

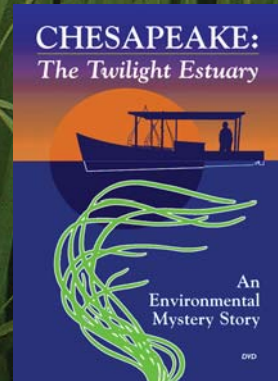
MARYLAND SEA GRANT

CHESAPEAKE

THE TWILIGHT ESTUARY

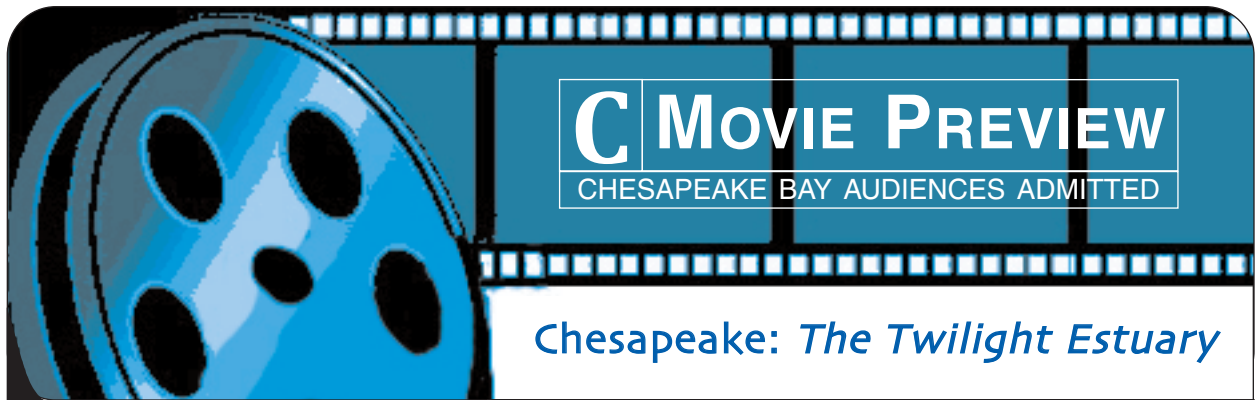
Study Guide

Grades 5-12



NOAA

www.mdsg.umd.edu



a documentary film about our important seagrasses: what they are, where they live, why they're important and what's happened to them

WHAT ARE THEY? Seagrasses are grasses that grow underwater.

WHY ARE THEY IMPORTANT? Seagrasses provide a place for small fishes to hide, a place for blue crabs to molt and waterfowl to feed, and a fishing ground for watermen.

WHAT'S HAPPENED TO THEM? Since the 1960s Bay grasses have steadily declined. One way to document this loss of seagrasses is by photographs taken from the air. It was found that thousands of acres of seagrasses had disappeared.

By using sampling stations in the Chesapeake Bay scientists tried to understand why the seagrasses were declining. It was thought that farm chemicals were the cause of the disappearance, in addition to oil pollution and chlorine. Even though these pollutants contributed to the decline, they weren't the main cause. Can you think of other reasons why seagrasses declined?

Some clues:

- the sun is the source of energy for seagrasses (photosynthesis). They need the light from the sun in order to grow.
- increased sediment and nutrient pollution flowed into the Bay
- an increase of epiphyte growth was found on the seagrasses.



What do you think? Watch *Chesapeake: The Twilight Estuary* for more clues

CHESAPEAKE BAY QUICK FACTS

- 1 The largest estuary in North America
- 2 More than 16 kinds of seagrasses that grow in the shallow waters of the Bay
- 3 About 200 miles long from the Susquehanna River in the north to the Atlantic Ocean in the south
- 4 Drains a watershed of about 64,000 square miles in the District of Columbia and six states – New York, Pennsylvania, Delaware, Maryland, Virginia, and West Virginia
- 5 Over 150 tributary rivers and streams – freshwater from the Bay
 - 50% from the Susquehanna River
 - 40% from western shore tributaries
 - 10% from eastern shore tributaries
- 6 8,000 miles of shoreline
- 7 3,227 square miles of surface area (including tidal tributaries)
- 8 Depth of the bay varies from an average of 21 feet to a maximum of 175 feet
- 9 Home to more than 2,700 different types of plants and animals
- 10 Provides more blue crabs than anywhere else in the world
- 11 About 12,000 years old



Chesapeake Research Consortium

KEY MOVIE TERMS

- **ecosystem:** a community of people, animals and plants, together with its environment
- **epiphytes:** plants that grow on or attach to another living plant for support
- **estuary:** where freshwater rivers and streams meet saltwater oceans
- **habitat:** a place where groups of plants and animals make their home
- **herbicides:** chemicals that kill plants, like weeds
- **nutrients:** food or chemical that plants and animals need to grow and survive
- **photosynthesis:** a process where plants, algae, and some bacteria take energy from sunlight to make food
- **plankton:** tiny animals and plants that live in the ocean, the sea and freshwater rivers
- **seagrasses:** grasses that grow underwater (also called baygrasses, submerged aquatic vegetation or SAV)
- **sediment:** small-sized material that drifts through the water then settles on the bottom of streams, rivers and bays
- **sewage:** waste that gets carried away by sewers and drains
- **tributary:** a stream or river that flows into a larger stream, river or other body of water
- **watershed:** area of land that drains into rivers, lakes, bays or other bodies of water

TEST YOUR KNOWLEDGE

The largest _____ in North America, the Chesapeake Bay is about _____ miles long and has over _____ tributary rivers and streams. The surface of the Bay is about _____ square miles. The Chesapeake Bay watershed drains _____ states and the District of Columbia. There are over 8,000 miles of _____. The depth of the Bay varies from an average of _____ feet to 175 feet. There are more than _____ kinds of underwater seagrasses that grow in the shallow waters of the Bay.

