WDNR Sharp-tailed grouse Advisory Committee Meeting
June 8, 2021
Zoom Meeting
9AM – 12:30 PM

- Attendance:
    - Bob Hanson- DNR WM
    - Mike Gullickson- WI Conservation Congress
    - Aaron Seitz DNR Wildlife Management (WM)
    - Alaina Gerrits- DNR WM
    - Nancy Christel- DNR WM
    - Eric Peterson- DNR Forestry
    - Chris Pollentier- DNR Office of Applied Science
    - Jon Pauli- UW Madison
    - Alexis Grinde- UW-Minnesota Duluth, Natural Resources Research Institute
    - Kevyn Quamme- Wisconsin Wildlife Federation
    - Dave Evenson- WI Sharp-tailed Grouse Society
    - Mike Amman- WI County Forests Association
    - Peter David- Great Lakes Indian Fish & Wildlife Commission
    - Dan Eklund- USFS Chequamegon-Nicolet National Forest
- Introductions
- Jon Pauli- Translocation of MN birds to Moquah Barrens and Completed Genetic Analysis
    - Conservation genetics analysis – how successful translocation was, from a genetic standpoint. The main goal of translocation is population augmentation
    - Can we transfer methods used for martens to develop tools to measure translocation success of STGR?
    - Brief primer on analysis of feathers
        - Collected feathers from 2016-2018 from translocated grouse, looking at skin cells on feathers which hold DNA, not the body of the feather
        - Use the template DNA to create microsatellite markers, each bird carries slightly different variations of the same genome- the differences allow us to infer things about the population
        - Different individuals will have different sequences in single markers this allows analysis to see how similar/dissimilar individuals are
        - Can answer questions like how genetically diverse is the population, how much genetic variation did the translocation introduce?
        - Genetic inbreeding can lead to deleterious alleles and other defects, but translocations can also introduce too much variation which can also have negative impacts
    - Source vs Translocated bird analysis to measure success of genetic diversity
        - At coarse view (allele level) translocation was a success as most alleles were captured in later years

        - Looking at individual markers- overall the translocation did an effective job capturing different alleles per marker
        - Heterozygosity as a metric of diversity- we all carry two versions of alleles, if they're the same we're homozygotes- which can be bad if it is a deleterious allele, heterozygosity represents two different alleles at the same loci
            - Heterozygosity was high in source population and didn't differ year by year, relatively solid, no marker was wildly different from another- acceptable levels of heterozygosity
        - Overall translocation was effective in inoculating regional genetic diversity
        - No evidence of inbreeding occurring
    - However, structure can be introduced- a self-defeating effect.
        - Appears to be only 2 genetic clusters introduced
        - These genetic clusters would signify high variation that isn't beneficial to the population and overall genetic diversity
        - There wasn't strong structure introduced in the translocation- this is great news and means genetically the translocation was a huge success
    - Overall, the translocation was a success, captured natural genetic variation of the source population without adding unnecessary structure- but we don't know what this means on the translocation site. The full effects of population augmentation are still coming to light.
        - For example, with martens, even though genetically translocations were a success, on the ground they were not successful (mating, demography, mortality, persistence?)
    - Any plans to monitor the population via genetics over time?
        - A lot easier to use markers for analysis in the future because baseline data exists
        - Possibility for future research, nothing on the horizon right now
    - Tracking individual animals that were translocated can also provide highly detailed information on genetics- you don't have to radio collar every animal to track them over time
        - Genetic inbreeding can take off very quickly- over the course of a few years in the case of wolves on Isle Royale
    - Feathers are currently being collected at leks during spring surveys for genetic analysis in the future
        - Important because a missing piece of the puzzle right now is we don't know what the resident population looks like currently
        - Can we look at feathers from harvested birds? These feathers were lost along the way some where and have not been analyzed
        - Males and females can be identified easily via genetic analysis of feathers
    - Genetic markers were able to be collected from all samples, source population information was derived from reports by Charlotte Roy, MN DNR

