Menu of Adaptation Strategies and Approaches

Dibaginjigaadeg Anishinaabe Ezhitwaad

A Tribal Climate Adaptation Menu

Strategy 1: Consider cultural practices and seek spiritual guidance.

1.1. Consult cultural leaders, key community members, and elders.
1.2. Consider mindful practices of reciprocity.
1.3. Understand the human and landscape history of the community.
1.4. Hold respect for all of our relations, both tangible and intangible.
1.5. Maintain dynamic relationships in a changing landscape.

Strategy 2: Learn through careful and respectful observation (gikinawaabi).

2.1. Learn from beings and natural communities as they respond to changing conditions over time.

Strategy 3: Support tribal engagement in the environment.

3.1. Maintain and revitalize traditional relationships and uses.
3.2. Establish and support language revitalization programs.
3.3. Establish, maintain, and identify existing inventory and monitoring programs.
3.4. Establish and maintain cultural, environmental education, and youth programs.
3.5. Communicate opportunities for use of tribal and public lands.
3.6. Participate in local- and landscape-level management decisions with partner agencies.

Strategy 4: Sustain fundamental ecological and cultural functions.

4.1. Maintain or restore hydrology and soils.
4.2. Maintain or restore riparian areas.
4.3. Maintain or restore nibi (water) quality.
4.4. Support specific plants or plant communities with essential requirements.
4.5. Revitalize and maintain Anishinaabe/cultural use of ishkode (fire) as a stewardship tool.
4.6. Maintain and revitalize cultural approaches to harvesting and caretaking.

Strategy 5: Reduce the impact of biological and anthropogenic stressors.

5.1. Maintain or improve the ability of communities to balance the effects of manidoonsag (little spirits).
5.2. Maintain or improve the ability of communities to balance the effects of bakaan ingoji ga-ondaadag (non-local beings).
5.3. Manage herbivory to promote regeneration of impacted beings.
5.4. Reduce negative impacts from anthropogenic disturbances.
5.5. Monitor and reduce ambient air pollution.

Strategy 6: Reduce the risk and long-term impacts of disturbances.

6.1. Alter community structure or composition to reduce risk or severity of major disturbances.
6.2. Promptly revegetate sites after natural disturbance.
6.3. Care for cultural sites after a severe disturbance.
6.4. Plan harvesting, gathering, and collecting opportunities to reduce the risk and impacts of disturbances.

Strategy 7: Establish, support, and recognize opportunities for beings or sites of concern to the community to withstand climate change.

7.1. Identify, prioritize, and maintain cultural sites and/or culturally sensitive areas.
7.2. Identify, prioritize, and maintain at-risk and/or culturally important beings or communities.
7.3. Establish places for at-risk or displaced beings outside of their normal environments (biological nests/ refugia).
7.4. Seek out or share traditional and/or cultural knowledge to inform management of sensitive or at-risk beings or communities.
7.5. Create and/or maintain access routes to traditional gathering and harvesting sites.
7.6. Work across treaty or tribal areas with partners and other tribes to manage at-risk beings.

This menu was developed by a diverse group of collaborators representing tribal, academic, intertribal and government entities in Minnesota, Wisconsin and Michigan and provides a framework to integrate indigenous and traditional knowledge, culture, language and history into the climate adaptation planning process. Learn more about this menu and others at climatehubs.usda.gov/hubs/northern-forests/topic/adaptation-menus-strategies-and-approaches.

Strategy 8: Maintain and enhance community and structural diversity.

8.1. Maintain and restore diversity of native beings.
8.2. Promote diverse generations (both elder and younger beings).
8.3. Retain biological and cultural legacies.
8.4. Establish protected areas to maintain ecosystem and cultural diversity.

Strategy 9: Increase ecosystem redundancy and promote connectivity across the landscape.

9.1. Manage habitats and access opportunities over a range of sites and conditions.
9.2. Identify additional lands for acquisition to expand the tribal land base, maintain diversity, and improve connectivity.
9.3. Reduce fragmentation to promote continuous natural ecosystems.
9.4. Maintain and create habitat corridors through restoration.

Strategy 10: Maintain and enhance genetic diversity.

10.1. Use seeds and other biological material from relatives of beings from across a greater geographic range.
10.2. Favor local beings whose traits are better adapted to future conditions.
10.3. Collect and preserve seeds from beings that are at-risk or of concern to the community.

Strategy 11: Encourage community adjustments and transition while maintaining reciprocity and balance.

11.1. Favor or restore native beings that are expected to do well under future conditions and that can help meet future needs.
11.2. Establish or encourage new mixes of local beings and/or bakaan ingoji ga-ondaadag (non-local beings) expected to do well under future conditions to meet future needs.
11.3. Guide changes in composition of beings at early stages of development.
11.4. Seek out and share traditional and cultural knowledge of potential new beings from tribal communities where these beings are native.

Strategy 12: Support a new ecosystem balance after a major disturbance.

12.1. Promptly prepare and revegetate sites after disturbance.
12.2. Allow for areas of natural regeneration to observe which beings naturally appear on the site.
12.3. Adapt significantly disrupted ecosystems to meet expected future conditions and needs.
12.4. Relocate ecosystems, beings, or cultural sites.

Strategy 13: Design and modify infrastructure and access to match future conditions and community needs.

13.1. Reinforce infrastructure to meet expected conditions.
13.2. Incorporate natural or low impact development into designs.
13.3. Reroute, relocate, or remove infrastructure to increase access efficiency and minimize harmful impacts.

Strategy 14: Accommodate altered hydrologic processes.

14.1. Plan for decreased streamflow and limited water availability.
14.2. Enhance the ability of ecosystems to retain water.
14.3. Adjust systems to cope with increased water availability and high water levels.
14.4. Respond to or prepare for excessive overland flows (surface runoff).
14.5. Adjust the location and size of forested areas to new or changing water levels.

MORE INFORMATION: *This menu of adaptation strategies and approaches can be as a stand-alone resource or within the Adaptation Workbook decision-support framework found in Swanston, C.W.; Janowiak, M.K.; Brandt, L. A.; Butler, P.R.; Handler, S. D.; Shannon, P.D.; Derby Lewis, A.; Hall, K.; Fahey, R.T.; Scott, L.; Kerber, A.; Miesbauer, J.W.; Darling, L.; Parker, L.; St. Pierre, M. 2016.* ***Forest adaptation resources: climate change tools and approaches for land managers, 2nd ed.*** *Gen. Tech. Rep. NRS-GTR-87-2. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 161 p. doi.org/10.2737/NRS-GTR-87-2.*

SOURCE: *Tribal Adaptation Menu Team. 2019.* ***Dibaginjigaadeg Anishinaabe Ezhitwaad: A tribal climate adaptation menu.*** *Great Lakes Indian Fish and Wildlife Commission, Odanah, Wisconsin. 54 p. Available at: glifwc.org/stewardship/climate-change-program#tribal-adaptation-menu.*