



QUESTIONS AND ANSWERS ABOUT RADIATION AND WILD FOODS SAFETY IN ALASKA

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The nuclear reactor accident in northeast Japan that was caused by the March 11, 2011, earthquake and tsunami has generated concerns about radiation exposure beyond Japan's borders. Given the nature of the accident and the dilution in both air and water, experts believe the risk of radiation directly reaching Alaska is extremely low. What is less certain is whether Alaskans face radiation risks from handling or eating wild birds that might have been in Japan at the time of the accident, and later traveled to Alaska. We suspect the risk is also quite low for a number of reasons that are described below. An inter-agency group representing health, wildlife, and the environment is working together to better understand the actual risk to subsistence food consumers and to update information if the situation changes.

1) How could radiation from the Japanese power plant accident reach North America?

Radiation released from a nuclear power plant could be in the form of a gas, a solid particle, a dissolved chemical in water, or some combination of releases. In some cases, radioactive particles could become airborne and travel long distances. Those particles that drift in the atmosphere could settle on water and land, commonly known as "fallout". Radioactive particles can also travel with ocean currents. People or wildlife can be exposed to radiation both internally (through breathing, drinking, and eating) and externally (through skin contact).

2) What is the chance that Alaskans are eating food that has harmful radiation in it?

The U.S. Food and Drug Administration (FDA) states that, based on current information regarding the accident at the nuclear power plant in Japan, there's no risk of exposure to concerning levels of radiation from eating foods in the commercial U.S. food supply. Additionally, the risk of radiation from eating subsistence foods in Alaska is expected to be extremely low due to the long distance between Japan and Alaska and our current understanding of how migratory species such as birds might have been exposed to radiation from the incident.

3) How is the FDA making sure the food we buy in the store is safe?

The FDA is actively measuring radiation levels in commercial foods to assure a safe food supply. FDA is also working with the U.S. Customs and Border Protection on measuring contamination of imported foods at U.S. borders. FDA issued guidance in 1998 regarding safe levels of radiation in foods.

4) Have concerning levels of radiation been identified in food in North America?

Extremely low levels of radiation have been found in milk in California, possibly as a result of cows grazing in areas that received some airborne radiation. Up until now, the radiation levels in

milk have been far below the point where they could be considered a threat to human health, even for people who drink a lot of milk.

5) How might the radiation affect Alaska fish and other seafood (including marine mammals)?

The great quantity of water in the Pacific Ocean quickly dilutes the concentration of radioactive material, so fish, seaweed, and other seafood from Alaska are likely to be unaffected. In addition, cesium-137, one of the radioisotopes released from Japan, is not taken up well in marine food chains, so it's unlikely to accumulate (build up) in higher level organisms like marine mammals. Other radioisotopes are not a problem for people who eat marine mammals because they either have short half-lives (e.g., iodine-131) or end up in parts of the animal's body that aren't commonly eaten, like bone (e.g., strontium-90).

6) How might the radiation affect migratory birds flying to Alaska from Japan?

A number of bird species that breed in Alaska migrate through Japan. If they land in contaminated areas or ingest contaminated food or water, it's possible that they could be exposed to radiation and carry some of that radiation to their breeding grounds.

7) Is there any way for me to tell if a wild bird is carrying a dangerous level of radiation?

We don't know for sure, but it's possible that a bird with a high level of radioactive contamination may appear ill. It is not uncommon to find sick or dead birds. If you come across large numbers of dead or ill-looking birds, it is not likely the result of radiation; however, you should contact the U.S. Fish & Wildlife Service at 1-866-527-3358.

8) What is being done to find out whether eating Alaska migratory birds is harmful to our health because of radiation?

The inter-agency workgroup is gathering information that will help us determine whether migratory birds pose a radiation risk to consumers. Our activities include:

- Creating a list of bird species that are known to move through Japan (though in most cases we aren't able to know for sure whether a species was likely to be near the nuclear accident at a time when radiation was being emitted) and then fly to Alaska sometime during or after early March. The same list also shows those species that are known NOT to pass through Japan on their way to Alaska. The list is available at alaska.fws.gov/ambcc/hunter.htm
- Learning how much radiation has been taken up by birds during other radiation events, such as the Chernobyl nuclear accident and historical nuclear processing facilities in the U.S. (e.g., Hanford in Washington and Savannah River in Georgia).
- Finding out where in the bird's body each type of radioactive element goes.
- Assessing the likelihood that enough radiation could accumulate in birds migrating to Alaska to pose a health risk to people who eat them. At this time, there is no indication that such a risk exists.
- A collaborative effort among the University of Fairbanks, the State of Alaska, USFWS, Aleutian Pribilof Islands Association and the Department of Energy (Consortium for Risk Evaluation with Stakeholder Participation (CRESP) has been monitoring radiation levels around Amchitka and Adak Islands since the 1990s and has background data on certain

plants and animals. Sample collection will continue this year to evaluate any changes from previous years.

