap & trade emissions trading. Recycle emissions fees to fund adaptation actions.

8. Develop capacity in new forestry and wood biomass opportunities

- Invest in economic development and infrastructure to develop capacity to use insect- or fire-damaged timber, and underutilized and new sources of wood biomass.
 - Develop capacity to product new products from damaged timber.
 - Use wood biomass for heating; provide incentives.
 - Research suitable types of harvest equipment.
 - Conduct demonstration wood biomass projects.
 - Explore alternative harvest strategies to encourage use of insect- or fire-damaged timber.

14

Many thanks to dedicated Natural Systems TWG members for their input and work!

Next TWG meeting: January 12, 1:00-3:00 p.m.

Work on templates for recommended adaptation options; preparation for February AAG.

17

9. Support local sustainable agriculture

- Support and expand sustainable agriculture in Alaska at local level.
 - Adopt and implement state strategic plan for agriculture.
 - Invest in and support "Alaska Grown" – sustainable & economical food supply for local communities.
 - Strengthen intrastate transport and marketing of Alaskan agricultural products.
 - Expand production and markets for products suited to Alaska's climate, including under changing conditions.

15