    - Can you extrapolate how many breeding females there are in a population by looking at feathers from breeding males? Yes, kinship analysis
    - If we find stray birds (e.g. 70 miles away in Rusk co.) would it be beneficial to relocate them again to appropriate habitat where other birds exist? These birds in Ladysmith are all but gone- should probably accept the "null hypothesis" with these birds and hope they will eventually migrate back
    - Sharp-tails in the Dakotas are now hybridizing with prairie-chickens and Minnesota is also no longer going to be an appropriate sources for STGR translocations
    - May be beneficially to pluck feathers from live birds next year to make sure you know the source and to map resident genetics- will help us show our outcomes
- Alexis Grinde- Sharp-tailed grouse pilot project
    - Evaluate habitat-use of STGR in the BBMA and surrounding areas to inform landscape-level plans
    - Research Objectives:
        - Assess lek attendance, nesting habitat, juvenile habitat use, survival
        - Assess movement patterns to quantify habitat use on an annual basis
        - Provide habitat management prescriptions to maximize grouse productivity
    - Spring 2021
        - Set traps, lek surveys, affixed satellite solar-powered tags to STGR
        - Send GPS fixes 3 times per day
        - Spent a lot of time picking the best tags, reduced handling time, proper material to be quick and efficient
        - Attached 6 tags on males- 3 at Moquah, 2 at Muck Lake, 1 at Halfway rd.
        - Attached a cell tag (Druid) to a female at Muck Lake
        - Average daily distance for one male = 250-500 m during lekking season, started moving more in late May
        - Conducting monthly habitat surveys to help develop detailed habitat management prescriptions
        - Low lek attendance, few females, looking to refine techniques for future field seasons
        - Continuing to monitor males and conducting veg surveys- roosting, lekking, daily
        - Potentially going to trap males in the fall at leks
        - Need to seek additional funding to be a long-term study
    - How accurate are GPS points?
        - Trying different models of tags to see which are best
        - Cellphone tags are lighter, can be downloaded remotely, only last about one year, less expensive, less precise locations
        - Satellite tags are more precise, longer battery life but unable to download remotely

    - Why was trapping unsuccessful/less successful than anticipated? Are the birds moving to new leks?
        - Across all 3 leks observations were down, weather and winter conditions could have been hard on STGR- lek survey numbers down everywhere
        - Early spring green-up may have led to late start to trapping
        - Winter was probably harder because of less snow and inability to snow roost
- Bayfield county barrens update
    - Airport rd. lek- set to trap there and only 2 birds present this year, moved project area to Muck Lake, lek attendance reduced all year
    - Roller chopping may be causing birds to move leks accordingly as habitat improves – timing of the roller chopping may have affected trapping success
    - Flagged areas to mow openings and put up game cameras to see if fall trapping can occur, could also use bird dogs to try and catch males
    - ~400 acres of roller chopping on Barnes barrens- enhanced postage stamp quality
    - Spraying 150 acres this month to prep burning for next spring
    - Could hopefully see a secondary lek open up
    - Bass lake barrens- 400 acres cut so far on west side of property- stepping stone between Barnes and private grasslands to the north
    - Using turkey stamp funds to roller chop and spray acres on Bass Lake
    - Hopefully starting the STGR plan will open up funds for STGR research via research priorities
    - Would benefit staff to have a field tour of GPS locations and other managed properties to brainstorm and learn
- Bob Hanson- Annual lek shapefiles, STGR plan, 2021 lek survey data, PVA with harvest
    - Digitized all available historical lek survey data and created excel master file with all informational data
    - Data from 1949-2021 compiled into historical map
        - Can overlay with historical fire locations and other spatial data- gives us insight into patch sizes for management based on what they historically responded to
        - Potential for meta data research analysis of shapefile data
    - Updating the sharp-tailed grouse management plan- team should be assembled in next six months- what are some issues
        - First, present to STGR to see what components the NRB wants in the plan (e.g. implementation plan, identification of issues such as ways to recommend harvest level, use of spatial data, change harvest units?)
        - Looking to evaluate “acceptable level of risk” willing to take when implementing a harvest season, based off of population viability analysis- may not be an exact number, no additional analysis will lead to a black and white number or decision will be up to the purview of the committee

    - Related to this- could create “minimum thresholds” if the population reaches x number, we can do this, if it drops below x number, we can do this
- If committee has more ideas for issue identification, please contact Bob with ideas
- Other issues/topics submitted by the committee below:
- We need to add more specific management prescriptions- e.g. exact acreages tied to exact population numbers to help implement funds for management outside of existing habitat
- We should look at burn season timing to optimize prescribed fire operations, is spring the optimal time to burn, with nesting hens for example?
- Refine and streamline surveys, provide consistency – factor in female counts, they should be represented somehow
    - Other issue with surveys- high counts in April and lower counts in late April due to predation or other circumstances. Can we factor in or “average” differing counts throughout a season?
- Need for analysis of harvest season structure and timing
- Should look at minimum size of managed lands needed- to provide dispersal between core populations- could be gathered from a meta data analysis of other STGR studies
- A thorough review of historical data is needed to identify why declining trends are occurring
- How is climate change affecting STGR? Who are the experts we can reach out to on this? Should we be changing management strategies annually based on the prior years weather?
- Make sure all uses are represented- bird watching, dog training, hunting, etc.
    - But make sure we address threats such as increased UTV use, dirt bikes
- May be beneficial for committee members to review ruffed grouse plan, there are many research priorities and management objectives that may be a helpful framework for starting the sharp-tailed grouse plan
- Continue funding for Pauli research or have it listed as a priority, add to base of research analysis
- Add more funding for Alexis’s research as well to help build predictive model and expand the project on the landscape level- Namekagon should be added
- DNR needs to be aware of citizen resolution to eliminate leash law during avoidance period and also the resolution asking for a research study to see how dog training and trialing impacts nesting birds

- Discrepancies in dog training/trialing regulations across the state should be reviewed and reorganized by the department, Wildlife Management should take the lead.