WORD SEARCH

Z	W	S	M	E	T	S	Y	S	O	C	E
E	K	A	E	P	A	S	E	H	C	T	F
F	Y	T	T	A	U	V	K	R	P	G	S
H	R	F	M	E	G	A	W	E	S	E	E
W	A	O	T	E	R	R	F	U	T	Y	D
U	U	L	K	W	G	S	A	Y	D	S	I
B	T	A	T	I	B	A	H	S	Q	F	M
E	S	S	T	D	D	P	W	E	S	L	E
S	E	F	J	C	I	I	F	E	D	I	N
P	T	J	F	P	D	F	H	F	S	W	T
S	T	N	E	I	R	T	U	N	R	S	M
L	N	O	T	K	N	A	L	P	D	W	N

Circle words from the KEY MOVIE TERMS diagonally, across, up, down and backwards

Want to find out more about the Chesapeake Bay? Check out some links:

Maryland Sea Grant College

<http://www.mdsg.umd.edu/issues/chesapeake/>

The Chesapeake Bay Program

<http://www.chesapeakebay.net/bayfun.htm>

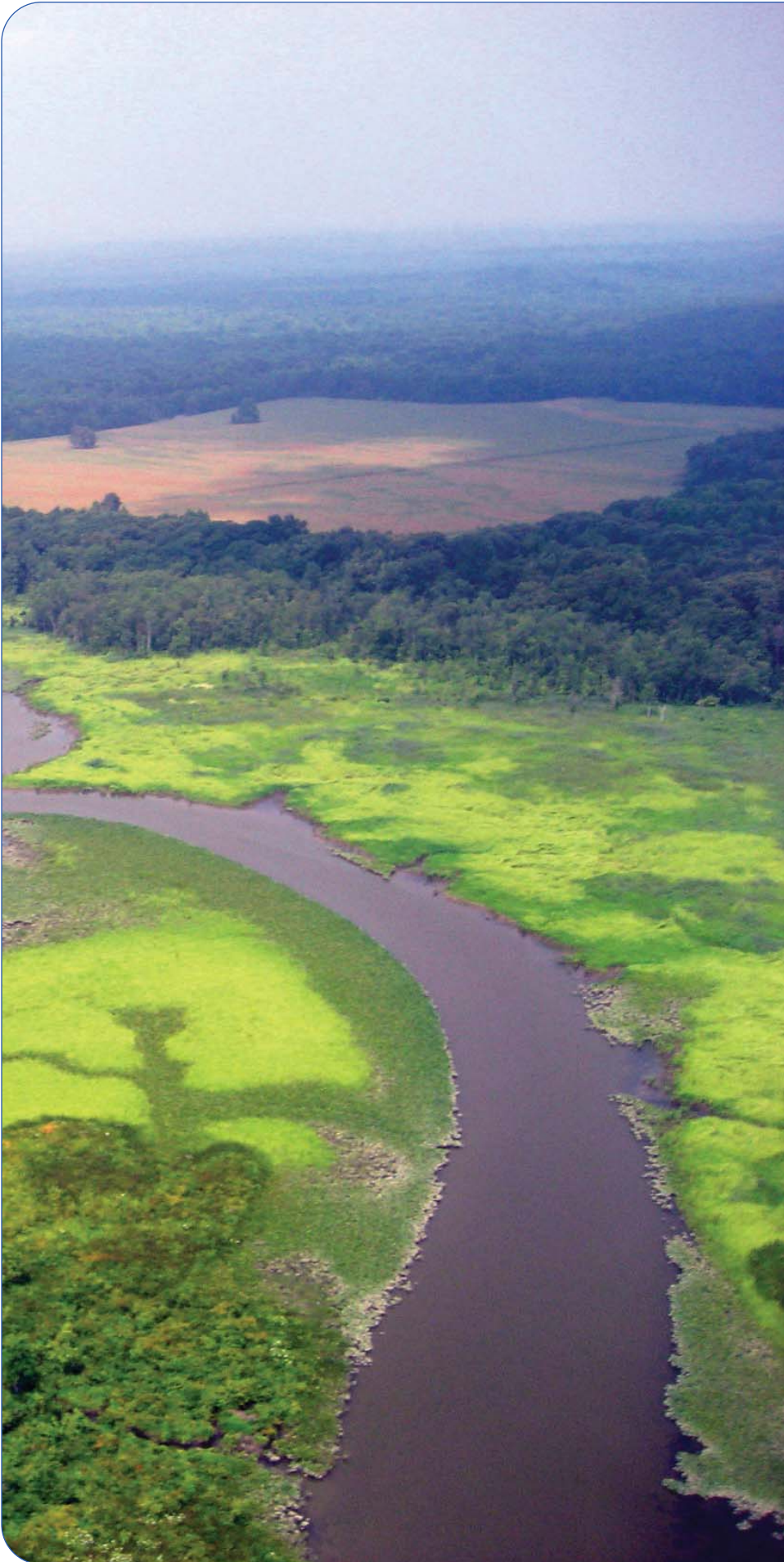
The Department of Natural Resources

<http://www.dnr.state.md.us/Bay/education/kids.html>

<http://www.dnr.state.md.us/baygame/>

Chesapeake Bay Gateways Network

<http://www.baygateways.net/factsandfun.cfm>



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www.mdsg.umd.edu/store/videos

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