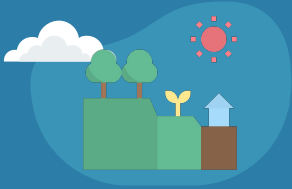


# EVALUATING BIODIVERSITY SUSTAINABILITY AT NORTHERN MICHIGAN UNIVERSITY

By Hayden Croff



# DATA COLLECTION



**LAND OWNED OR  
MANAGED BY NMU**



**ENDANGERED &  
VULNERABLE  
SPECIES**



**PROTECTED AREAS  
OR AREAS OF  
BIODIVERSITY  
IMPORTANCE**



**SUSTAINABILITY  
PLANS, PROGRAMS  
& STUDENT  
PROJECTS**

# DATA ANALYSIS



*Figure 1 – Dead River Community Forest (Image credit: Upper Peninsula Land Conservancy)*

- ❑ Compare and contrast geospatial data using maps
- ❑ Review NMU plans, programs, and student projects to identify geographic area of focus, purpose of implementation, and predicted impact



# RESULTS



# LAND ASSESSMENT

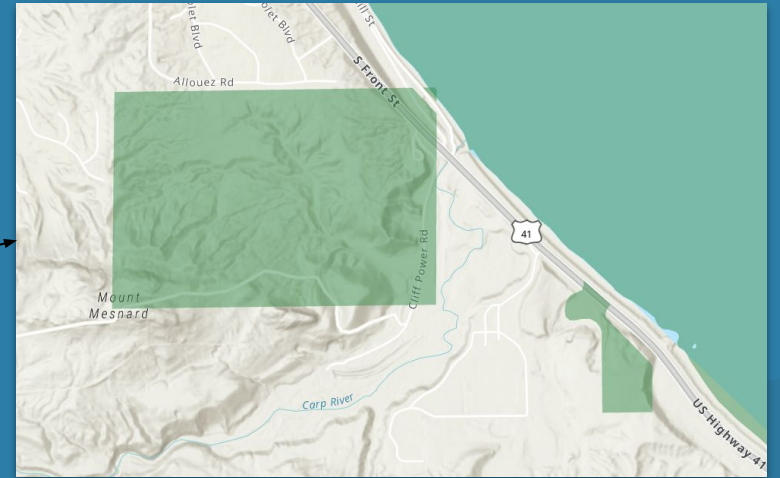
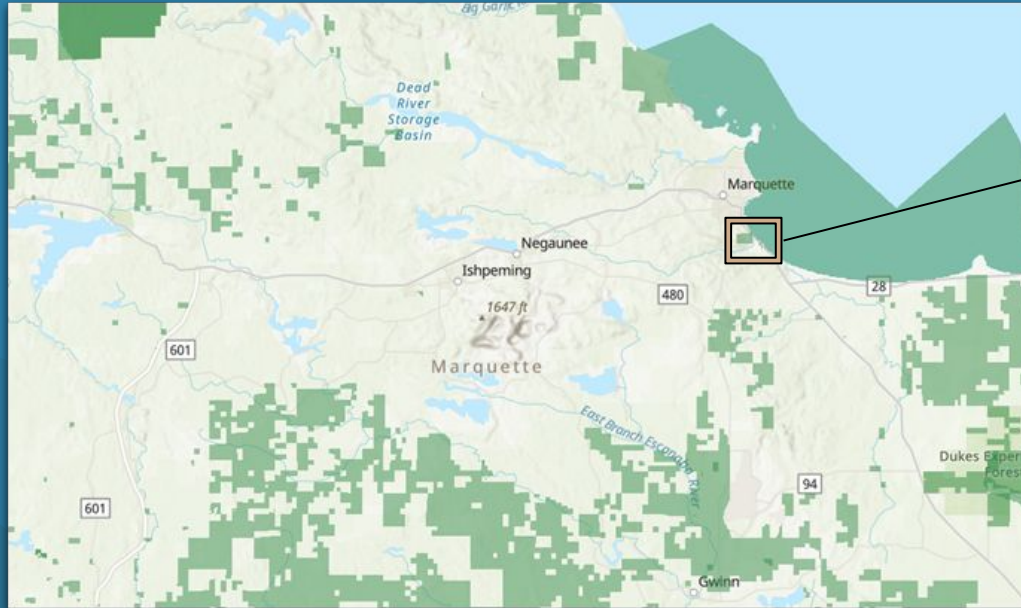


Figure 2 – WDPAs Legally Protected Areas of Marquette County (Source: World Database of Protected Areas) and localized zoom-in of NMU protected property. Protected areas are highlighted green.

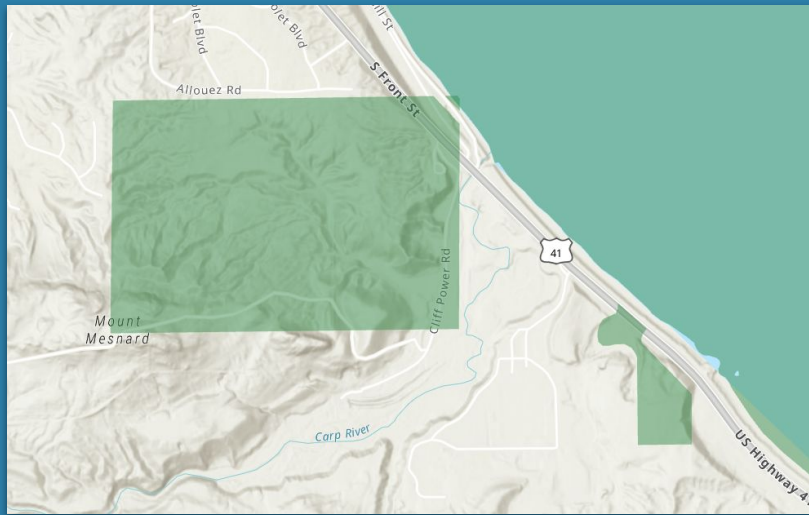


Fig. 3)

