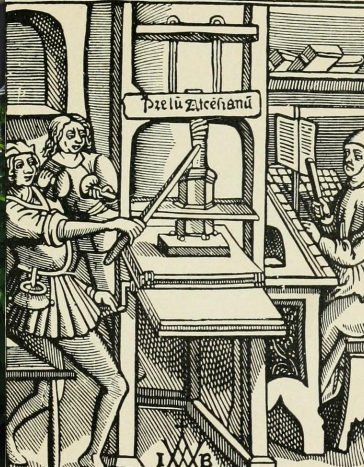
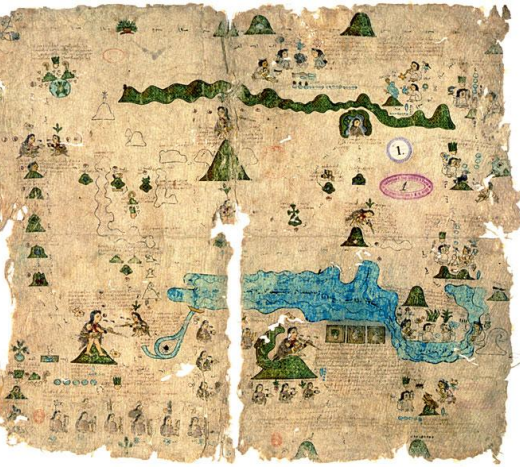
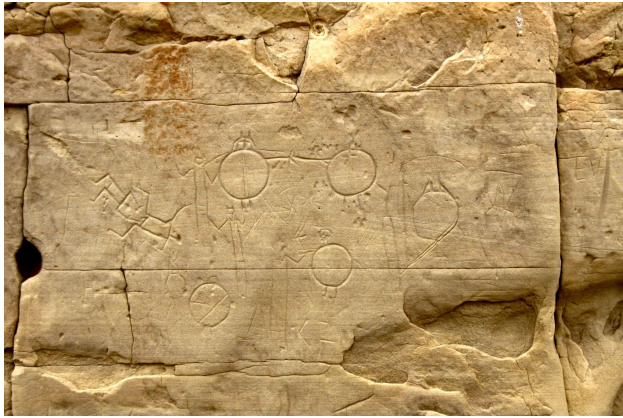




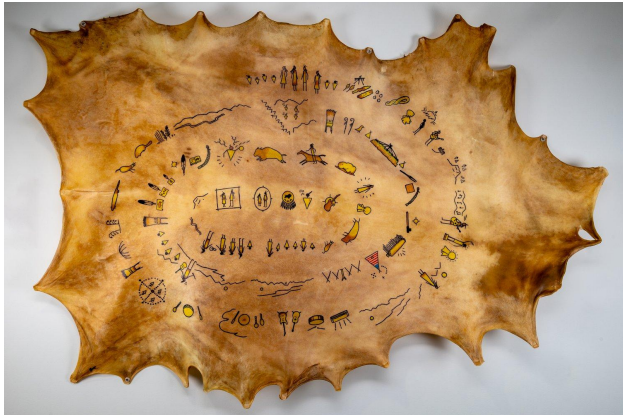
# Introduction to Papermaking with Plants

materials, processes, and helpful resources from a sustainable and ethical perspective





Petroglyphs at Aisinai'pi/  
Writing-On-Stone



Winter count, from the Galt Museum

## Brief History Pre-Paper

- Writing surfaces included clay, rock, tree bark, animal skins, bone, long leaves such as palm leaves
- Many plants used for cloth or building material also used for paper
- Papyrus (*Cyperus papyrus*) was used in Egypt as early as 3,000 BCE.
- Early parchment referred to animal skins rubbed with lime- used throughout Europe for centuries



# Bark-based Paper

- Tapa was widely used through Southeast Asia and in Peru, made with mulberry bark- used as paper but also as cloth fibre
- Amate used throughout Mexico- made from bark of ficus species
- A sheet of paper is made by layering pieces of processed bark and beating the layers together

