

This is a brief foraging guide for future halophytes. It is meant to be used in the year 2124, in 100 years from now. It is your essential guide to exploring the abundant world of plants that grow in a salty environment. From the sun-drenched shores to the marshy estuaries, these remarkable species defy conventional adaptation limitations and offer unexpected ecological possibilities.

Whether you're a curious forager or simply a survivor of the future, with this booklet you can start learning about future halophytes amidst the briny fields of our changing world. Published in the context of S.A.L.T, a research project by Müge Yilmaz in collaboration with Rietveld Sandberg Research.



# FUTURE GUIDE FOR THE SALTY FORAGER

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# FUTURE GUIDE FOR THE SALTY FORAGER

## Introduction

*We are rather fishy, we humans.*

—Astrida Neimanis, *Bodies of Water: Posthuman Feminist Phenomenology*<sup>1</sup>

Dear reader, this guide is meant to be used in the year 2124, 100 years from now. It is meant to assist and prepare you for the times to come and the changes that are happening in real time.

The Netherlands, given its low-lying terrain and extensive coastline, faces heightened vulnerability to climate change impacts like rising sea levels and increased flooding incidents.<sup>2</sup> On a global level, about seven million ha of agricultural land worldwide is affected by salinity, and that area is expanding. One emerging strategy to mitigate the effects of climate change on these ecosystems involves harnessing and promoting the use of halophytes, plants capable of thriving in high-salinity environments—because no matter what we do, the salt is coming, and we humans will not change that.

Halophytes, derived from the Greek words for “salt” (*halas*) and “plant” (*phyton*), are remarkable species that flourish in saline and brackish soils. Scientifically: “A halophyte is any plant that can complete its life cycle and reproduce itself under conditions of soil-water salinity of 8–10 dS m<sup>-1</sup> electrical conductivity (EC) (approximately 20% seawater) or more.”<sup>3</sup> Their occurrence as plants is increasingly common due to rising sea levels, agricultural runoff, contaminated groundwater, and the anthropogenic salinization of waters and soils. These resilient plants exhibit adaptability to varying levels of salinity and climatic conditions,

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1 Astrida Neimanis, *Bodies of Water: Posthuman Feminist Phenomenology* (London: Bloomsbury, 2007), p. 109.

2 Donald Scavia et al., “Climate Change Impacts on U.S. Coastal and Marine Ecosystems,” *Estuaries and Coasts* 25, no. 2 (April 2002).

3 Aronson, J. (1985) Economic halophytes—a global review. In: Wickens, G.E., Goodin, J.R. and Field, D.V. (eds) *Plants for Arid Lands*. Springer, Dordrecht, Netherlands, pp. 177–188

therefore they can play a main role in people’s future survival. Some already grow in saline soils while others can be cultivated by using saline water to facilitate growth in soils that are unsuitable for conventional crops. Rich in nutrients such as antioxidants, fatty acids, and amino acids, halophytes have historical applications as culinary herbs, vegetables, and animal feed. In short, halophytes can be grown to produce oilseeds, grains, forage, fuel, food, medicine, chemicals, timber, and fiber, and they can be used for soil or water conservation or remediation.

Consequently, they offer a promising alternative for addressing food security concerns while mitigating soil salinity and promoting healthier dietary options amidst freshwater scarcity. Salt, while essential in moderation, can be destructive in concentrated form, posing threats to plant life and ecosystems. In history it has even been used as a weapon of colonization. Shechem was an ancient city that was in the current West Bank whose soil was salted by its ruler Abimelech to thwart a revolution against him. This process, also called “sowing with salt,” was a ritual of spreading salt on the sites of cities razed by conquerors. Another example is the destruction of Carthage by the Romans, by the same method of sowing salt on the land so that no one could use it. However, this story remains mythological and is not supported by historical evidence. History, either real or alleged, might be repeating itself in real-time contemporary events. As I write these lines, we read the news of the Israeli army’s efforts to flood Palestinian soil with saltwater. The phrase “salting the earth” epitomizes attempts to contaminate groundwater and thus render soil infertile. However, in this publication, I would like to focus on wherever salt can be *constructive* for life-affirming practices.

This guide aims to introduce a concept that has garnered consensus among numerous artists, researchers, and scientists: that is of the significance of edible halophytes. They are abundantly found along coastlines and they will shape the future of food sovereignty on Earth. With mounting concerns over food security amidst climate change-induced challenges such as rising sea levels and soil salinity, exploring

alternative food sources is of paramount importance. Halophytes, with their innate ability to thrive in saline environments, offer a promising solution to mitigate the impacts of environmental stressors on agriculture. For example, there is already great focus on algae as an alternative source of food and material. Through disseminating knowledge of more plants and exploring these new agricultural practices, it is possible to catalyze a paradigm shift toward embracing halophytes as integral components of human's future food systems.

Together with sea levels rising, anthropogenic salinization represents an additional environmental concern alongside rising sea levels. Extensive groundwater extraction exacerbates this issue by facilitating the intrusion of saline water from the sea into inland aquifers. This intrusion is particularly pronounced in urban areas with excessive groundwater usage. Notably, the widespread application of salt as an anti-icing agent in many urban centers further compounds the problem. In industrialized and highly urbanized regions, such as roadsides, gas stations, trans-shipment stations, and certain manufacturing facilities situated in colder zones, deicing activities are routinely conducted during winter months. Despite the availability of alternative deicing agents—such as urea, glycol, calcium, and magnesium formates, and acetates—sodium chloride (NaCl, table salt) and calcium chloride (CaCl<sub>2</sub>, calcium chloride) remain the preferred choices due to their cost-effectiveness. This preference for affordable deicing agents reflects practical considerations for both private enterprises and local governmental bodies. However, the continued reliance on NaCl and CaCl<sub>2</sub> exacerbates anthropogenic salinization, perpetuating the cycle of environmental degradation in affected areas.

On the constructive side, salt water or marine ecosystems generally support a much higher level of biodiversity than freshwater (sweet water) ecosystems. Oceans, which cover more than 70% of the Earth's surface, are home to an astounding variety of life forms, ranging from microscopic plankton to massive whales. The vast expanse and depth of the oceans create numerous habitats, each with distinct environmental conditions, such as coral reefs, deep-sea trenches, kelp forests, and mangrove swamps. These diverse environments provide the conditions necessary for the evolution and survival of a wide range of species. Marine biodiversity includes an incredible array of fish, invertebrates, mammals, birds, and plants, with many species still undiscovered. In contrast, freshwater ecosystems, though vital and diverse in their own right, occupy a much smaller portion of the Earth's surface and tend to have more confined habitats such as rivers, lakes, and wetlands. This limitation in habitat size and availability leads to fewer

species inhabiting them compared to the immense variety found in the oceans. The saline environment of marine ecosystems allows for a greater diversity of physiological adaptations among species, which contributes to the richness of life forms found in saltwater.

Throughout history, tidal flats and marshes were perceived as unsanitary due to associated diseases such as malaria, tuberculosis, and fluke infections,<sup>4</sup> rendering them economically insignificant “wastelands.” However, the whole of the Netherlands is built upon tidal flats, and the only reason that we do not experience the tides in real time is because of the human-constructed dykes and dunes. This whole country exists thanks to the efforts that were made to reclaim these areas by dredging and transforming them into agriculturally viable land, known as polders. Notably, the agricultural revolution—which laid the groundwork for the modern crop rotation system that followed the earlier three-field system—originated in the Wadden Sea region of the Netherlands.<sup>5</sup> Within European intertidal zones, salt marshes and mudflats are dominated by various plant species including *Salicornia Europaea*, *Suaeda Maritima*, and many others that we will look into in this guide.

