



The dunes at our beaches are fragile and need our protection.

Massachusetts students in grades K-12 are invited to participate in the Dune Sign Art Contest. Winning artwork will be used on signs at local beaches to encourage people to use designated paths and stay off the dunes.

Use your imagination! Information about dunes, the benefits of beach grass & dunes, the fragility of dunes, and the importance of good stewardship is available at

<http://seagrants.whoiedu/dune-art>.

Contest Requirements

- » All work submitted must be created by the student and entirely original.
- » Artwork dimensions should be 11" w x 6.5" h. White, non-glossy paper is recommended.
- » Be sure that any dune vegetation depicted is native to the Massachusetts coast.
- » Artwork should contain no text or names.
- » Entries should be uploaded as high resolution digital images (at least 300 dpi). Preferred formats are JPG or TIF but PDF will also be accepted.
- » One entry per student.

Questions? Contact gsimpkins@whoiedu

Rules, upload instructions and additional information are at seagrants.whoiedu/dune-art.

Prizes will be given in each of the following divisions:

- » Elementary School — Grades K-4
- » Middle School — Grades 5-8
- » High School — Grades 9-12

Prizes:

- » 1st Place: \$50 Amazon gift card and a certificate. Artwork will be used on sign.
- » 2nd Place: \$30 Amazon gift card and a certificate. Artwork may be used on sign.
- » 3rd Place: \$15 Amazon gift card and a certificate. Artwork may be used on sign.
- » 4th-6th Places: Honorable mention certificate.

Credit for students will include first name, last initial, grade, and school.



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Background: Why are coastal dunes so important?

Key Points

- Dunes protect landward areas by acting as a barrier to storm surge and flooding
- Dunes provide significant wildlife habitat
- Dunes provide a reservoir of sand that nourishes eroding beaches and feeds nearshore sand bars during storms

Benefits

The beneficial functions of coastal dunes result from their ability to move, change shape, and supply a reservoir of sand to the beach during coastal storms. Sand dunes provide unique wildlife habitat. Dunes also act as a barrier to storm surges and flooding, protecting landward development and limiting storm wave effects on coastal resources, such as beaches, tidal flats, marsh, shellfish and fish habitat, etc. During storms, coastal dunes erode, nourishing beaches and nearshore sand bars. Sand bars, beaches and dunes interact with each other, exchanging sand while changing form and shape — an interaction that dissipates storm wave energy. As the storm diminishes and waves become less steep, nearshore sand bars migrate landward and weld onto the beach. Finer-grained sand is then wind-blown back into the dune area to naturally rebuild the dunes.

Dune growth

Beach grasses help to hold the sand dunes together and prevent too much sand from being washed away and eroding the dune. Beach grasses spread out roots and rhizomes, special roots that can grow both downward and sideways in the dune, to make up a network that anchors the dune. The dense root system (which runs deep and anchors the plant in place) and the fast-growing rhizomes (which spread beneath the sand and sprout many new plants) allow for quick establishment. And once established, beachgrass literally catches sand—the leaves slow the speed of wind, allowing wind-blown sand to be deposited and accumulate to help build up the dune.

The leaves of the beachgrass also help to stabilize the dune by sheltering underlying sand from wind and rain, while the root systems help bind the sediments. (MA CZM)

Threats

Besides major storms, one of the major causes of sand dune change is trampling by people. Walking or playing on sand dunes damages the beach grass that holds dunes together. It takes only a few footsteps to kill a beach grass plant. When the plant dies it cannot hold the sand in place. As a result, winds blow away the sand breaking down the dune. (NJSG)

Activities and resources

- [Why are Dunes Important](#): Classroom lesson by the New Jersey Sea Grant Consortium
- [Dunes and Dune Grass](#): Classroom lesson by the New Jersey Sea Grant Consortium
- [Coastal Dune Protection & Restoration](#): Bulletin by Woods Hole Sea Grant
- [Sand Dunes](#): Information about sand dunes provided by Cape Cod's National Seashore in MA
- [Beach grasses in MA overview](#): This MA Office of Coastal Zone Management site has pictures of native beach grasses species (many grasses are shown so be careful you are looking at beach grass)
- [Eroding Beaches Activity](#): This 3rd grade activity allows students to see how waves can change beaches quickly

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