- 2021 lek survey results
  - Overall, 20% decrease in number of dancing males from 2020 to 2021on managed properties
  - Namekagon is the only property that did not see a decrease
  - On non-managed properties there was a 43% decrease in STGR observed
  - On Rusk County private lands in 2021, 1 dancing male was observed
  - Total percent decreased on all properties in 2021 = 26%
  - Field note- may not be getting a complete consensus, reports from neighboring landowners may suggest some grouse are not being detected- roaming surveys may be vital
  - Plan may give us an opportunity to revamp survey protocol to make sure equal effort at sites is occurring
  - On Namekagon: the 29th 50 males and 26 females detected on second best day, on best day on the 22nd, 57 males and 9 females- large discrepancies between "prime days"
- Discussion on harvest season
  - GLIFWC- not all the birds produce, only a select few, and if you remove the "wrong" individual that could have a lasting effect on future breeding seasons.
  - WWF- With decreased lek abundance of males it may be too risky to have a hunting season
  - WSTGC- Hunting birds in WI is special and a small number should be allowed the be harvested at Namekagon since numbers are holding steady
  - DNR- Part of Douglas co. WA would be included in Namekagon Barrens Management Unit, one lek would overlap that unit for harvest
  - DNR- harvest success was 44% at Namekagon last harvest season, new lek close to main drive of the property means hunters wouldn't have a hard time harvesting birds
  - USFS- last year we didn't have a hunting season and numbers were better, numbers are worse in 2021 so how can we entertain a hunting season? It's hard to argue compensatory vs additive mortality at this point- we should not have a hunting season if we are on a continuous decreasing trend. If we do have a hunting season it should be short and the third week in October to influence success rates, small number of permits. Hunting is not a biological neutral in a population of this size
  - DNR- numbers are holding steady at Namekagon, would like to see them branch out more. PVA shows us that we should not have a harvest season
  - DNR- models were built off of data from Namekagon, using our best sub-population for data source and it still shows high risk of extinction- no

data at this point is compelling enough to have a harvest season, the risk is way too high

- WCFA- is there a number of male grouse that will be a green light for us to have a harvest season? DNR- not at this point, there is no magic number that we know of
- DNR- management plan is based off of compensatory mortality in allowing a harvest season, the PVA is suggesting evidence it is an additive mortality in a population of this size- plan may be outdated, needs to be updated
- USFS- as an example, we don't hunt prairie chickens and they have an even larger population. Maybe once we see 100 birds on each property, we could start to see harvest seasons occurring or a stabilizing trend in the population
- WSTGS- in 2011 when plan was adopted there were only 21 males observed and we have had several hunting seasons after that, now there are more males present
- WCFA- bird hunters still have the opportunity to train their dogs on STGR even if they are not actually harvesting birds
- DNR- receive positive feedback when seasons are not occurring in recent years and also calls from those with reservations when hunting seasons do occur – most hunters want to make sure it is biologically responsible to do so. But other hunters call who believe we should be harvesting them as well.
- Vote on harvest season:
    - No season- Dan Eklund
    - No season- Mike Amman
    - No season- Chris Pollentier
    - No season- Eric Peterson
    - Yes season- Dave Evenson
    - No season- Nancy Christel
    - No season- Mike Gullickson
    - No season- Peter David
    - No season- Alaina Gerrits
    - No season- Kevyn Quamme
    - No season- Bob Hanson
- Committee voted 10-1 to not have a harvest season in 2021

- Partner updates
    - Dave Evenson- WI STGS meeting on August 21 and 22 at Crex, a memorial for Mr. Everard will be dedicated that day
    - Peter David- heading towards retirement by end of calendar year, going to focus on Wolf issues. New person will be moving into the position soon.

- Nancy Christel- 1400 acres of habitat creation will be implemented with the last timber sale by end of summer. Birds are moving over, no leks yet. Friends of Namekagon Barrens has been working on an Auto tour, would like to put a sign on east lek that identifies it as a dancing ground- concerned with overuse by tourists or bird trainers, Committee's thoughts? Nancy suggested mentioning in tour but avoiding sign. Chris- we explicitly do not define lek sites for prairie chickens so there are concerns with doing it for STGR, even when writing reports we don't give exact locations.