Salty agriculture, or the cultivation of crops in saline environments, presents exciting possibilities for sustainable farming in a world increasingly impacted by climate change, soil degradation, and freshwater scarcity. Marine agriculture, often referred to as “halophyte farming,” focuses on growing salt-tolerant plants that thrive in saline soils or even in seawater. This approach has the potential to revolutionize farming, especially in coastal areas or regions where traditional agriculture is limited by high soil salinity or limited freshwater supplies. Halophytes, such as *salicornia*, sea kale, and salt-tolerant grains like quinoa, are already being studied and cultivated for their resilience in salty conditions. These crops will provide valuable food sources for human consumption and livestock feed while using land that would otherwise be unsuitable for traditional farming.

Marine agriculture could also extend to innovative systems like

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4        Liver flukes are parasitic worms that can infect your liver, gallbladder and bile ducts. You can get them from eating uncooked or undercooked freshwater fish or watercress.

5        J. Roding and L. Heerma van Voss, *The North Sea and Culture (1550–1800)* (Hilversum: Uitgeverij Verloren, 1996).

integrated multi-trophic aquaculture (IMTA), where fish, shellfish, and seaweed are grown together in a symbiotic system. In such setups, nutrient waste from fish farming can feed algae and halophytic plants, creating a closed-loop system that reduces environmental impact. Salty crops will also play a significant role in carbon sequestration and combating desertification, as halophytes are known for their ability to thrive in arid, saline environments. Their deep root systems can stabilize soils, prevent erosion, and promote soil health, turning degraded land into productive agricultural zones.

As freshwater becomes scarcer in many parts of the world, the ability to cultivate crops using seawater or brackish water offers a promising solution to food security challenges. Researchers and farmers are exploring ways to scale marine agriculture, improve yields, and expand the variety of salt-tolerant crops. There are many keywords to look into such as halophyte-based agriculture, silviculture, and mariculture. Advances in biotechnology and selective breeding could further enhance the strength and nutritional value of these crops, paving the way for a new era of farming adapted to a changing climate and rising sea levels. Salty agriculture holds immense potential to feed growing populations while reducing pressure on freshwater resources and contributing to more sustainable, resilient agricultural practices.

For example, many of these halophytes will become significant sources of not only food but also vegetable oil and biofuels due to their ability to thrive in saline environments where conventional crops struggle. Certain halophyte species, such as *salicornia*, are rich in oils that can be extracted and used for cooking or industrial purposes, similar to traditional vegetable oils like soybean or sunflower oil. Their high biomass production makes halophytes ideal candidates for biofuel generation, offering a renewable and sustainable energy source. By cultivating these plants in coastal or saline-affected regions, we could reduce the strain on freshwater resources, expand agricultural land use, and contribute to energy independence. This makes halophytes not only a solution to food security but also a promising avenue for the development of cleaner, more sustainable energy alternatives.

This book is written for 2024 from 2124's perspective, compiled by an unknown person who has witnessed humanity's next 100 years. They report a major flood that takes place in 2089 after which Wadden Islands in the northern part of the country converged into a large island called Salaxis. By equipping readers with knowledge and strategies tailored to navigate these future adversities, this guide aims to empower individuals to adapt and

thrive in an ever-changing environment. Through proactive measures and informed decision-making, we can strive to mitigate the impacts of environmental catastrophe and build a more resilient future for generations to come.

On the sea-coast I found, also, several plants, whose characters, similar to others I already knew, enabled me to recognize pretty well their properties. They are all alike, fat and strong, full of sap, and clammy; and it is evident that the old salt of the sandy soil, but still more the saline atmosphere, gives them these properties. Like aquatic plants, they abound in sap, and are fleshy and tough, like mountainous ones. Those whose leaves show a tendency to put forth prickles, after the manner of thistles, have them extremely sharp and strong.

—Johann Wolfgang Von Goethe<sup>6</sup>

## The Honorable Harvest

As is customary in any foraging guide, this one begins with a foundational discussion on ethics and legality. Central to this discourse are the principles of “the honorable harvest” and the acknowledgment of final responsibility. The concept of the honorable harvest emphasizes the importance of approaching foraging with respect, gratitude, and reciprocity toward the natural world. It underscores the significance of sustainable practices, prioritizing the well-being and regeneration of wild ecosystems. The notion of final responsibility underscores the accountability each forager holds in ensuring their actions align with ethical guidelines and legal regulations. By embracing these principles, foragers not only cultivate a deeper connection to the environment but also play an active role in its preservation for current and future generations.

The ethics of foraging encompass principles aimed at ensuring the sustainability and preservation of natural ecosystems while responsibly gathering wild foods. One such principle involves taking only what one will consume in a single meal, minimizing waste, and allowing for the regeneration of foraged resources. A fundamental guideline is never to harvest more than one third of a plant originating from the same root system. This practice promotes the continued growth and vitality of the plant population, ensuring

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<sup>6</sup> Johann Wolfgang Von Goethe, *The Works of J.W. von Goethe, Vol. XII* (1885, repr.; New York: Cosimo Classics, 2020).

its long-term survival and ecological balance. By adhering to these ethical guidelines, foragers can enjoy nature's bounty while actively contributing to the conservation and stewardship of wild plant communities for future generations.

While the Mediterranean coast boasts an extensive array of halophytes, it's crucial to recognize the unique vulnerability and protected status of the dunes in the Netherlands. These ecosystems are not only fragile but are often subject to conservation measures. Consequently, foraging from the Dutch dunes is strongly discouraged. Instead, this guide is an initiation for observation and knowledge acquisition. Understanding the characteristics and ecological significance of halophytes within the Dutch coastal context, allows readers to deepen their appreciation for these ecosystems while respecting their conservation needs. Through responsible observation and engagement, you can contribute to the preservation of these delicate habitats, ensuring their continued existence for future generations to appreciate and study.

Legal note: As of 2024, foraging is illegal in the Netherlands. A forest ranger (*boswachter*) has the right to stop you, give you a fine, and take your harvest. In 2023, two people were given a fine in Oss for trying to forage 15 kilos of mushrooms from a local forest. If you are taking that much harvest indeed maybe you should be fined. This is also a good reason to practice the honorable harvest, if you have less than 250 grams of a plant, it is clear you take it only for yourself and not for commercial purposes—or you could tell them that you are an artist doing research.

Lastly, this guide is made for research purposes. It is semi-fictional. It does not constitute medical advice. Do not use it for advice about eating plants, due to the risk of mixing them with poisonous false friends. Most importantly: "Don't die."<sup>7</sup>

# THE PLANTS

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7 As said by Alexis Nikole, <https://www.instagram.com/blackforager>.



## Salicornia - Zeekraal

Salicornia is the most popular of the halophytes, with many experimental agriculture projects based on it. Commonly known as glasswort, pickleweed, pickle grass, sea asparagus, or samphire, it has many folk names. Foraging and eating it is a popular activity along the coastal areas and salt marshes of the Netherlands. Salicornia thrives in saline environments, making it abundant near the North Sea and in tidal zones. When foraging, it's best to look for the young, tender shoots during spring and early summer. These vibrant, succulent stems have a crisp texture and a salty, briny flavor. Salicornia can be eaten raw in salads, lightly blanched or sautéed as a side dish, or pickled to preserve its unique taste. It pairs wonderfully with seafood and is often used in coastal Dutch cuisine to add a fresh, oceanic element to dishes.

