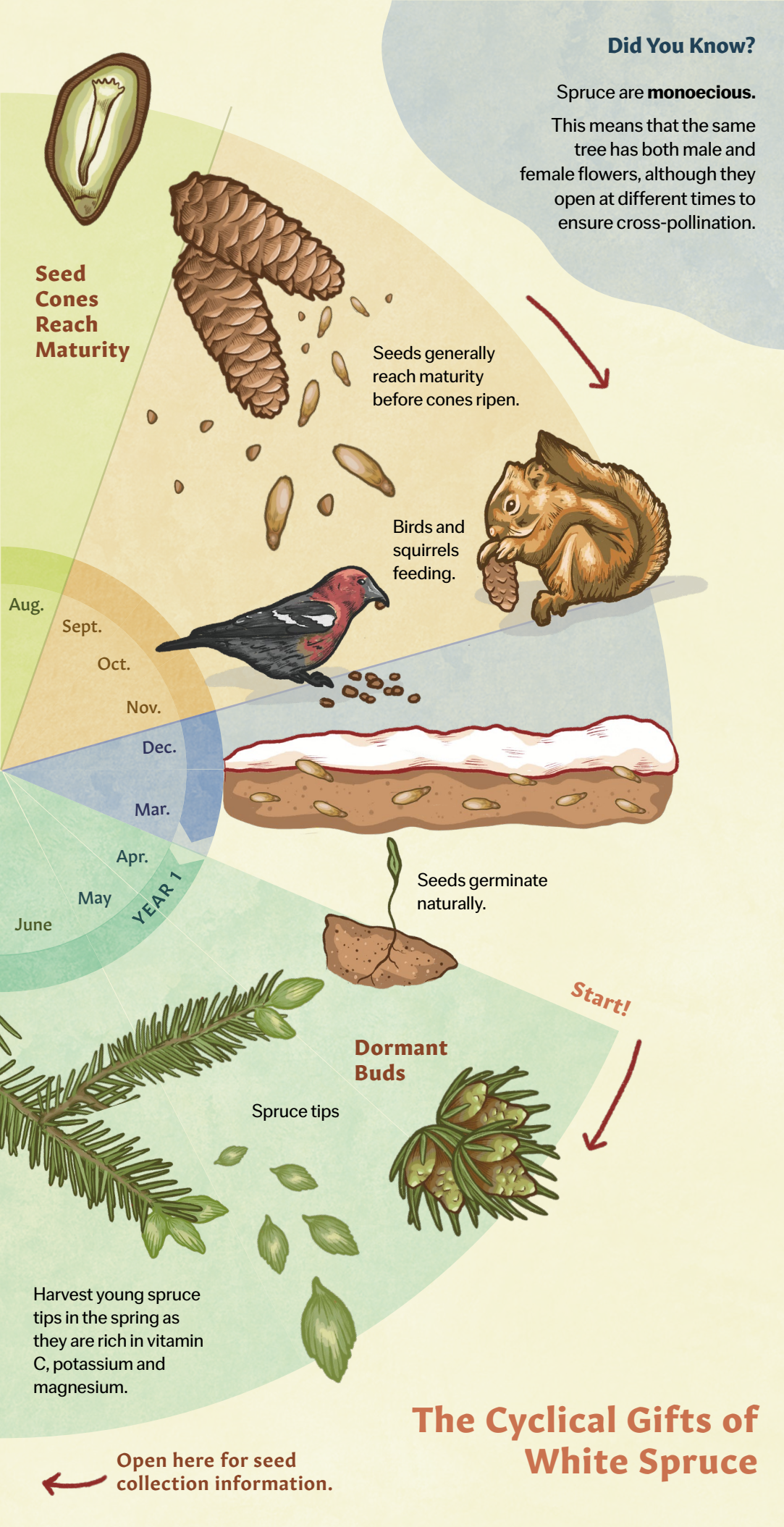




National Tree Seed Centre

Canada's National Tree Seed Centre aims to safeguard Canada's forest genetic resources by preserving the forest biological diversity that underpins the sustainable development of Canada's forests.

Services

-  **Training and technical support** for local seed collection, processing, testing and storage.
-  **Seed testing services**, including digital X-ray, weight, moisture, germination and research.
-  **Seed sourcing advice** for research and planting projects requiring climate smart seed.
-  **Long-term storage space** for reproductive material of rare, threatened, and difficult-to-store tree and shrub species.

Indigenous Seed Collection Program

This Indigenous-led program focuses on species that are of cultural, medicinal, spiritual, and economic importance to Indigenous communities. Stemming from the 2 Billion Trees initiative and delivered by the National Tree Seed Centre, the program promotes seed collection capacity and development within Indigenous communities across Canada.

Resources

For further resources, visit our website:
<https://natural-resources.canada.ca/science-data/science-research/research-centres/national-tree-seed-centre>

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This pamphlet series is lovingly dedicated to the enduring legacy and cherished memory of Melissa Spearing, whose spirit, compassion, and unwavering dedication continue to inspire all who follow in her footsteps.