Tapa cloth



Amate paper, Amate paper Cut-out

# Paper Using Pulped Plant Fiber



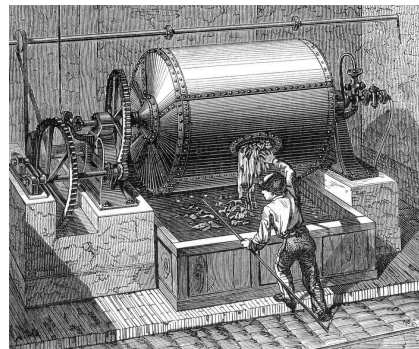
- Most plant fiber was used for textile purposes first, so papermakers started collecting old cloth rags, then soaking and beating fiber into a pulp to form paper. This spread throughout Asia and the Islamic region to the rest of the world
- Machinery developed for beating the pulp- human and animal powered paper mills
- Way of using wood pulp was developed in the mid 1800s- didn't need to recycle rags anymore



Rag picker in Brooklyn

# DIY vs. Industrial Processes

- Industrial paper making used stamp mills to beat fibers, then hollander beaters were developed- more efficient
- DIY versions- blenders, beating plant fibers with a stone, retting (controlled rotting)
- Addition of chemicals such as soda ash to break down cellulose in fibers- can experiment with and without



Hollander Beater

DIY Vat



# Plants! (Non-wood sources)

Commonly used plants for paper:

- Gampi, Kozo, Mitsumata
- Palm, Banana, Pineapple Leaves
- Day lily, Iris, Cattail, Yucca, Bamboo, Corn
- Flax, Hemp, Jute, Sisal
- Types of grasses and cereal straws
- Anything used for fabric/weaving- probably good for paper too



# Guidelines for Foraging

(Adapted from Robin Wall Kimmerer's book *Braiding Sweetgrass*)



- Never take the first one you see
- Plan ahead what you are looking for
- Be considerate- only take what you are sure you will use
- Share what you have and give back when you take- leave offering, prayer, plant seeds, continue learning
- Learn about local customs- in some sacred places, it is taboo to take things
- Remember the cycles! It will bloom again

# A Deeper look at Cattails

Typha= Genus

Typha Latifolia= Broadleaf Cattail  
\* Native to North America

Typha angustifolia= Narrowleaf  
Cattail \* Thought to be introduced  
from Europe

Very closely related, in fact  
sometimes they hybridize!

How to tell them apart? Narrowleaf  
cattail, other than having narrower  
leaves, has a clear distinction  
between the male and female flowers



Note: Although some people call narrowleaf  
cattail introduced and/or invasive, its  
evolution is still being researched



# Making paper with cattail fluff



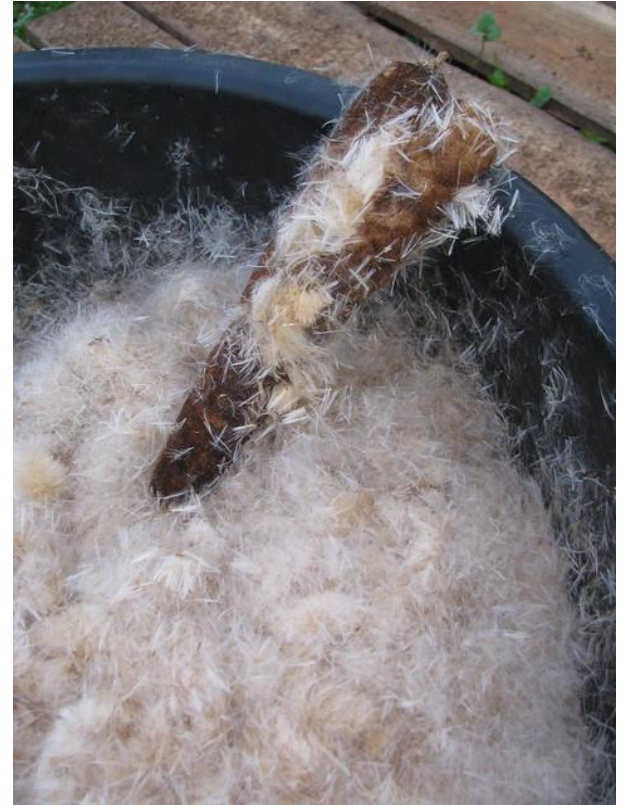
Why the fluff and what is it?