Salicornia are halophytic plants thriving in highly salinated contexts such as marshes, beaches, and mangroves. Known to be one of the few plants within the ecosystem of a marsh for which salt is imperative for its growth, Salicornia are edible plants native to North America, Europe, Central Asia, and Southern Africa that possess many capacities beyond being delicious. Salicornia has been implemented as animal feed, vegetable oil, biodiesel, and in cosmetic products and glass production. It is revered for its role in environmental preservation due to its phytoremediation<sup>1</sup> capacities. During a sixteenth-century resurgence in glassmaking, Salicornia was used as a source of sodium carbonate and thus garnered the name glasswort. Contemporary cultivations of the plant explore Salicornia as a cash crop in saline agriculture, as well as a resource in the fabrication of biofuel.

It is the most widely grown halophyte for oilseed and biodiesel production. Researcher Aslak H.C. Christiansen reported that 1 ha of Salicornia grown on coastal land can produce between 890 and 950 l of biodiesel.<sup>2</sup> The Masdar Institute of Science and Technology started a seawater-irrigated cultivation of Salicornia in Abu Dhabi to produce biofuel for the aviation industry. Currently %39 of the Salaxis Island is covered by this precious plant.

This plant holds significant promise for the future of humanity due to its ability to thrive in saline environments, making it a valuable crop in a world facing increasing soil salinization, freshwater scarcity, and climate change. It can be irrigated with seawater or brackish water, reducing the need for freshwater resources in agriculture. Its resilience to harsh conditions makes it an ideal candidate for cultivation in coastal regions and areas where traditional crops struggle. Beyond its environmental benefits, Salicornia is rich in nutrients, including vitamins, minerals, and antioxidants, making it a healthy food source.

1 Phytoremediation is the method of using plants to clean up contaminants such as metals, pesticides, explosives, and oil from soil.

2 Ryan C. Christiansen, "Sea asparagus can be oil feedstock," *Biodiesel Magazine*, (July 2008), <http://www.biodieselmagazine.com/articles/2600/sea-asparagus-can-be-oil-feedstock>.



## Salsola Soda - *Monniksbaard*

Salsola soda is a salt-tolerant plant that has been cultivated and foraged for centuries across the Mediterranean region. This halophytic plant, with its delicate, thin, needle-like leaves, thrives in saline soils where other crops struggle. Known for its unique culinary qualities and its historical use in the production of soda ash, Salsola soda has recently gained renewed interest, both as a traditional food source and as a modern agricultural crop with potential for cultivation in areas affected by soil salinity and water scarcity. As more people seek sustainable, resilient food sources in the face of climate change, Salsola soda's role in the kitchen and in agriculture has become increasingly important. It has long been celebrated in Mediterranean cuisine, particularly in Italy, where it is commonly known as *agretti* or *barba di frate* (meaning "monk's beard"). Its delicate, succulent leaves have a slightly salty, tangy flavor that has made it a popular ingredient in a variety of dishes, from salads to pasta to sautéed side dishes. In addition to its flavor, Salsola soda is valued for its health benefits. It is low in calories, rich in fiber, and packed with essential vitamins and minerals, including vitamin A, vitamin C, iron, and calcium. Its high water content and diuretic properties also make it a popular choice for those seeking healthy, detoxifying foods. As more people gravitate toward plant-based diets, Salsola soda is increasingly recognized as a nutritious, sustainable, and flavorful addition to a variety of dishes.

It typically grows in coastal areas, salt flats, and marshes. In Italy and other Mediterranean countries, it can be found growing wild along the edges of fields and in areas with high salt content in the soil. Foragers should look for the plant's distinctive thin, grass-like leaves, which resemble needles or young pine shoots. It thrives in saline soils, making it well-suited to areas where other vegetation might struggle due to salt stress.

In Italy, *agretti* is typically harvested in the spring when its young shoots are tender and flavorful. It is often boiled or steamed briefly to preserve its bright green color and delicate texture, and then it is seasoned simply with olive oil, lemon juice, and salt. As a pioneer species in saline and coastal ecosystems, it helps stabilize soils, prevent erosion, and support biodiversity by providing a habitat and food source for various species of wildlife. Its deep root systems are particularly effective at binding soil and preventing it from being washed away by tides or rainfall, making it an important plant for maintaining coastal stability.

Salsola soda's ability to grow in degraded soils offers a potential solution for land reclamation efforts in areas affected by salinization or desertification. By planting salt-tolerant species like Salsola soda, it is possible to rehabilitate these lands, restoring their productivity and supporting local agriculture and ecosystems.





## Sea Fennel - *Zeevenkel*

Sea Fennel, or *Crithmum Maritimum*, is a native umbellifer<sup>1</sup> that can be found along the sea. Like many plants under such conditions, sea fennel has short, thick leaves to lose as little water as possible through evaporation. Sea fennel was rare in the Netherlands but as of 2124, it is common on all its coasts. The plant cannot withstand severe frost, so some protection is recommended. Sea fennel has a distinct taste with the striking typical saltiness of many sea vegetables. You use the young leaves, fresh and raw, possibly marinated in vinegar, lemon, olive oil, and salt. The young buds, flowers, and seed pods are edible and its stems and leaves can be cooked like asparagus.

The botanical name *Crithmum* comes from the Ancient Greek *krithe*, meaning “barley,” because of the fruit’s similarity to a barley grain. The plant grows to a height of 20 to 50 cm, and the stem is lignified at the base. The roots are also woody. The leaves of the first order are petiolate, and those of the second order are fleshy, narrowed at the base, and with an intact leaf margin. The leaves, up to 7 cm long, are aromatic. Sea fennel blooms from July to October.

The flowers are yellow-green or white. The 5 to 6 mm-long olive-green-to-purple fruit is a two-piece split fruit with few protruding ribs. The fruit segments are spongy, broad-triangular in cross-section and contain a single seed. The fruits are dispersed through water.

It is used in folk medicine because of its digestive, diuretic, purgative, and antiscorbutic properties. This exceptional plant also has diaphoretic<sup>2</sup> properties. It can be used as a stimulant, a kidney stone inhibitor, and an aphrodisiac. It has been used in Mediterranean folk medicine for centuries for its antiseptic activities, antidiabetes, and anti-inflammatory effects.<sup>3</sup> In Jordanian folk medicine, the plant is used in the treatment of anemia, bronchitis, rheumatic pain, and tuberculosis. The species also helps with secretion of mucus and was prescribed for female sterility and the induction of abortion.

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1 A plant that has its flowers arranged in umbels (umbrellas) such as fennel, dill, parsley, carrot, celery, and parsnip.

2 Something that is diaphoretic induces sweating.

3 Sunder Singh Arya, Sarita Devi, Kirpa Ram, Sunil Kumar, “Halophytes: The Plants of Therapeutic Medicine,” in *Ecophysiology, Abiotic Stress Responses and Utilization of Halophytes*, Mirza Hasanuzzaman, Kamrun Nahar, Münir Öztürk, eds. (Singapore: Springer Singapore, 2019).



## Suaeda - Schorrenkruid

Suaeda can be found in coastal areas across Europe, particularly in salt marshes, estuaries, and other saline environments. In the Netherlands, it grows in coastal regions along the North Sea, thriving in tidal flats, marshes, and the unique landscapes shaped by brackish water. Foraging for Suaeda is a sustainable way to harvest this naturally occurring plant, but as with any wild foraging, it's essential to respect local ecosystems and not overharvest. The best time to forage it is during its growing season, typically in spring and early summer when the shoots are young and tender.