Aussi disponible en français sous le titre : Semences et histoires: *Picea glauca*

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National Tree Seed Centre, Canadian Forest Service, Fredericton, New Brunswick.

Contacts

National Tree Seed Centre
ntsc-cnsf@nrcan-rncan.gc.ca
1(506) 452-3289

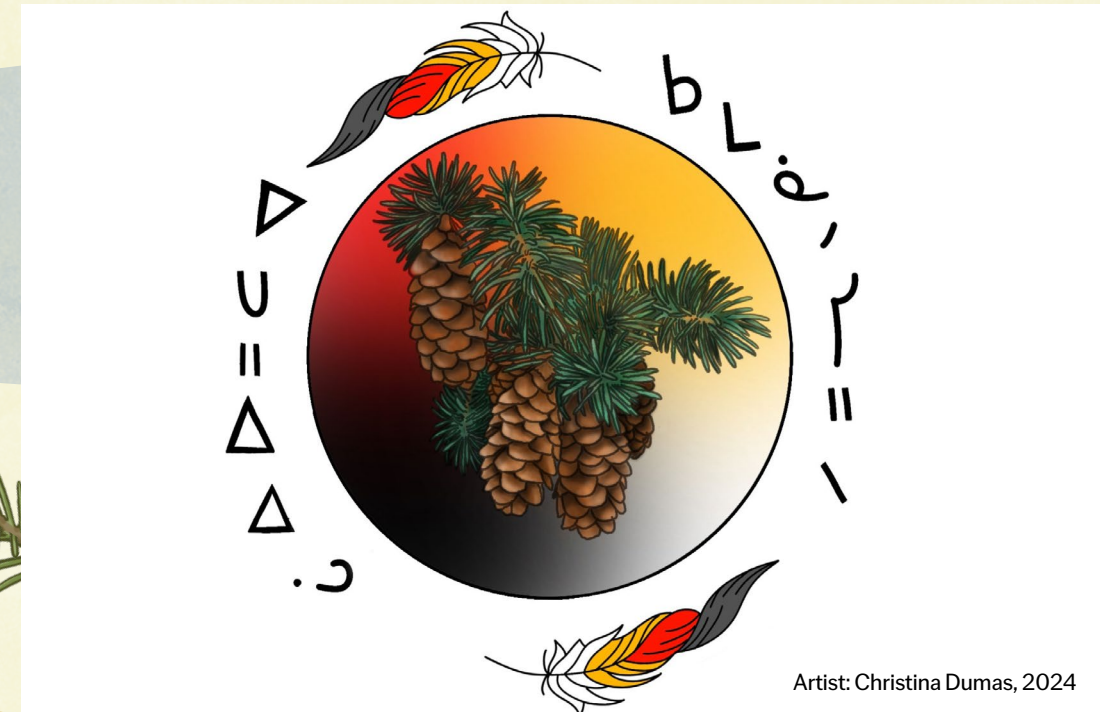
Indigenous Seed Collection Program
iscp-pcsa@nrcan-rncan.gc.ca
1(506) 452-3289

Seeds and Stories

Picea glauca

wapiskimnahik, eyinatik, minuhik, mīnahik, sī(h)ta |
minaiku | mina'ig, gaawaandag | gawatgw | kawatoq
| mzazesso, mskask | T'SU, ts'iivii, ts'iwa | ts'uchogh |
épinette blanche | tsáxaž | La nipint blann | white spruce

Within Indigenous Knowledge Systems, trees are recognized for their spirit and revered as relatives. They are deeply woven into the fabric of life and connected to the stories of all beings. As we learn from these stories, we are reminded of the importance of sustaining these relationships through mindful and respectful practices. Through understanding their teachings, we are called to protect and nurture these living relatives, ensuring that their gifts continue to enrich future generations.