- The fluff on cattails is the mature seeds ready to disperse in the wind. It is abundant as cattails are very competitive plants, and doesn't require a lot of energy to break down compared to leaves or stalks
- Gather in the fall/winter, put fluff into a breathable bag (paper or grocery bag) so it doesn't mold
- Bugs make homes in the fluff- leave bag slightly open outside for them to escape

# Preparing our cattail fluff

Important: Work in a well-ventilated place and do not use the same equipment you use for cooking food

- Put fluff in a pot with water- fluff won't mix with water easily so just slowly push it underwater
- Bring to a boil and then simmer for about 1 hour
- Drain water, rinse fluff with cold water, pick out any leaf material or dead bugs
- Use a blender to further break down material





## Setting up the vat

- Fill vat (metal or plastic tub) with water, enough to fully submerge mould & deckle
- Place small amounts of processed fluff into vat, remove any large pieces, should be a slurry with about 1:10 ratio of fluff to water (may take a few tries when pulling sheets to get right consistency)





# Pulling sheets

- Gently stir the slurry with your hand so fluff is well dispersed
- Place mould and deckle in the slurry and gently move it forward and backward so fluff collects on the screen
- When you feel there is enough fluff on the screen, slowly lift it out of the vat, gently moving it to and from so fluff interlocks
- Let water drain from the screen

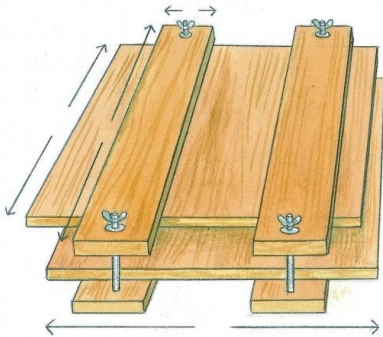
This may take some practice! If it doesn't turn out quite right, just rinse material off your screen back into the slurry and try again





## Pressing sheets

- When most of the water has dripped off, remove the deckle and carefully lay the mould with the paper side down onto your press or towel, pat the screen to stop the paper from sticking to it and slowly lift up the mould
- Now you can press the paper to remove more water- make sure to use surfaces that the paper won't stick or bind to
- You can also lay a towel or shammy over the sheet and gently press your palms down to soak up water from the sheet



# Drying and storing

- Drying time depends on how much water is still in the paper. The more water in the paper, the more it will buckle as it dries in the open
- If the paper is still quite wet, you may want to store it between absorbent towels under some heavy books. The wetter it is, the more towels you want between sheets
- If less wet, you can store pages stacked on top each other to save space







## Snippets of advice

- Learn by trial and error
- Practice using materials like egg cartons to make paper first till you get a hang of it
- If it doesn't turn out the way you want, re-use it! Just wet it, blend it again and you have pulp



# Resources for learning more

Making Amate paper- video from the Getty Museum

[https://www.youtube.com/watch?v=OF8eZTo9WB4&ab\\_channel=GettyMuseum](https://www.youtube.com/watch?v=OF8eZTo9WB4&ab_channel=GettyMuseum)

Making Hanji- Artist Steph Rue, video from Asian Art Museum

[https://www.youtube.com/watch?v=vVwBEmUb820&ab\\_channel=AsianArtMuseum](https://www.youtube.com/watch?v=vVwBEmUb820&ab_channel=AsianArtMuseum)

Great doc about artisans practicing traditional paper making, from Business Insider, Still Standing series

[https://www.youtube.com/watch?v=t7mp4B5JBBo&ab\\_channel=BusinessInsider](https://www.youtube.com/watch?v=t7mp4B5JBBo&ab_channel=BusinessInsider)

Cute doc about the Hayle Mill, England from the 1970s

[https://www.youtube.com/watch?v=Xs3Pfw0Itto&ab\\_channel=SimonGreen](https://www.youtube.com/watch?v=Xs3Pfw0Itto&ab_channel=SimonGreen)

## Resources for learning more

Ray Tomasso- The Art of Paper, talk at CU Boulder

[https://www.youtube.com/watch?v=PW2RDMVa-CE&ab\\_channel=CUBoulderLibraries](https://www.youtube.com/watch?v=PW2RDMVa-CE&ab_channel=CUBoulderLibraries)

Making paper with cattails, video tutorial from James Leonard

[https://www.youtube.com/watch?v=YeCdTE4sTjc&ab\\_channel=JamesLeonard](https://www.youtube.com/watch?v=YeCdTE4sTjc&ab_channel=JamesLeonard)

Book: The Organic Artist, by Nick Neddo

Book: Papermaking with Garden Plants and Common Weeds, by Helen Hiebert

+ The Papermaker's Companion, by Helen Hiebert



Feel free to reach out to me  
with questions too!

Email: [laurelscott06@gmail.com](mailto:laurelscott06@gmail.com)

Instagram: [@prairiedirt](https://www.instagram.com/prairiedirt)