Foragers should look for its distinctive, fleshy, cylindrical leaves, which resemble small, plump needles. Suaeda species vary slightly in appearance, but they typically have a green to reddish hue and can grow in low-lying, salty areas. Always ensure that the plants are foraged from clean, uncontaminated areas, as coastal regions can sometimes be affected by pollutants.

*Suaeda* has a mildly salty flavor and a crisp, juicy texture that makes it a great addition to a variety of dishes. It can be eaten raw in salads, steamed or sautéed as a side dish, or added to soups and stir-fries.

From a nutritional standpoint, it is a rich source of essential minerals and nutrients, particularly those that are often found in plants that grow in saline environments. It contains high levels of potassium, calcium, and magnesium, all of which are vital for maintaining healthy bodily functions. Suaeda is a good source of dietary fiber and antioxidants, which contribute to digestive health and help protect the body from oxidative stress. Its ability to thrive in salty conditions means it also has higher salt content, so it can be used as a natural flavor enhancer in dishes while providing essential trace minerals.

As a resilient and nutritious plant, it is an excellent example of how halophytes can help address future agricultural challenges. Whether foraged along the coasts of the Netherlands and Europe or cultivated as part of innovative saline farming practices, it represents the potential of salt-tolerant plants to offer sustainable food sources and protect ecosystems in the face of a changing climate.



## Cattail - *Lisdodde*

Cattail, also known as Typha, is a ubiquitous wetland plant found in marshes, swamps, and along the edges of lakes and rivers. Recognizable by their tall, slender stems and distinctive brown, fluffy flower spikes, cattails are not only an essential component of wetland ecosystems but also a remarkable resource for foragers and nature enthusiasts. These plants have been used by various cultures for centuries, offering a plethora of edible parts and practical applications.

Cattails are often referred to as the “supermarket of the swamp”<sup>1</sup> due to their numerous edible parts. Almost every part of the plant is consumable at different stages of growth, making it a valuable food source for foragers. The most commonly eaten parts include the young shoots, immature flower spikes, and rhizomes. Foraging for cattails is relatively straightforward, but some important considerations should be kept in mind to ensure safety and sustainability. First, it’s crucial to identify cattails accurately, as several similar-looking plants may be toxic. Cattails have distinctive, sword-like leaves and grow in dense stands near water bodies. When foraging, select plants that are free from pollution and avoid areas near roads or industrial sites where contaminants may affect the plants.

In addition to their culinary uses, cattails have served various practical purposes throughout history. Indigenous cultures have utilized cattails for their versatile fibers to make mats, baskets, and even roofing materials. The soft, fluffy flower heads can be used for insulation or stuffing in pillows and bedding, providing warmth and comfort. They also provide habitat for wildlife, stabilize shorelines, and help filter pollutants from water, contributing to the overall health of wetland ecosystems. They are a remarkable example of a versatile plant that offers a wealth of opportunities for foraging, culinary creativity, and practical applications. With their edible shoots, flower spikes, and rhizomes, cattails provide a sustainable food source for those willing to explore the wetlands. By practicing responsible foraging and understanding the various uses of this plant, we can deepen our connection to nature while benefiting from the rich resources that this plant offers. As interest in sustainable living and foraging continues to grow, cattails stand out as a valuable plant that embodies the principles of environmental stewardship and self-sufficiency.

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1 Robin Wall Kimmerer, *Braiding Sweetgrass* (Minneapolis: Milkweed Editions, 2013), p. 157.





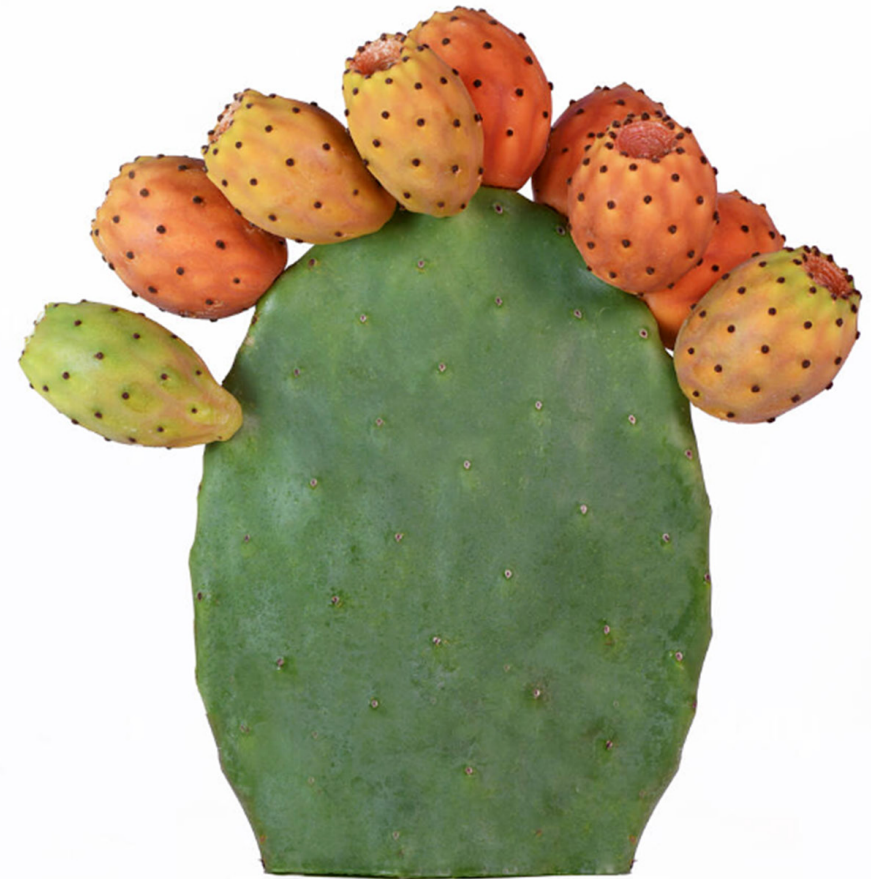
## Prickly Pear Fruit - *Stekelige Peer*

Prickly pear, also known as cactus fruit (*Opuntia*), is a vibrant and delicious fruit that has been embraced in various cuisines around the world, particularly in Mediterranean regions and parts of the meso-Americas. Characterized by its bright colors, unique texture, and sweet, juicy flavor, prickly pear is not only a delightful culinary addition but also a nutritious fruit that offers numerous health benefits. Foraging for prickly pears can be a rewarding experience, especially for those living in or visiting areas where this plant thrives, including the southern parts of the Netherlands and the Mediterranean.

In the Netherlands, prickly pear is not native but has become increasingly visible especially in the southern parts as the climate became warmer and warmer. This succulent plant thrives in well-drained sandy soils and is tolerant of drought, making it suitable for the next 100 years in the Netherlands. As for the Mediterranean, prickly pear is indigenous to the region and grows abundantly in areas like southern Spain, Italy, and Greece, often found in arid landscapes, rocky hillsides, and along the coast. The plant itself supports local fauna, providing shelter and food for various species. Birds, insects, and small mammals often feed on its pads and fruit, and its flowers attract pollinators like bees, which are vital for maintaining biodiversity in these ecosystems. The fruit is a favorite among wildlife, which helps with seed dispersal, promoting the plant's growth and resilience in its natural habitat.