*Figure 3 - Selection of WDPA Legally Protected Areas Map containing NMU property (Source: World Database of Protected Areas)*



Fig. 4)

Note - Aerial Image/background is provided by ESRI - Accuracy is not verified by NMU

*Figures 4 & 5 – NMU Remote Properties (Source: Northern Michigan University)*



Fig. 5)

# SPECIES HABITAT ASSESSMENT



Figure 6 – Gray Wolf (*Canis lupus*)  
(Source: U.S. Fish and Wildlife Service)



Figure 7 – USFWS  
Gray Wolf Habitat  
Range (Source: U.S.  
Fish and Wildlife  
Service)



Figure 8 – Northern Long-eared Bat (*Myotis septentrionalis*) (Source: U.S. Fish and Wildlife Service)

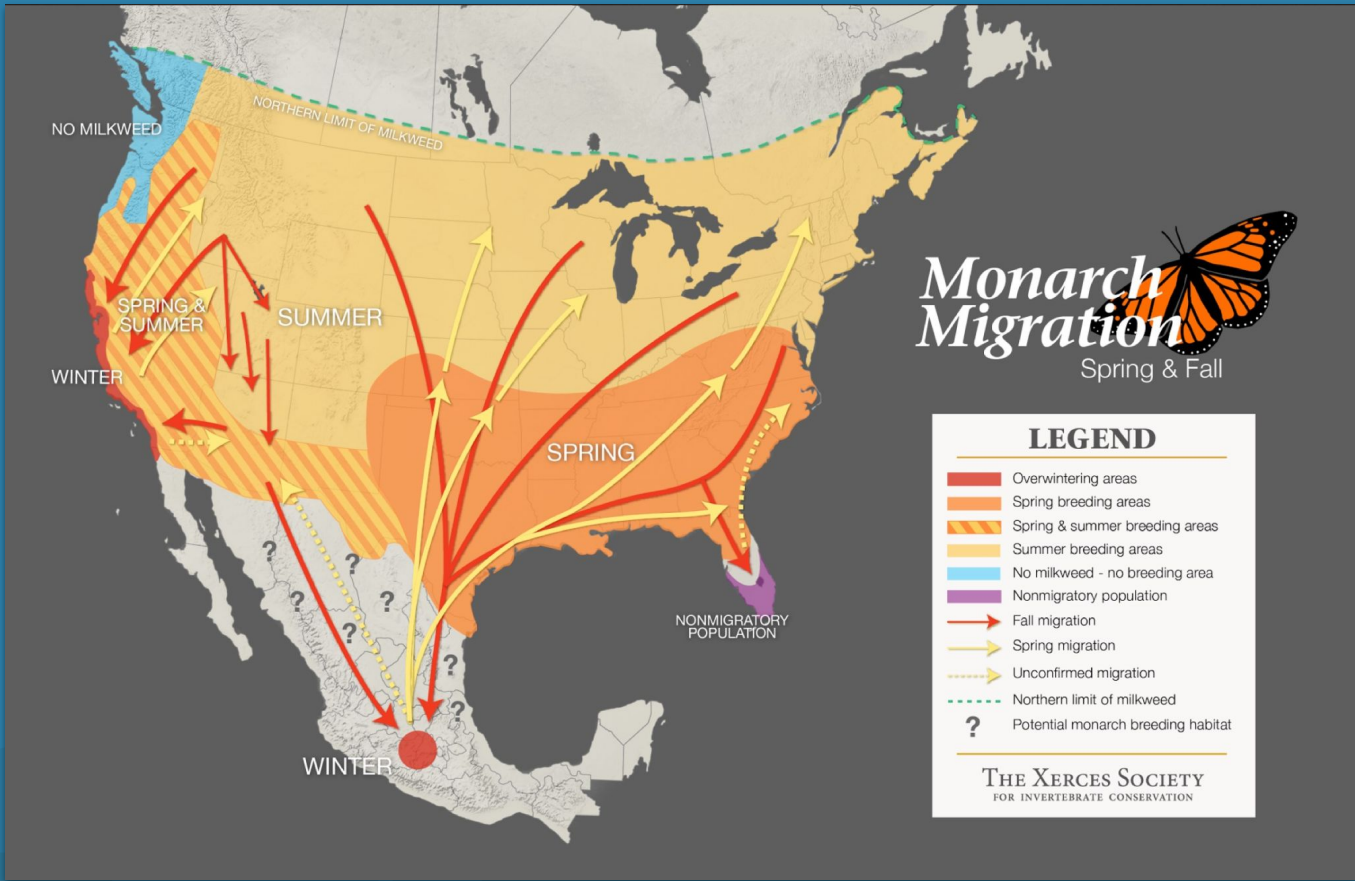


Figure 9 – USFWS Northern Long-eared Bat Habitat Range (Source: U.S. Fish and Wildlife Service)





Figure 10 – Monarch Butterfly (*Danaus plexippus*) (Image credit: Morgan Heim / Day's Edge Productions / WWF-US)



# SUSTAINABILITY PLANS, PROGRAMS & STUDENT PROJECTS

No Mow Zones

NMU Protected Area

Dead River Community Forest /  
NMU Partnership Projects

Research Apiary

Clover Lawn and Rain Garden



*Figure 11 – A frame of honeybees in one of the hives at the NMU Apiary (Image Credit: Northern Magazine)*

# FUTURE RESEARCH

Conservation opportunities on NMU property.

Habitat observations.

Native species surveys.



*Figure 12 – Aerial photo of NMU main campus (Source: Northern Michigan University Facilities)*

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