Artist: Christina Dumas, 2024



White Spruce Branch



White Spruce Cones



White Spruce Tree



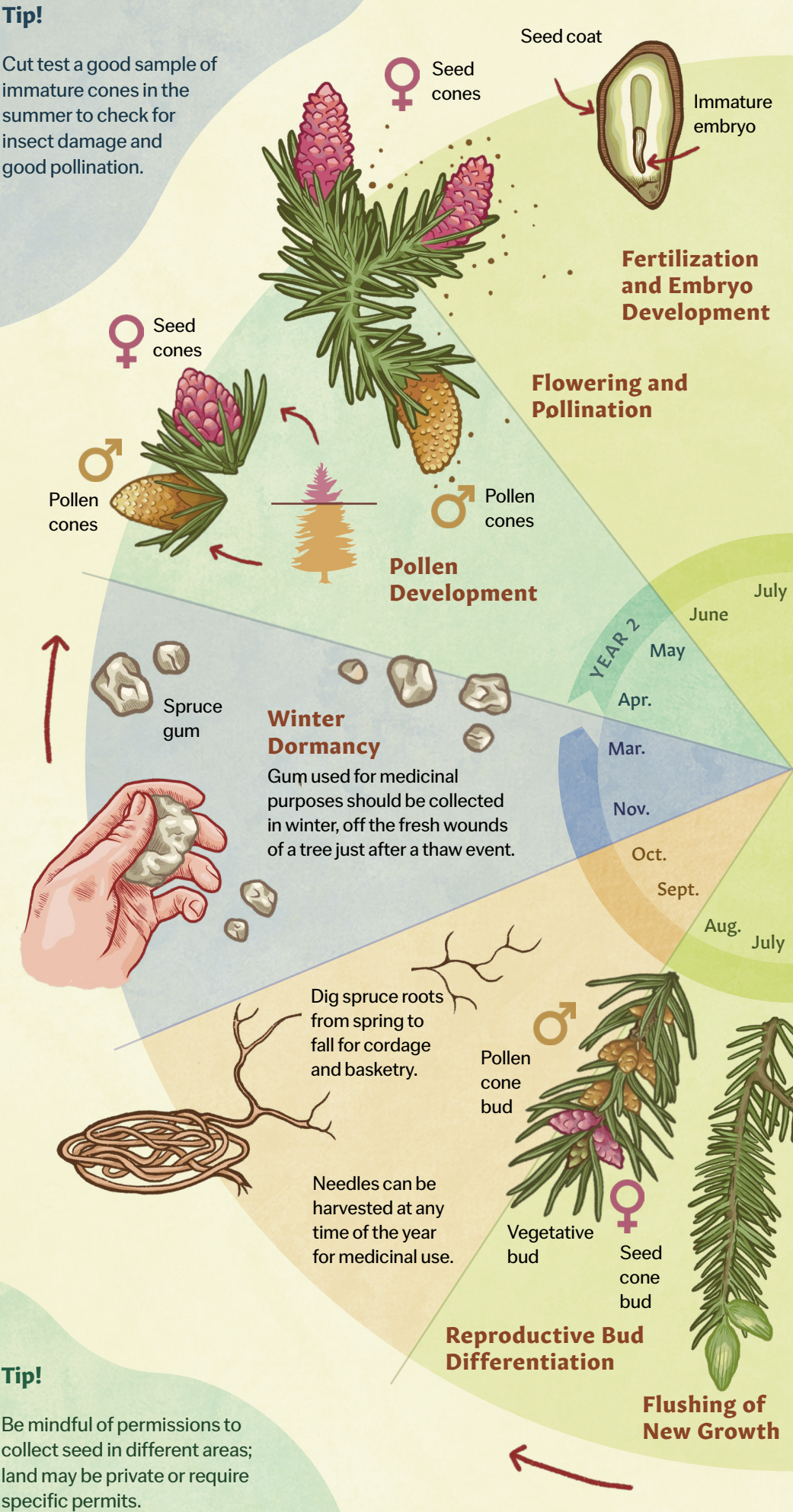
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Tip!

Cut test a good sample of immature cones in the summer to check for insect damage and good pollination.



Tip!

Be mindful of permissions to collect seed in different areas; land may be private or require specific permits.

How to Collect and Process White Spruce

Maturity Indicators

- Mature seeds will have a light to dark brown seed coat and a firm white-yellowish embryo.
- Ripe cones are light brown but can also be yellow-purple or deep brown.

10-14 good seeds per cut test

Storing

- Dry spruce seeds to 5-7% moisture content. Spread seeds on trays in a well-ventilated room with low humidity (<30%) for 24 hours.
- Freeze seeds in a sealed container to store. Sealed containers like mason jars prevent moisture from affecting seeds. Frozen seeds can remain viable for several decades. The National Tree Seed Centre stores all spruce seeds at -20°C.

Sowing and Germinating

- Prechilling.** Chill seeds at 3-5°C for 21 days on a moist paper towel or germination paper in a sealed transparent container.
- Sowing.** Sow prechilled seeds onto desired growing medium.
- Germinating.** 8 hours of light at 30°C and 16 hours of dark at 20°C for 21 days.

Collection Methods

- Harvest from seed orchards or natural stands with more than 50 mature trees.
- Use pole pruners or hooks to reach the upper crown.
- Tree climbing (with proper training).
- If there is a planned harvest, collect closed mature cones from felled trees.

Handling

Cones should be dried slowly to prevent damage and prepare for processing.

- Put only good cones in the bag.
- Store in burlap bags, no more than half full, or layer thinly on trays. This allows cones to expand and air to circulate.
- Avoid exposure to sun, rain, or snow.
- Stir or shake bag daily for even drying.

Processing

- Remove seeds from cones.** Cones will open as they dry and seeds will fall out. Use a cone tumbler or shake cones in a container to dislodge more seeds.

- De-wing seeds** to reduce storage space and make sowing easier. Rub seeds gently in a cloth bag to remove the wings. Wet bag with warm water to dissolve the resin which binds the wings to the seed. Spread moist seeds to dry before final cleaning.

- Clean the seeds.** Remove all debris (seed wings, needles, scales, pitch and other materials) by filtering through a sieve or screen, winnowing, or aspirating.

Tip!

Immediately document source information (e.g. species, location coordinates, date) and label the collection. Ensure this information always stays with the collection.

Tip!

To ensure broad genetic diversity, collect in areas with a large number of trees, ideally during a heavy crop year.