When foraging, it's essential to be very careful about its tiny needles. Their skin is covered in tiny, hair-like spines known as glochids. These can easily become lodged in the skin. Wearing gloves and using tongs can help prevent accidental prickles while harvesting. The best time to forage for prickly pears is late summer to early fall when the fruit is ripe and ready for consumption. Its sweet, mildly tangy flavor makes it an excellent addition to fruit salads, smoothies, and desserts. The fruit can be consumed raw, but it is often peeled to remove the skin and glochids before eating. A little known fact is that the cactus's leaves also can be eaten in savory dishes, cooked like a green vegetable.

In Mediterranean cuisine, the sweet part is commonly used to make jams, jellies, and syrups, providing a unique twist to traditional recipes. It can also be juiced, creating refreshing beverages that are both hydrating and nutritious. The pads of the prickly pear, known as nopales, are edible and can be grilled, sautéed, or added to salads, offering a slightly tangy flavor and a rich source of fiber. The fruit is rich in vitamins C and E, and antioxidants that support immune function and skin health. Prickly pear contains magnesium, potassium, and calcium, which are essential for overall health and chances of survival.



## Sea Bread - Zeebrood

Sea Bread is also known as Rock Bread or its scientific name *Panis Maritimum*. It is a highly valuable succulent that grows exclusively in seashore areas and salty soils. This hardy plant thrives in environments where most other vegetation would fail, making it a key player in the world of sustainable foraging and sea agriculture. Known for its ability to absorb and tolerate high levels of salt, Sea Bread has become an essential food source for communities living near the sea. With its carbohydrate-rich properties, it can be dried, ground into a fine powder, and used to make a nourishing flatbread.

The plant typically grows in tidal flats, sandy shores, and marshes where the soil has high salt content. Recognizing Sea Bread is easy due to its plump, fleshy leaves and low-growing, mat-like structure. It has a silvery-green hue, which helps it reflect sunlight and retain moisture in dry, salty conditions. It can grow in dense patches, carpeting the ground and giving seashore landscapes a distinctive matte texture. The best time to forage Sea Bread is during the late spring and early summer months when its leaves are plump and filled with natural starches. During this period, the plant's energy is concentrated in its thick leaves, which are at their peak for harvest. When foraging, it's important to cut the leaves close to the base, allowing the plant to regrow sustainably.

One of the most unique features of Sea Bread is its ability to be transformed into bread. After harvesting, the leaves are washed thoroughly to remove any residual salt or sand. The leaves are then laid out to dry in the sun for several days, or they can be dried in a low-temperature oven to speed up the process. Once completely dry, the brittle leaves are ground into a fine powder using a mortar and pestle or a modern grinder. Most commonly, it's mixed with a small amount of water and kneaded into dough and then cooked normally. These flatbreads are an excellent source of carbohydrates and are highly nutritious, containing essential minerals such as magnesium, potassium, and trace amounts of iodine from the salty soil. In some sea communities, Sea Bread flatbreads are a staple food, celebrated for their energy-boosting properties and ability to sustain people.

It is a natural source of essential minerals like sodium and calcium, which help maintain electrolyte balance and support bone health. The plant also contains a variety of antioxidants, which help protect the body from oxidative stress, and fiber, which aids digestion. The powdered form of Sea Bread can be incorporated into various dishes. Beyond flatbreads, it can be used to make nutrient-dense pancakes, added to soups as a thickening agent, or mixed with other grains for a hearty, filling porridge.

As a halophyte, this plant represents the potential for future sustainable agriculture, particularly in regions affected by increasing soil salinization. Sea Bread offers a promising solution, allowing farmers and foragers to reclaim and cultivate the lands that would otherwise be unusable for traditional crops.





## Sea Rocket - *Zeeraket*

Sea Rocket (*Cakile maritima*) is a hardy and wild coastal plant that thrives in salty, sandy soils and is commonly found along shorelines and dunes. With a flavor that adds a peppery and mustard like zing to dishes, it is a nutritious wild green.

Sea Rocket is a common sight along coastlines, easily recognized by its fleshy, succulent leaves and pale purple or white flowers. It often grows in patches among sand dunes or in sandy, salt-rich soil, making it a great find for those foraging in seaside areas. It can be harvested for most of the year, although it's best to collect its tender young leaves in early spring and summer, when the flavor is at its mildest and most pleasant. Larger leaves might turn slightly bitter.

In its use, it can be compared to arugula or radish, with a slightly salty aftertaste. Its flowers are edible too, and they carry a milder, slightly sweet flavor compared to the leaves. This briny, peppery taste makes Sea Rocket a great wild ingredient for an outdoor meal.

Apart from being eaten raw, it can also be sautéed, or even pickled, depending on the desired intensity of taste. In Mediterranean cuisine, Sea Rocket is sometimes sautéed with olive oil, garlic, and lemon to make a simple side dish next to rice and fish. The leaves can also be added to soups, stews, and stir-fries, where their peppery bite mellows slightly during cooking but still adds complexity to the dish. Last but not least, it can be blended with nuts and cheese into pesto for a flavorful twist on the traditional basil-based recipe.

It's an excellent source of vitamins A and C, both of which are important for supporting immune function and skin health. It contains beneficial minerals like potassium and calcium, which are essential for maintaining healthy bones and electrolyte balance. With its peppery taste and versatility in the kitchen, Sea Rocket can enhance your chances of staying alive while thriving.



## Sea Holly - *Blauwe Zeedistel*

Sea Holly (*Eryngium maritimum*), a striking and hardy plant found along coastal dunes and beaches, has long captured the attention of foragers and herbalists. With its spiny, blue-green leaves and steely, thistle-like flowers, Sea Holly stands out as a botanical gift. This halophyte, with its ability to thrive in saline soils and extreme conditions, has a rich history in past cultures, culinary uses, and herbal medicine. In the context of climate change, Sea Holly offers insights into the future of sustainable foraging and agriculture. It can be found growing in sandy, salty soils along coastlines, particularly in Europe and the Mediterranean. This perennial is easily recognizable by its stiff, spiny leaves with silvery veins and metallic-blue flower heads that you really would not like to step on with bare feet.

It is also one of the plants that you really must be starving to forage at all. In some regions, it is considered a protected species, so always check local regulations before foraging. Harvesting should be done sparingly and responsibly, collecting only small portions of the root, leaves, or seeds to ensure the plant's continued growth. Historically, the roots of Sea Holly were the most prized part of the plant, often dug up in late autumn. Today, foragers may use the young leaves and stems in small quantities, though they are not as commonly consumed as in past times.

Sea Holly's roots were once a sought-after delicacy. In the sixteenth and seventeenth centuries, Sea Holly roots were candied in sugar syrup, creating a confection believed to have aphrodisiac properties. Known as "kissing comfits," these sweetened roots were enjoyed by many and featured in medicinal preparations. The young shoots and leaves, though spiny, can be blanched and used in salads or as garnishes, offering a subtle, celery-like flavor with a hint of saltiness. The roots, if harvested, can be prepared similarly to other root vegetables. The plant's deep root system, which helps anchor it in the shifting sands, has been associated with strength and resilience. As a halophyte, Sea Holly offers spiky possibilities for the future of agriculture and plant resilience. Its ability to thrive in saline and nutrient-poor soils makes it an important plant in marine ecosystems, where rising sea levels and increasing soil salinity are becoming more common due to climate change. The plant plays a key role in stabilizing sand dunes, preventing erosion, and supporting biodiversity in fragile environments. Its hardiness makes it a potential candidate for research into saline agriculture, where crops and wild plants that can grow in salty soils are being studied as potential food sources in the face of global soil degradation. Thanks to its strong spikes, it can also be used as a threshold protector against intruders for your garden.



