

Oil pollution in West Estonia

Topic: Dangers which threat birds when people pollute the environment.

1. For stating the problem:

Read through the story and tell in your own words what the problem is.

On Saturday, 28 January 2006 a vast oil pollution was discovered on the coastline of West and North-West Estonia polluting water and ice. Rescue teams found spots of oil and dirty birds on a strip of coast about 15 kilometres long. On Sunday the rescuers gathered about 40 dead birds from the coast in West Estonia and about 70 in North-West Estonia. Most of the perished birds were elder ducks and long-tailed ducks but swans were dirty too. Experts stated that by 1 February about 5000 birds had perished and many more who came in contact with oil were going to die. The rescuers succeeded in saving only a few birds.

1.1. What is the main question which has not been answered in the text?

Background:

Ships carry enormous loads of dangerous substances, e.g. oil and different minerals which endanger living beings when getting into water. Due to the accidents which have happened with tankers at sea, every year about 100, 000 whales and millions of sea birds perish. Raw oil decomposes quickly in salty sea water but in a shallow coastal sea the effect of pollution may be felt for years. Water birds have been endangered by oil from the beginning of 20th century and the consequences have been so severe that we call it oil plague today. An oil leak of 200 tons may kill 40 000 sea birds.

2. State the research question coming from the problem:

2.1. State a scientific presumption, what could be the answer to the question?

3. Experiment:

Equipment: water, diesel fuel or oil, a feather, a jar, a paper clip, a ruler, a stopwatch.

1. Take the jar and fill it with water up to the top line of the measuring scale
2. Fix the paper clip to the feather
3. Set the feather onto the surface of clean water, wait for 10 seconds and fix how deep the paper clip is from the surface
4. Remove the feather
5. Pour half a teaspoonful of oil into the same jar
6. Put the feather slowly into the jar and let it go the moment the paper clip touches the surface.
7. Wait for ten seconds.
8. Fix how far the paper clip is from the surface
9. Add two more teaspoonfuls of oil or diesel fuel.
11. After 10 seconds fix the depth of the paper clip from the surface

4. Conclusions

4.1. At which amount of oil did the feather sink the most? Why?

4.2. At which stage of the experiment did the feather sink the least? Why?

4.3. How do the birds get affected when there is a small amount of oil in the water? Why?

4.4. Why is it essential for birds to have a natural protective layer on feathers?

4.5. Explain how the oil which has got into a body of water can affect the food chain connected with it?

4.6. Give an answer to the research question stated at the beginning of the experiment.

4.7. Was the presumption you made, right?

Which sources of pollution except oil leaks from sea transport may endanger the fauna of the seas?

5. Make a mind-map about the factors which endanger sea life.