



In the Dunes

Towards the center of the Chippewa National Forest, there is a triangle of land where the topography is mild, yet the

slightest rise will take you on an ecological gradient from extensive swamps and bogs of black spruce and tamarack, up through northern wet-mesic boreal hardwood-conifer forests and eventually up to a northern dry-mesic mixed woodland community. Sometimes this gradient exists in the horizontal span of only a few dozen feet. Known as the Bena Dunes, this area stretches from the Leech Lake River north to Lake Winnie, and is bounded on the east and west by the communities of Ball Club and Bena. The base of the dune field is sand, deposited a long time ago by a glacier, and rearranged by winds. Covering this sand now is a lovely variety of red, white and jack pines, spruces, oaks, birch, aspen and other trees. Intermixed in special places are northern white cedar and other communities.

One of my favorite places, I make a point of spending time in the Dune field. I have come to learn that in the spring of the year, if you are running a ruffed grouse drumming survey route, not only will you census the grouse, but you will greet a myriad of returning warblers and other forest birds. You may have difficulty hearing the grouse over the frog chorus, as this area is more wet than dry; the different kinds of frogs will help you track the warming temperatures as spring moves along. You will also encounter Canada geese and their goslings, several kinds of ducks, and catch the lovely French horn call of the Trumpeter swan, totally absent from our landscape only a couple of decades ago. There's a particular bend in the road, where you can just about count on catching sight of the local nesting pair of Sandhill cranes, a species that hangs out around the wetlands and meadows that dominate this landscape. From a low of about 50 cranes in the 1940's, Minnesota's crane population has slowly recovered to about 15,000.



This fall has been distractingly beautiful in the Dunes. The grasses and sedges in the meadows and beaver ponds turn a lovely golden hue. Ringing the wetlands you'll see the red of the oaks, accenting the yellowing birch and aspen against the greens of the conifers. Look closely, and the beauty only deepens. A moss-covered stump; a forest floor with many interesting things, if you will but pause and see. Hanging from the limbs of a spruce tree, the pitted beard lichen is used by a kind of warbler known as the Northern parula to build its nest. Like most other Novembers, probably I will take a little walk with my rifle this deer season in a few places I particularly enjoy. I may or may not get that chance at a deer in this place, but that doesn't particularly matter to me on these occasions. I know I can also go into other areas of the Forest where my chance of hunting success will go way up.



The deer density in some places of the Dunes is much lower than it is in much of the rest of the Chippewa, and that affords some particular opportunities for plant communities that do not hold up well under the pressure of sustained browsing coming from relatively high deer populations. Our modern landscape, dominated by early successional forest species like aspen and birch, and occurring in relatively fragmented habitat patches intermixed with agricultural fields leads to sustained high deer populations. Although that pleases many deer hunters, it has ecological effects. And although northern deer populations fluctuate with established population goals and hunting pressure, they are generally most controlled by extreme cold and deep snow. Climate change has already moderated winter in northern Minnesota. The prediction is for continued warming in winter, and shorter periods of winter snow pack. The controlling influence of winter on our deer population is likely to continue to decline.

But in the areas that I sometimes seek out, I will find some northern white cedar communities, which bring a great deal of interest. Cedar provides important thermal cover for deer during difficult winters. It provides critical hiding cover for snowshoe hare, one of the "keystone" prey species of northern ecosystems. Northern white cedar communities provide habitat for a number of rare plant species, and some interesting forest birds.

Where I am going, I will see healthy Canada yew populations, where the plants have attained their normal size and successfully reproduce. Elsewhere on the Chippewa, as across much of the yew's range, deer browse keeps this plant dwarfed in stature, reduced in number, and unable to reproduce.

Canada yew suffers from the same challenge as does northern white cedar, when it comes to sustained deer browsing. On the Chippewa National Forest, presently less than 1% of our northern white cedar is younger than 40 years old. Extending well beyond the Chippewa, there is an even more dismal picture. Of the nearly 116,000 acres of cedar across the North Central landscape, none of it is classified as being less than 40 years old. That means our northern white

cedar community is not successfully sustaining itself. We are losing it. Seeking ways to restore health to northern white cedar communities is part of the Chippewa's overarching direction, provided by our forest management plan. Part of our Forest Plan is to restore vegetation communities that are greatly diminished in quality or extent on the landscape.

Elsewhere in the Dunes, large blocks of mature black spruce and tamarack are providing a home to a shy, retiring bird known as the Connecticut Warbler. This long-distance neotropical migrant takes one route on its way up from South America where it winters, up along the Mississippi Valley to the northern boreal forests where it breeds. There it makes a nest on or near the ground, perhaps in sphagnum moss or within thick undergrowth. In the fall, this bird heads east, then follows the Atlantic coast southward, apparently making a non-stop trip across the Atlantic to move between the southern U.S. and South America. The North American Breeding Bird Survey indicates a population decline for this species of 62% over the past 50 years. The Connecticut Warbler is on the 2016 State of North America's Birds Watch List, which includes bird species that are at most risk of extinction without significant conservation actions to reverse declines and reduce threats. Over 20 years of forest bird population monitoring on the Chippewa reveals that the Connecticut Warbler is declining on the Forest at a serious rate of about 7% a year. Paying special attention to the needs of this species as we plan our land management activities is part of the Forest's mission. Our Forest Plan directs us to provide conditions across the landscape to sustain viable populations of native species, and improve habitat for sensitive species.

Sustaining viable populations of native species can be a challenging task, and will only become more so in the face of climate change. Over 300 bird species are predicted to have significant range reductions over the next century due to direct effects of climate change. Adding to this will be the indirect effects including changes to habitats, which will change the suitability of our forests, and is predicted to lead to widespread population declines in many forest bird species.



Couple that with the backdrop that bird populations throughout the U.S. have already been affected by habitat degradation, fragmentation, and loss; climate change will exacerbate these impacts on birds.

Adaptive forest management could mitigate climate change effects, by promoting forest resilience, preserving forest composition, and increasing adaptive capacity. Joining efforts with our partners and neighboring landowners to conserve and protect critical habitats will be imperative in our effort to deliver on the Forest Service promise that is our mission: to sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations.

I am privileged to work for an Agency that likes to talk of Courageous Conservation. The kind of conservation that seeks a sustainable future, and leaves a legacy of restoration. These things don't happen easily, and they

don't happen overnight. It requires both a view of the horizon, and an understanding of the past. It takes patience, and incredible persistence to further such a cause. And also, a healthy dose of that brand of courage so well expressed by a familiar quote:

“Courage doesn't always roar. Sometimes courage is that quiet voice at the end of the day saying, “I will try again tomorrow”.



by Kelly Barrett, Wildlife Biologist
Chippewa National Forest