## Sea Buckthorn - *Duindoorn*

Sea Buckthorn (*Hippophae rhamnoides*), also called just Sea Berry, is a hardy, vibrant shrub that thrives in seashore areas, particularly along the sandy dunes of the Netherlands. Recognizable by its silvery-green leaves and bright orange berries, it has long been valued for its nutritional and medicinal properties. In the Netherlands, this resilient plant plays an essential role in dune ecosystems, providing both ecological benefits and nutritional qualities.

Sea Buckthorn grows abundantly along the dunes and sandy areas of the Netherlands, especially in regions like Zuid-Holland, Noord-Holland, and the Wadden Islands. The plant's tough, thorny branches make foraging it a bit challenging, but harvesting its small, tart orange berries make the effort well worth it. Sea Buckthorn berries are best collected in late summer to early autumn (August to October), when they ripen and develop their bright color. However, due to the plant's ecological importance in stabilizing dunes and providing food for wildlife, responsible foraging is crucial. Always harvest sparingly, taking only what you need and leaving plenty for birds and other creatures that rely on these berries as a winter food source.

It has a unique, tangy flavor, which is a mix of citrus, pineapple, and mango with a sharp, tart edge. Although too sour to be eaten raw in large quantities, they are excellent in a variety of culinary applications. In the Netherlands, it is used to make jams, jellies, syrups, and sauces, often combined with sugar or honey to balance its tartness. Sea Buckthorn oil, extracted from the seeds, is another valuable product, used both in cooking and cosmetics for its skin-nourishing properties. In traditional Dutch medicine, Sea Buckthorn was valued for its ability to boost immunity, heal wounds, and improve digestion. The plant's berries, leaves, and bark have all been used in herbal remedies, and its high vitamin C content made it a critical source of nutrition when fresh fruits were scarce.

As a halophyte, Sea Buckthorn thrives in sandy, salty soils where other plants may struggle. This makes it an important species in the context of climate change, particularly in regions like the Netherlands where rising sea levels and increased soil salinity pose threats to traditional agriculture. This plant literally holds many dunes together.





## Honeysuckle - *Kamperfoelie*

Honeysuckle (*Lonicera*), with its sweet, nectar-filled flowers and fragrant vines joins the sweet tastes in this guide. Known for its unique scent, it thrives in salty environments. In the Netherlands, this plant plays an important role in the dunes by offering biodiversity and much needed nutrition to the pollinators. It is relatively easy to identify thanks to its distinctive woody, twisting vines and its trumpet-shaped flowers, which range in color from white to yellow to pink. It can often be found growing in dunes, gardens, and along hedgerows. In the Netherlands, Honeysuckle is most commonly found in coastal areas where sandy soils and salty air provide a favorable environment for its growth.

Foraging this plant is straightforward, as while it blooms you can recognise it from its flowery smell, but it's important to remember that only the flowers of certain species are safe to eat. The berries produced by some Honeysuckle varieties can be toxic, so foragers should stick to harvesting the flowers, which are prized for their sweet nectar. The best time to forage Honeysuckle is in the early summer, when its flowering is at its peak. Simply pluck the flowers from the vine, making sure to leave enough behind for pollinators, particularly bees and hummingbirds, who rely on the nectar. Currently it is one of the most common plants in Salaxis. One of the simplest and most delightful ways to enjoy Honeysuckle is to gently pull off a flower and sip the nectar from its base—a treat many hold as a childhood memory. It can also be infused into syrups, which can be used to flavor beverages. Also used in making jams, jellies, and even sorbets, it lends a unique fragrance and flavor to these dishes. In some cultures, Honeysuckle is incorporated into herbal teas, celebrated for its mild sweetness and soothing qualities.

Honeysuckle has also been used in traditional medicine for its purported anti-inflammatory and anti-bacterial properties. Herbalists would often use the flowers to create teas and infusions believed to help with sore throats, coughs, and digestive issues. In coastal regions of Europe, including the Netherlands, Honeysuckle's resilience and ability to thrive in salty, nutrient-poor soils made it a symbol of strength and adaptation. From an environmental perspective, Honeysuckle contributes to biodiversity by providing nectar for pollinators, supporting the health of bees and other insects essential for healthy ecosystems. Its dense, sprawling growth also provides shelter for small wildlife, creating important habitats in coastal areas. As climate change continues to impact ecosystems worldwide, Honeysuckle represents a plant well-suited for adapting to shifting environmental conditions. Its ability to thrive in coastal, salty soils—areas that are increasingly affected by rising sea levels and soil salinization—makes it a valuable species for restoring and maintaining sea ecosystems. Its deep root system helps anchor loose sandy soils, once again, holding dunes in place, therefore protecting us from the sea.



## Purslane - *Portulaca oleracea*

Purslane (*Portulaca oleracea*), a hardy, low-growing succulent, is a plant that has been foraged and cultivated for thousands of years across the world. It is known for its ability to thrive in poor soils and dry conditions, including salty areas. In the Netherlands, where saline coastal regions are common, Purslane offers a sustainable and nutritious option for both wild foragers and those seeking to grow resilient crops. It can often be found in sandy dunes, salt meadows, and even along roadsides and urban areas. Its small, fleshy green leaves and reddish stems are easy to identify, and its sprawling growth pattern makes it a common sight during the summer months.

The best time to harvest Purslane is in the early morning when the leaves are crisp and full of moisture. Its leaves, stems, and seeds are all edible, making it an exceptionally versatile plant to forage. It has a crisp texture and slightly lemony, peppery flavor, and it can be eaten raw or cooked. In the Netherlands, it has been traditionally used in salads, soups, and stews, where its tartness adds a fresh bite. Purslane can also be sautéed with garlic and olive oil, added to omelets, or blended into smoothies for a nutrient-rich boost. Its succulent leaves and stems lend themselves to pickling, which preserves their crunch and tang for later use. Purslane is often used in Mediterranean and Middle Eastern cuisine, where it is combined with yogurt, tomatoes, and cucumbers in refreshing salads. In Turkey, for example, it has always been eaten fresh, simply mixed with yogurt, garlic, and olive oil. Its natural saltiness, particularly when grown in sea regions, makes it a flavorful addition to many dishes without the need for added salt. It is packed with omega-3 fatty acids, making it one of the few plant-based sources of this essential nutrient. Purslane is also rich in vitamins A, C, and E, as well as minerals like magnesium, calcium, and potassium. Its high water content and cooling properties make it especially appealing in summer dishes. In ancient Greece and Rome, it was believed to have healing properties, and Hippocrates even recommended it for digestive and heart health. In traditional European herbal medicine, Purslane was often used to treat inflammation, infections, and burns. Its cooling nature made it a popular remedy for fever and skin irritations.

As climate change leads to more extreme weather patterns, rising sea levels, and increased soil salinity, Purslane was one of the first plants that has been transformed from weed into a cash crop for salads due to its resilient nature and ability to tolerate being irrigated with brackish water. Its ability to grow in salty and degraded soils means that it could play a crucial role in future farming systems, particularly in coastal areas where rising salinity is becoming a challenge for traditional crops. As a low-maintenance plant, it requires little water and can grow without fertilizers while holding soil together.