9) What can I do to have less chance of being harmed by radiation from wild Alaska birds?

At this time, there is no indication that such a risk exists. However, if you're concerned, there are some things you can do to further minimize the potential for radiation exposure from wild birds.

- Choose to eat birds that are NOT known not to migrate through Japan by looking at the accompanying list alaska.fws.gov/ambcc/hunter.htm
- Choose to delay harvesting the wild birds that may have travelled through Japan for at least a few weeks after they arrive in Alaska to allow time for any cesium-137 (the main radionuclide of concern) to be eliminated from the bird's body. In a live bird, cesium-137 is metabolized (processed) and then excreted, so that what remains in the body is reduced by one-half every 10 days or so. Once killed, however, the half-life of cesium-137 in bird meat is 30 years.
- Do not pick-up or harvest dead birds or birds that look ill.
- Remember that proper cooking and handling methods can protect you from food-borne illnesses, but they won't protect you against any radiation that might be in the foods. Radiation cannot be removed by cooking, freezing, boiling, or other food preparation methods.

10) Could I be at risk of radiation exposure from eating wild bird eggs?

Wild bird eggs have not been tested for radiation, so we don't know for sure. However, we think it's highly unlikely that much radiation would end up in bird eggs, because the radioisotopes of potential concern (e.g., cesium-137) don't stay in the bird's body for very long. By the time a female bird lays her eggs in Alaska, most of the radioisotope will already have been excreted.

11) How can people best protect themselves when eating or handling wild birds or domestic poultry?

We believe the possibility of coming into contact with enough radiation to be harmful by eating migratory birds is small. However, there are always health risks from improper handling or preparation of wild foods, due to bacteria or viruses that may be present. Washing with soap and water or most commercial hand cleaners after cleaning birds is important. It's also important to avoid hand-to-mouth activities like smoking, eating, and drinking after handling raw wild or domestic birds until after you are able to wash your hands. Always thoroughly cook any wild or domestic birds before eating. If possible, use a food thermometer to ensure meat has reached the proper cooking temperature. Cook whole birds or their parts to 165 degrees (Fahrenheit). Use an oven temperature of at least 325 degrees. If cooking in the field, make sure that the bird (or any bird parts cooked separately) is cooked until the inside juices run clear.

12) Could I be exposed to harmful levels of radiation by drinking surface water that ducks or other migratory birds have been in?

Because the amount of radioactive material that might be carried by wild birds to Alaska is likely to be very small, local water sources that birds have been active in aren't likely to pose a radiation risk. However, unfiltered or untreated water can carry bacteria and parasites that do affect human health, so people should always follow safe water handling practices.

13) Will radiation remain in animal or plant materials if they are frozen?

Yes. Radioactive particles will continue to decay and the concentration of radiation will decrease over time.

14) If someone were exposed to radiation from eating or handling a contaminated wild bird, what health symptoms might he or she experience?

It's highly unlikely that a person could eat enough tainted bird meat or eggs to notice any sickness in the short-term because any radiation present in these foods would likely be at a low level. We suspect that if a migratory bird were exposed to a high level of radiation in Japan, it would likely die before reaching Alaska.

15) What should I do if I feel sick after handling wild or domestic birds?

Contact your health care provider.

For more information

- Alaska Department of Health and Social Services (DHSS) Radiation Information, including health alerts and advisories: www.epi.alaska.gov/eh/radiation
- Migratory Bird Lists are available at: alaska.fws.gov/ambcc/hunter.htm
- U.S. Food and Drug Administration (FDA) Radiation Safety: www.fda.gov/NewsEvents/PublicHealthFocus/ucm247403.htm
- U.S. Environmental Protection Agency (EPA) Radiation Monitoring: www.epa.gov/japan2011/
- EPA air monitors in Alaska: www.epa.gov/radiation/rert/radnet-juneau-exp-rate.html
- Table of Radioisotopes That May Impact Food Resources: www.epi.alaska.gov/eh/radiation/RadioisotopesInFood.pdf
- World Health Organization (WHO) situation and monitoring reports on Japan's damaged nuclear reactor: www.wpro.who.int/sites/eha/disasters/2011/jpn_earthquake/list.htm
- Information on the migratory routes of Alaska bird species is available at: alaska.fws.gov/media/avian_influenza/index.htm

State and federal human and wildlife health agencies will continue to update materials as new data become available, so check back regularly for the latest information.