## Prickly Saltwort - *Stekend Loogkruid*

*Salsola kali*, commonly known as Prickly Saltwort, is a hardy halophyte that thrives in coastal regions, salt marshes, and other saline environments. Known for its spiny, dense structure and ability to survive in harsh conditions, Prickly Saltwort has long been used for its culinary and medicinal properties. Although often regarded as a weed due to its invasive nature in some parts of the world, it is a valuable foraged plant with a rich history of use in traditional cultures.

Prickly Saltwort is found in dry plains and saline areas where few other plants can grow. The plant has distinctive, spiny, fleshy leaves and a sprawling, bushy structure. When foraging, it's important to wear gloves due to its sharp, prickly stems. It is typically harvested in the spring and summer, when the young shoots are tender and more palatable. The young, non-spiny parts of the plant, especially the tips of the shoots are best for consumption.

Its tender young shoots can be eaten raw in salads, where they add a refreshing, slightly crunchy texture with a hint of ocean brine. In many coastal cultures, it has been used as a vegetable for centuries, prepared similarly to other wild greens. In Japanese cuisine, *Salsola kali*'s precious seeds are considered a delicacy, and it is often blanched and served as a side dish, dressed with soy sauce and sesame seeds. It can be sautéed with garlic and olive oil. It can also be pickled, preserving its natural saltiness. It's often served as a garnish for seafood dishes, complementing the salty, savory notes of the sea. In addition to its fresh uses, this plant can be dried and ground into powder, which is then used as a seasoning or added to soups and stews for an extra boost of flavor and nutrition. This method of preservation makes the plant available year-round, extending its culinary possibilities beyond the harvest season.

This wild plant is an excellent source of essential minerals such as potassium, magnesium, and calcium, all of which play a critical role in maintaining electrolyte balance, bone health, and muscle function. These compounds are especially valuable in supporting overall health and well-being, reducing the risk of chronic diseases, and boosting the immune system in disastrous times. Due to its natural salt content, Prickly Saltwort can also serve as a natural way to replace table salt in dishes, offering a healthier alternative to processed sodium while still enhancing the flavor of the food. In addition to its use as a food source, Prickly Saltwort has played an important role in the production of soda ash, which was historically used in glassmaking and soap production. The plant was burned to produce soda ash in coastal areas, contributing to local economies before synthetic methods were developed. In case of the total collapse of late-capitalism, these practices might be useful again.



## Sea Kale - *Zeekool*

Sea Kale (*Crambe maritima*), a robust, edible plant found along the coasts of all northern Europe, has been prized for its culinary and medicinal uses for centuries. It thrives in seashore habitats, where it grows in sandy or rocky soils and is often found just beyond the high-tide line. In the Netherlands, it can be foraged along the regions of Zeeland, Salaxis (formerly the Wadden Islands), and other sandy stretches of the Dutch North Sea coast. The plant's large, cabbage-like leaves and thick, fleshy stems make it easy to identify, especially during spring and early summer when its bright white flowers bloom. It arose as a prime cash crop during the last century. It can still be found in its wild form in the wilderness.

Foragers should be mindful of sustainable harvesting practices, as Sea Kale plays an important role in stabilizing coastal dunes and supporting local biodiversity. When foraging, it's best to take only a few leaves from each plant, ensuring that the root and core remain intact so the plant can continue to grow. Early spring is the ideal time to forage Sea Kale, as its tender shoots and young leaves are at their most flavorful. Its flavor is reminiscent of broccoli, cabbage, and asparagus. Its young shoots, leaves, and even its roots can be eaten, offering a variety of culinary possibilities. Historically, coastal communities across Europe, including in the Netherlands, harvested Sea Kale as a staple vegetable before it became more widely cultivated in the eighteenth and nineteenth centuries. The tender shoots, known as "seakale thongs," are particularly prized and are often compared to asparagus in both flavor and texture. These can be served simply with butter and salt or used in more elaborate dishes, such as vegetable tarts or seafood pairings. The leaves, which have a mild, earthy taste, can be used in salads, soups, or as a side dish, while the roots, although less commonly consumed, can be roasted or boiled.

Historically, Sea Kale was a vital food source for marine communities, especially in times when fresh vegetables were scarce. The plant's resilience and ability to grow in poor soils made it an important survival food, particularly during the long winters and in times of famine. Sea Kale's significance extended beyond the Netherlands; it is mentioned in ancient Roman texts as a valued food and medicine. As climate change brings rising sea levels and increased soil salinity to coastal areas, Sea Kale stands out as a plant well-suited to these changing conditions. Its ability to thrive in salty, nutrient-poor soils makes it a valuable species in the effort to maintain ecosystems and create sustainable, climate-resilient agricultural systems. It is rich in vitamins C and K, as well as essential minerals like calcium and iron. Environmentally, Sea Kale contributes to the health of coastal ecosystems. Its presence helps prevent soil erosion, while its flowers attract bees and other few pollinators who still exist.



## Sea Aster - Zeeaster

Sea Aster (*Aster tripolium*), is a colorful and edible halophyte found along the salty shores of northern Europe. In the Netherlands, this hardy plant thrives in salt marshes and sandy dunes, where it plays a significant role in local ecosystems. In the local Zeeuwse dialect, it is also called *Lamsoor* (even though it has nothing to do with the actual lamb's ear plant). With its vibrant purple flowers and fleshy, succulent leaves, Sea Aster is not only a visually striking plant but also a valuable resource offering nutrients and calories.

Sea Aster can typically be found along the tidal zones of the Dutch coast, particularly in salt marshes and wetlands, specifically near the Noordzeekanaal and around the IJ. You can look for its distinctive succulent leaves, which are often found in clumps, and its clusters of purple flowers that bloom in late summer. When foraging for Sea Aster, it's essential to harvest sustainably, taking care to leave enough of the plant intact to allow for regeneration. The best time to forage it is before it starts flowering; this is when its leaves are at their most tender and flavorful. It can be harvested throughout the growing season, but the leaves are especially prized in spring and early summer when they are young and succulent.

It has a salty, briny flavor that echoes its coastal habitat, the leaves and young stems can be eaten both raw and cooked. When cooked, Sea Aster's flavor becomes milder, allowing it to be used in soups, stir-fries, and as a side dish. It can be steamed or sautéed, paired with garlic and olive oil for a simple yet flavorful dish. Some chefs already use Sea Aster as a garnish or to add visual appeal to plates, showcasing its beautiful purple flowers. It is rich in vitamins and minerals, making it a nutritious addition to any diet. It contains significant amounts of vitamin C, calcium, and especially iron. As many fruit trees have not survived the salinization after the big flood of 2089, Sea Aster is now a main source of vitamin C.

As almost every plant featured in this guide, Sea Aster's deep root system is essential for stabilizing coastal soils, reducing erosion, and supporting biodiversity. As habitats adapt to the challenges of climate change, Sea Aster can play a crucial role in maintaining healthy ecosystems while providing food and nutrition to local populations.



## Sea Lavender - *Zee Lavendel*

Sea Lavender (*Limonium vulgare*), is a captivating perennial herb that is known for its striking clusters of small, purple flowers and its ability to thrive in saline environments.

In the Netherlands, Sea Lavender can typically be found flourishing in salt marshes, coastal meadows, and the edges of tidal wetlands close to the North Sea. The plant is recognizable by its fleshy, green leaves and vibrant purple flowers, which bloom from late summer to early autumn. Foragers looking to harvest Sea Lavender should aim for the flowering tops, where the leaves are young and tender, as they offer the best flavor and texture. This plant, distinct from others, is more of an aromatic than a proper ingredient. In some areas of the island Texel, in the north of the Netherlands, it is this flower that gives the vast purple carpet landscape its colorful characteristic.

The best time to forage for Sea Lavender is in late summer when the flowers are in full bloom and the leaves are still succulent. Its flavor combines a mild saltiness with subtle herbal notes. It can be employed in salads, where its delicate leaves add a refreshing crunch and a hint of saltiness. The flowers can also be used to infuse oils, vinegars. It can be dried and used as a seasoning or herbal tea. The plant's high salt content, reminiscent of its habitat, can enhance the flavor of many dishes while reducing the need for additional salt.

In addition to its culinary uses, Sea Lavender has cultural significance in folklore and practices. Many sea divers tuck these plants in their pockets with the belief that it will protect them from drowning. You can also see this plant hanging from seashore bungalows to symbolize protection from the yearly waves that arrive in the Netherlands and regularly flood the whole country. Its ability to thrive in challenging saline environments symbolizes fortitude and adaptability, qualities highly valued in maritime cultures. This cultural connection continues to inspire coastal foraging communities.

Environmentally, Sea Lavender contributes to the health of ecosystems, serving as an essential habitat for pollinators and wildlife. Its presence helps maintain the balance of coastal flora and fauna, making it a crucial component of these delicate environments. Unfortunately, Sea Lavender is unrelated to the true lavender and rosemary species, therefore it won't have the benefit of calming you.





## Sea Beet - *Strandbiet*

Sea Beet (*Beta vulgaris* subsp. *maritima*), is a wild ancestor of the cultivated beetroot and a nutritious halophyte native to coastal areas of Europe, including the salty shores of the Netherlands. It is recognized for its tender green leaves and edible roots.

During archeological excavations from the Mesolithic era (8800–5000 BC) in the former peat colonies in Groningen, charred remains of this plant were found. Now in 2124, due to extremely warm weather, Sea Beet has become an invasive species that can easily nourish many. It used to be found scarcely 100 years ago, as its root didn't appreciate icy weather, and during some winters it would get frostbitten, however this doesn't occur anymore.

In the Netherlands, Sea Beet thrives in saline environments, often found in sandy soils and cliffs, particularly in areas like Zeeland and the Wadden Islands. It is characterized by its broad, dark green leaves and fleshy, edible roots. Foraging for Sea Beet can be done year-round, but the best time to harvest it is during the spring and early summer when the leaves are tender and at their most flavorful. Foragers should look for Sea Beet in the beaches, where they often grow alongside other salt-tolerant plants. If you can find Sea Bread, some greens and Sea Beet on the same day, you will be lucky enough to have a proper dinner. Sea Beet's roots will look more pointy, which is different from the normal round beet. The plant travels deeper and deeper in the soil to find moisture and water.

Culinary applications of Sea Beet are diverse, offering a range of possibilities in both raw and cooked dishes. Its leaves can be enjoyed fresh in salads, where they add a salty, earthy flavor and a pleasing crunch. The young leaves, harvested early in the season, are especially tender and palatable. Unlike other plants, cooking Sea Beet enhances its flavor, allowing it to be used in various dishes. It can be steamed, sautéed, or stir-fried, often paired with garlic and olive oil to highlight its natural taste. It is also an excellent addition to soups and stews, contributing both nutrition and flavor. The plant's roots, although less commonly used than the leaves, can be roasted or boiled, offering a sweet, earthy flavor reminiscent of beets. If you are lucky enough to have a normal beetroot, you can combine them in one meal as wild relatives. Nutritionally, it is rich in vitamins A, C, and K, as well as essential minerals like calcium and iron, making it a valuable addition to any diet. Historically, Sea Beet has been a vital part of marine diets for centuries, especially in regions where foraging supplemented agriculture. In the Netherlands, it used to be a calorie resource during times of scarcity.





## Sorghum - *Sorghum*

By 2124, you must have already heard of sorghum. In 2024, many farmers around the world had already abandoned maize and wheat due to their vulnerability to salinization and had taken up sorghum as their main crop, especially in Mesoamerica and the Middle Asia. Sorghum is not only salt tolerant but also drought tolerant and offers a rich source of nutrition and incredible resilience against accelerated climate change. Here's how to forage and use wild sorghum to help meet food-needs in a warming world.

Wild sorghum was brought to the Netherlands by climate immigrants in the 2050s. The plant has tall, grass-like stems, reaching up to two meters, with broad, green leaves. The distinctive feature is its panicle—a loose cluster of grains at the top. Unlike cultivated sorghum, which may have uniform, dense clusters, wild sorghum's panicles are often more open and dispersed. It looks very similar to the maize plant.

To be sure you're harvesting wild sorghum and not a similar plant, look for the characteristic small, rounded grains that turn brown or reddish as they mature. Be cautious, as some wild grass species resemble sorghum but lack the edible seeds. Wild sorghum is a warm-season plant and grows best in arid or semi-arid soils, which makes it particularly useful in saline-prone areas. Foraging is best done from late summer through early fall, when the grains are mature. You'll likely find it growing along roadsides, in grasslands, or in the open edges of forests. One interesting activity is to forage it nearby where it is cultivated agriculturally in large batches. Due to strong winds, the small seeds of this plant usually get dispersed in a large area around these hyper-protected farmlands.

To harvest, use sharp scissors or a knife to cut the panicles, taking care not to damage the plant's base. Collect only the mature seeds, which are hard and dry, as immature seeds will not have developed enough starch or nutrients. Aim to gather only a portion of each plant's seeds, leaving enough to ensure the population can regenerate. Since sorghum grows naturally in a variety of environments, its hardiness means it can recover well after partial harvesting. Once harvested, wild sorghum grains need to be winnowed and de-hulled. This process can be done by hand by rubbing the grains to remove the husks, then sifting to separate out the chaff. After cleaning, the grains can be boiled, roasted, or ground into flour. Sorghum flour is gluten-free and can be used in bread, porridge, or even fermented to create beverages. Wild sorghum seeds are high in fiber, protein, and antioxidants, and low on the glycemic index, making them an excellent option for sustaining energy and promoting health. Sorghum has been a life saver for many communities affected by climate change around the world in the last 100 years. It not only provides food but also contributes to soil stabilization, reducing erosion in fragile landscapes. As sea levels rise, regions experiencing salinization will see wild sorghum coming in as a *deus-ex machina* to put food on your table and contribute to your calorie intake.



## Afterword

As my research within Gerrit Rietveld Academie has taken place in Europe and the Mediterranean, the plants mentioned in this book are from this area. Written to be used in the year 2124, this guide anticipates a future characterized by uncertainty, where the next century may usher in unprecedented challenges such as extreme sea level rises, unpredictable climate events, and prolonged droughts.

This guide offers a basic overview of several common halophytes that you may encounter in the Netherlands and general Mediterranean area, emphasizing the importance of these unique salt-tolerant plants in our changing environment. As climate change and rising sea levels increase soil salinity and threaten traditional agriculture, halophytes are emerging as vital resources for creating sustainable food systems and maintaining ecological balance. The guide not only identifies these resilient plants but also provides essential guidance on how to responsibly harvest them. Responsible foraging practices are crucial for preserving local ecosystems and ensuring that these valuable species continue to thrive for future generations. By learning about halophytes and their role in promoting biodiversity and food security, readers can better understand how to incorporate these plants into their diets and lifestyles while contributing to a more sustainable future.

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